

Morphologically Derived Adjectives in Spanish

Antonio Fábregas

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by Antonio Fábregas

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Abbreviations

\sqrt{xx}	root
\sqrt{xx}	phonological index related to a root
1	first person
2	second person
3	third person
AP	adjectival phrase
AspP	aspectual phrase
Caus	causative head
CP	complementiser phrase
DP	determiner phrase
E	event essence
F	feminine
KP	case phrase
M	masculine
NP	noun phrase
Num	number
PART	participle
PL	plural
Poss	possessive head
PP	(lexical) prepositional phrase
pP	functional prepositional phrase
PredP	predication phrase
Q	qualia
R	underspecified relation
SG	singular
Sim	similitudinal head
SPLT	superlative
TP	tense phrase
ThV	theme vowel
VP	verbal phrase

Introduction

1. Goals and overview

1.1 The empirical base

This book has two related goals. The main one is to provide a coherent, theoretically-informed description of the morphological processes that derive adjectives from nouns and verbs in Spanish. This area of morphology has received relatively little attention in the previous literature, which has focused mainly on nominalisations and parasynthetic verbalisations.

The examples in (1) show some adjectives derived from nominal bases. Adjectives derived from verbal bases are exemplified in (2).

- (1) a. aren-oso
sand-y
- b. cobr-izo
copper-y
- c. embust-ero
lie-ar
'liar'

- (2) a. creí-ble
believe-BLE
'believable'
- b. quebra-dizo
breake-DIZO
'fragile'
- c. abus-ón
abuse-ÓN
'that frequently abuses others'

The heavy empirical side of the book is reflected in its structure: the chapters discuss specific classes of derived adjectives. Filling this descriptive gap is the main goal of this monograph, for several reasons. The first one is that personally I do not think that theoretisation can be done without an exquisite attention to the facts, and the area of derived adjectives is one where we still lack a lot of detailed information

about the relevant facts. Second, we live in times where the theoretical universe is rapidly changing, and any claim made about the theoretical status of a fact is subject to revision; by letting this monograph have a strong empirical side there is a bigger chance that it will still be useful in 10 years. Thus, with this monograph we want to provide a detailed, analytically-oriented overview of the operations that produce adjectives such as those in (1) and (2), and their restrictions: what are the possible derived adjectives in Spanish, how do individual suffixes differ in their structure and interpretation, and how do adjectives relate to their bases?

1.2 Overview of the main theoretical argument in the book

However, this monograph has a second goal, which is purely analytical. The empirical description is incardinated within a particular set of analytical choices, in such a way that the theoretical concerns permeate the description and analysis of the derived adjective classes. From a theoretical perspective, this monograph is concerned with the question of what an adjective is, and what syntactic primitives are used to define a linguistic object as adjective. The class of adjectives, as opposed to nouns and verbs, has traditionally been extremely difficult to define, and most theoretical approaches define them as parasitic categories that lack the properties of nouns and verbs. Moreover, decades of research have identified some good examples of languages that lack adjectives in any grammatically relevant notion of the term. The question is how are ‘adjectives’ formed in a language that seems to have them on the surface, and we will argue through the book that Spanish recycles prepositional structures for this purpose.

This book will frame the discussion about derived adjectives within a Neo-Constructionist view of lexical categories (Halle & Marantz 1993; Hale & Keyser 2002; Borer 2013). In particular, I argue for a particular approach to adjectives that has been advanced in Hale and Keyser (1993) and particularly Mateu (2002: 276): adjectives, at least in Spanish, are built as prepositional structures. The general view is that the lack of a set of properties that identify adjectives as a natural class, as well as the existence of languages without adjectives, are a sign that adjectives are not primitive categories. Languages that include adjectives in their repertoire of lexical categories build them using syntactic elements from other categories. Spanish, we will argue, uses prepositions – other languages might use other procedures, perhaps stative verbs, but we leave the matter open.

As generally recognised in the literature, there are different types of adjectives with distinct properties. This monograph deals with two in particular: qualifying and relational adjectives. Prototypical adjectives are called ‘qualifying’ – *beautiful, long, interesting, sweet*.... Almost all of them allow degree modification (3).

- (3) a. muy hermoso
very beautiful
b. largu-ísimo
long-SPLT
'very long'

Qualifying adjectives are used to predicate additional properties of the kinds or individuals expressed by nouns, and their meaning is quite stable even when combined with different types of nouns. In Spanish, they can also appear prenominally or postnominally, as discussed in detail in Chapters 2 and 3.

We also have relational adjectives – *biological, ecumenical, Nigerian, presidential...*, generally but not exclusively derived from nouns (see Chapter 6). When not coerced, they are unable to carry degree modification, as shown in (4). They are also unable to provide descriptive properties of an individual. Instead, relational adjectives express underspecified relations between entities, a property that can be shown by the fact that their interpretation depends to a great extent on the meaning of the noun they combine with, as shown in (5).

- (4) a. *biologiqu-ísimo
biological-SPLT
Intended: 'very biological'
b. *suficientemente nigeriano
enough Nigerian
- (5) a. reloj acuático
watch aquatic
'watch that can be submerged in water'
b. ave acuática
bird aquatic
'bird that lives in the water'
c. parque acuático
park aquatic
'amusement park that offers water-related activities'

In Chapter 3, we will get deeper into the distinction between the two classes and the whole set of empirical properties that differentiate them, but for the time being let us take it at face value: within the adjective class we have a group of elements like (4), (5) and (6), called relational adjectives, that seem to lack most of the properties of prototypical adjectives.

- (6) adjetiv-al
adjective-AL
'adjectival'

These elements – I will use the term ‘adjective’ for expository convenience from now on – behave as case-marked nouns – not as prototypical adjectives – with respect to syntactic position, interpretation and agreement properties. They cannot combine with degree modifiers, reject the prenominal position and cannot function as semantic predicates.

The question is why relational adjectives should exist. In the domain of nominalisations, there is no class of nouns that express a general relation to the verbal eventuality or the quality expressed by the adjective, and which lack the main grammatical properties of nouns – for instance, being unable to combine with quantifiers and determiners. The same goes for verbalisations: there is no class of derived verbs that fail to combine with tense, aspect or mood and simply express a general relation with the noun or adjective that serves as their base. This class of ‘defective’ elements is exclusive to the domain of derived adjectives.

The issue becomes more worrying when one notices that not all relational adjectives derive from nouns. Relational adjectives – at least, adjectives sharing all the relevant grammatical properties with relational adjectives – can also be derived from verbs, as illustrated in (7) and presented in detail in Chapter 6. Thus, what makes relational adjectives special cannot be a property of the base, specifically not that the base is nominal, as was wrongly described in previous works (eg., Bosque 1993 or Fábregas 2007b): it must be a property of the structure introduced by the adjectivalising suffixes themselves.

- (7) administra-tivo
 administrate-(T)IVO
 ‘administrative’

The answer to this puzzle, I will argue, is that relational adjectives are projections of a truncated prepositional structure which only includes a head that expresses an underspecified relation between two entities, one of them expressed as the base of the adjective.¹ Lacking lexical information that specifies that relation, the resulting structure cannot function as a predicate: it is in fact an argument of an element external to it.

However, case is not an adjectival category: it is a category that belongs to the prepositional domain. The second stage of the argument that Spanish adjectives are prepositional structures is the observation that most suffixes that can produce

1. As we will discuss in chapter three and later in this chapter (§1.3.1), this relational head is identified as K(ase). We adopt a mixed view of case, which is detailed in Cabré and Fábregas (2019). Our view is that inherent case – that characterises, among others, prepositional structures – is the effect of the presence of a K layer above the DP taken as argument of the predicate; this is in contrast to structural case, which we assume involves standard feature-checking.

relational adjectives are also able to produce qualifying adjectives. (8) illustrates the qualifying use of *-al* and *-(t)ivo*.

- (8) a. norm-*al*
 rule-*AL*
 ‘normal’
 b. llama-*tivo*
 appeal-*TIVO*
 ‘appealing’

Unless we posit some type of generalised homophony between affixes that express case and those that build qualifying adjectives, the pieces that compose a qualifying adjective must belong in the same domain as those that build a relational one. In fact, following Nanosyntactic assumptions about spell-out, we will argue that the structure that defines a relational adjective is also present inside qualifying adjectives. Some languages – including Spanish – recycle prepositional structures to build the objects that we call, descriptively, adjectives. This is because UG does not provide individual languages with a primitive adjectival head, as I argue extensively in Chapter 2. Within the structure of prepositions, the head that expresses a general relation is conceptually specified by a lexical layer. This lexical layer provides the general relational head with content that allows the prepositional structure to function as a predicate. My claim is that qualifying adjectives differ from relational adjectives in that they are projections of full prepositional structures, including the lexical layer that assigns a conceptual domain to the relation. For this reason, qualifying adjectives function as predicates, receive degree modification, and establish scalar oppositions.

A consequence of the proposal that Spanish adjectives are built by recycling structures belonging to another category is that the types of derived adjectives documented in Spanish are defined by the conceptual semantics associated to the adjectivalising suffixes, and not by morphosyntactic features that anyways are not specifically defined for adjectives. Specifically, we will argue in Chapters 4 and 5 that the four types of denominal qualifying adjectives – possessive, similitudinal, causative and dispositional – reflect each one of the qualia categories in Pustejovsky (1995) – constitutive, formal, agentive and telic, while deverbal adjectivalisers generally operate on the agentive, telic or constitutive quale. The relations of polysemy involving suffixes reduce to plausible natural classes within the qualia structure, as well. We will see that, with a few exceptions that can be reduced to constraints at the semantic component, the grammatical behaviour of the different qualifying adjective classes is homogeneous in terms of gradation, position or agreement. The qualifying adjective classes are also sensitive to conceptual semantic properties associated to the structure, such as whether the subject of the adjective is human,

whether the base expresses a mental state or whether the event can be construed as externally or internally caused. Therefore, while relational adjectives are syntactically different from qualifying adjectives, the types of qualifying adjectives are differentiated by conceptual semantics.

While this is the main theoretical argument that runs through all the chapters of this monograph, the detailed study of adjectivalisations will make other puzzles emerge. Of particular importance in the last chapters of the book – 6, 7, 8 and 9 – is the observation that – leaving participles aside – deverbal adjectives in Spanish always have a non-episodic reading, that is, they do not denote actual participation in the eventuality at a specific time and world. Thus, the adjectival participle in (9a) contrasts with the deverbal adjectives in (9b) and (9c) in that the first implies necessarily that the skin has participated in a specific hydrating event at some point, while the other two do not entail that the skin has been hydrated or that the cream has in fact hydrated something.

- (9) a. su hidrata-d-ísima piel
her hydrate-DO-SPLT skin
'her very hydrated skin'
- b. su hidrata-ble piel
her hydrate-BLE skin
'her skin, that can be hydrated'
- c. crema hidrata-nte
cream hydrate-NTE
'moisturising cream'

This, we will see, is a generalisation that cannot be appropriately explained by positing modal operators contained in the adjectivalising suffix. From the perspective of our analysis, they pose the problem of how this non-episodicity is produced: prepositions are not characterised by the property of cancelling the temporal implications of verbs, for instance. Our proposal is that episodicity is not cancelled because it was never defined on the base of the adjective. In order to be episodic, the verbal structure must project at least Asp(ect)P, and this projection is not present in deverbal adjectives. Only participles contain AspP, and because of this, only participles can be interpreted episodically.

2. Nanosyntax: The spell-out procedure

This monograph adopts a version of Nanosyntax (Starke 2002, 2009; Ramchand 2008; Caha 2009; Lundquist 2009; Dékány 2012; DeClercq 2013; Fábregas 2016a; Gibert Sotelo 2017; see Baunaz & Lander 2018 for a recent overview). Nanosyntax

is a Neo-Constructionist approach to grammar where lexical exponents are directly inserted into syntactic constituents, without the intermediation of morphological operations (see. Baunaz & Lander 2018: 11). This contrasts with for example Distributed Morphology (DM), where the syntactic tree, once transferred to the phonological branch, can undergo a number of operations prior to the insertion of exponents; cf. Bonet (1991), Halle and Marantz (1993), Noyer (1997).

Even though many of the technical observations made in this monograph can be recast in DM or other Neo-Constructionist frameworks, our adoption of Nanosyntax reflects the theoretical goal of trying to reduce as much as possible the morphological component. At the very least we want to severely restrict the morphological operations that can be performed on structures after the syntactic computation is done. To put things in a simple way, Nanosyntax adopts many of the ideas of DM, but minimally differs from it in the claim that morphological operations should be very restricted, and ideally completely removed from grammar so that syntax, semantics and phonology account for all phenomena. Morphological operations in DM – and in general in Lexicalist approaches – are typically idiosyncratic, non-general and lack consequences for syntax and semantics: for instance, feature impoverishment (Bonet 1991) applies in some language varieties to some combinations of features in some specific configurations, and their only effect is in which specific exponent is chosen to spell out a particular head. Also, morphological operations are too powerful because they are unrestricted in most cases. There are no described constraints on when feature impoverishment or fission can happen, or on when the introduction of dissociated morphemes is allowed.

This said, we are well-aware that there are empirical facts that seem to argue in favour of at least having a post-syntactic component where some morphemes with an unclear role in syntax and semantics are introduced – the clearest example of this being Theme vowels with distinct conjugation classes (Oltra-Massuet 1999). We do not believe that this monograph will convince the reader that morphology should be totally dispensed with in linguistic analysis, if only because it does not provide an account of all cases where a morpheme has an unclear role in syntax. In fact, as the reader will see, we will be forced at some points in the monograph to accept that there are selectional restrictions between bases and adjectivalisers. In practice, we adopt Nanosyntax here as a methodological device to push ourselves to accounting for as many properties as possible just with syntax and semantics: whenever we fail to do so it will be either due to our intellectual limitations, or – more interestingly – because in our current theoretical universe those properties cannot be analysed without an additional component. We will not be shy to admit it in the course of this monograph whenever our proposal falls short and we are forced to introduce some lexical constraint.

Let us now present the theoretical background of Nanosyntax that will be relevant in this monograph, starting with the assumptions about the syntactic representation. In some extreme approaches to Nanosyntax (Starke 2009), each head contains one single feature and the syntactic structure is strictly cartographic, consisting of a rigidly ordered Functional Sequence. In this monograph, we will not follow this extreme approach: we will allow heads to contain more than one feature – in part due to the existence of agreement, in the form of non-interpretable features, and we will not assume a rigidly ordered functional sequence: syntax combines heads according to the formal features they carry, and provided that the structure can be interpreted both in semantics and phonology, the same head can introduce different types of complements and be dominated by different kinds of structures. In this respect our approach is closer to Wiltschko (2014): the only universal hierarchy defined by natural languages is one where different structural domains are ordered – roughly, the VP-area, the TP-area, the CP-area, etc., but within each domain individual languages (and varieties) might allow distinct combinations of items, depending on the feature endowment of the specific heads used.

In contrast to some Nanosyntactic approaches, we will assume that syntax also contains category-less roots (Marantz 1997), but we will follow Borer (2013) in viewing them as indexes to phonological exponents (Borer 2013). In Borer's system, these are the three types of heads that syntax manipulates:

- a. roots ($\sqrt{476}$, $\sqrt{1066}$, $\sqrt{1453}$...), each one introducing a distinct category-neutral exponent (*attack*, *fight*, *fall*...)
- b. lexical heads (N, V, P...), each one defining a different lexical category
- c. functional heads (Number, Aspect, p...), that expand the lexical categories defined by the heads in (b)

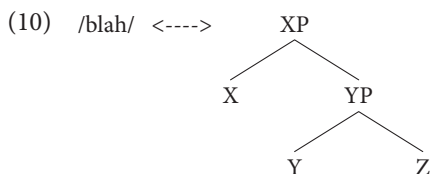
The aspect of Nanosyntax that we will fully adopt is the spell-out procedure. The Nanosyntactic spell-out procedure is characterised by three specific principles which we will now discuss one by one. Admittedly, these are theoretically-internal assumptions that to some extent logically follow in a system that tries not to have morphological operations. We will now provide for each one of them a brief presentation where we give evidence of their initial plausibility and justify why they are, at least, worth investigating as hypotheses about how spell out is performed.

- a. phrasal spell-out
- b. the exhaustive lexicalisation principle
- c. the superset principle

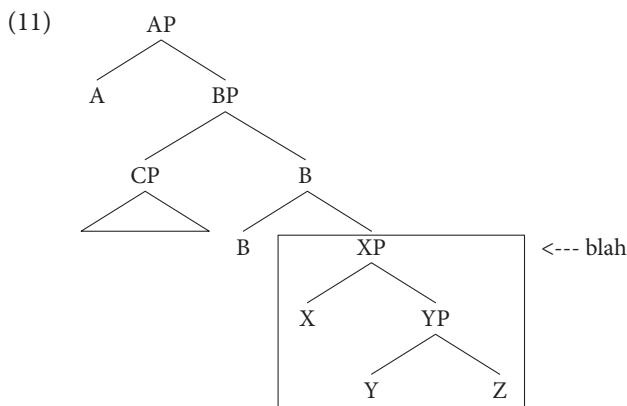
2.1 Phrasal Spell Out

Phrasal spell-out refers to the hypothesis that exponents can lexicalise syntactic constituents of any size. Like all hypotheses, Phrasal Spell Out is a proposal that has to be empirically tested, and which might be wrong, although it is a clear component of the Nanosyntactic theory. Let us first see how it works, and then provide some empirical illustration.

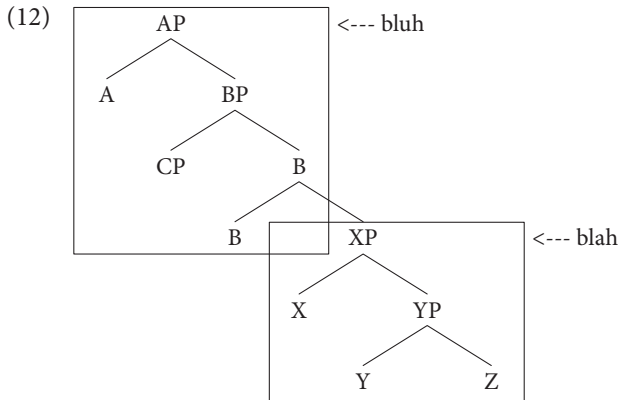
(Standard) Distributed Morphology (DM, Halle & Marantz 1993) allows post-syntactic operations mapping syntactic terminals to morphemes. In contrast, in Nanosyntax, an exponent does not have to be introduced in a head – which is a trivial constituent: it can also be introduced in a non-terminal node, in which case it will spell out the whole structure. Technically, this makes a DM procedure like fusion, which maps two heads into one single position of morphological exponence, unnecessary. Thus, in Nanosyntax the lexical entry of a single exponent can specify a syntactic tree as its context of insertion.



Note that this does not mean that the syntactic tree is lexically stored. Quite the contrary: syntax generates a complex syntactic constituent, and at spell-out the set of exponents is examined in order to find the one whose lexical entry corresponds to the relevant structure generated (11).

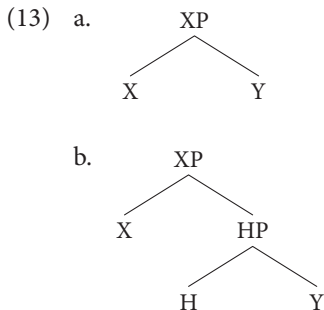


We follow Caha (2009) in the claim that the material that has already been spelled-out in the tree structure is ignored for the computation of what counts as a syntactic constituent. Thus, in (12), once the material below has been lexicalised by (10), the remaining structure counts as a single constituent and in principle the language might have another exponent that spells out the whole.

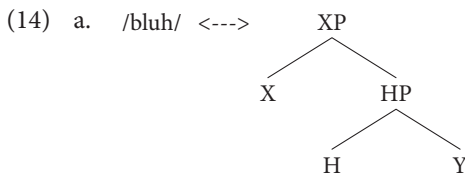


In contrast to DM, which through morphological operations can modify the syntactic tree prior to lexical insertion, Nanosyntax does not allow morphology to modify the structure generated by syntax in any way. In Fábregas (2014) I argued that spelling out whole phrases as opposed to only syntactic terminals has empirical advantages beyond the technical simplification of making fusion unnecessary, specifically in the case of haplology.

Consider (13a), and assume that there is one single exponent, /blah/, that lexicalises both X and Y – either by Phrasal Spell Out or by Fusion. Both theories can do this. Contrast this with (13b). Both theories predict that the exponent /blah/ should not be used in (13b). In Phrasal Spell Out, (13b) cannot be lexicalised by /blah/ because there is no single node that contains both X and Y without containing H (Caha 2009). In a theory with Fusion, /blah/ is equally unavailable, but the reason is that X and Y cannot undergo Fusion because X and Y are not sisters (Bobaljik 1994).



The two theories differ in what the spell out of (13b) should be. In Phrasal Spell Out, given that lexical items can be associated to complex constituents, there could be a single exponent /bluh/ (14a) that spells out the tree in (13b). If (13a) and (13b) are both spelled out as affixes, the surface result would be a seemingly paradoxical one: even though (13b) has the morphosyntactic features of /blah/, and there has been an increase in the structural complexity of the syntactic tree, there will not be an increase in the complexity of the morphological marking. /blah/ will not emerge, and it will be replaced by the single exponent /bluh/ (14b). In other words: the morphosyntactic features associated to /blah/ are still in the tree and will be interpreted by syntax and semantics, but /blah/ will not be spelled out in the phonology.



b. [[base]-blah] + H --> [[base]-bluh]

Descriptively, we would get a haplology situation in the surface: even though the syntactic features for a morpheme will be present in the structure – and therefore the semantic interpretation imposed by them, normally expressed by an exponent /blah/, we will not see /blah/ in the presence of /bluh/, which is the new exponent used to express the structure that includes the features of /blah/.

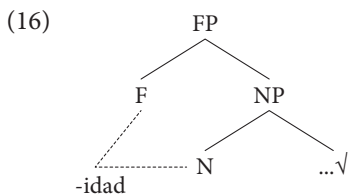
In contrast, an account where Fusion is necessary to allow the spell out of features distributed among different heads makes a different prediction. Given that Fusion is not recursive,² the addition of another head implies an increase in the morphological complexity of the word. For this reason haplology in DM cannot be treated syntactically, but as the result of a general principle that avoids adjacent objects that are too similar (Nevins 2012).

The fact is, I believe, that there is haplology in natural language and that it should be amenable to a syntactic analysis, which Phrasal Spell Out straightforwardly makes available along the lines presented above. Consider one case from Spanish nominalisations:

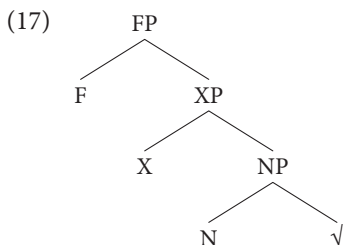
2. Fusion cannot be recursive in standard DM for the following reason: it is an operation that takes two syntactic sisters (X^0) depending from the same category node and maps them into a single position of morphological exponence (M^0) (cf. Halle & Marantz 1993; Noyer 1997). When two heads have been fused together, we obtain one M^0 , not another X^0 , so an iteration of the operation will combine objects of different modules, X and M.

- (15) a. public-*idad*
 public-*ity*,
 ‘advertising’
 b. public-*ista*
 public-*ist*,
 ‘advertising agent’

This is a standard haplology case. The suffix *-idad* never forms a sequence with the suffix *-ista*, but the semantic interpretation of *-idad* is contained in (15b), as reflected by the gloss ‘advertising’, which is the meaning of *publicidad*. As I explained in detail in Fábregas (2014), this haplology is automatically predicted in a system with Phrasal Spell Out. The entry of *-idad* is the one in (16), where it expresses two heads: a pure nominaliser N and an additional head F.

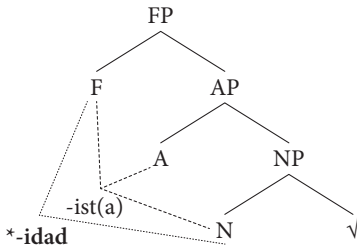


When a agentive noun is built, the analysis proposes that this involves adding an additional head X that intervenes between F and N, adding the semantic entailments of agency to the denotation of the noun.



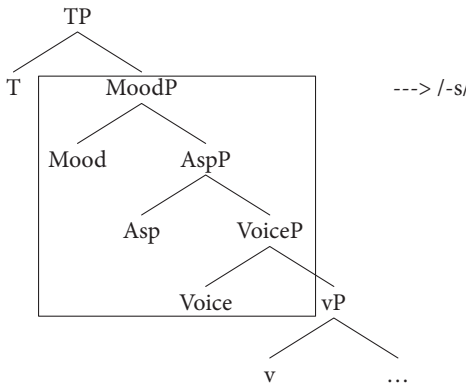
In a system with fusion, X should prevent F and N to merge into one position of exponence, so we would expect an increase in the number of affixes, against what we actually attest. However, in a system with Phrasal Spell Out, the surface fact that *-idad* and *-ista* do not combine together follows because the material spelled out by *-ista* contains the features that *-idad* spells out, which are F and N. Haplology immediately follows, as *-idad* cannot be used in this context because the features that it materialises do not form a single syntactic constituent.

(18)



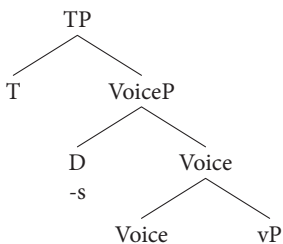
Another direct empirical prediction made by Phrasal Spell Out is that syntactic movement will be able to modify the choice of exponents. The reason is that movement creates and destroys phrasal constituents. If exponents correspond to syntactic constituents, movement will be able to determine whether an exponent can be used or cannot be used. In a book about Scandinavian passive structures, Fábregas & Putnam (2020), we argue among other things that the Norwegian middle voice with the exponent *-s* corresponds to a configuration where above VoiceP a particular value for aspect and mood are projected. In (19), the verbal stem exponent spelled out vP, and this exponent takes care of the remaining material, now a constituent after spell out of the complement.

(19)



In contrast, the same exponent in Swedish corresponds to a pronoun with a syntactic label D, merged as the external argument in VoiceP.

(20)



This minimal difference between spelling out a phrase vs. spelling out a terminal node accounts for a range of differences between Swedish and Norwegian verbal structures with the exponent *-s*. First of all, this difference explains that the *s*-exponent can be used in Norwegian to express middle statements, because it contains a modal head, while in Swedish it is impossible. (21) below means ‘it is easy to remove from the skin’ as an expectation based on its design, without any presupposition that the event has actually taken place. In contrast, (22) must necessarily mean that in some actual occasions that type of bandage has been tested and it has been observed that it is indeed easy to remove from the skin.

- (21) Denne bandasjen fjerne-s lett fra huden. Nor.
 this bandage-the removes-S easily from skin-the
 ‘This bandage is easy to remove from the skin’
- (22) #Detta förband avlägsnas lätt från hud-en. Swe.
 this bandage removes-S easy from skin-the
 ‘This bandage is habitually removed easily from the skin’

Second, the presence of the *s*-exponent in Norwegian freezes the temporal inflection of the verb (23). This follows if the exponent materialises already a value for mood and aspect. Moreover, if movement creates and breaks constituents, it follows that the verbal stem will not be able to move to Voice, Aspect or Mood – that would create a constituent that cannot be spelled out by the exponent *-s* – and therefore there will be no way for the stem to take the morphemes for tense.

- (23) a. må gjør-e-s
 must make-INF-s
 ‘must be made’
- b. gjør-es
 make.PRES-S
- c. *gjor-de-s
 make-PAST-S
- d. *har gjør-t-(e)s
 has make-PART-S

In Swedish the exponent does not spell out a phrase, so movement of the verb stem is not blocked; consequently, the inflectional properties of the verb are unaffected by the presence of the exponent.

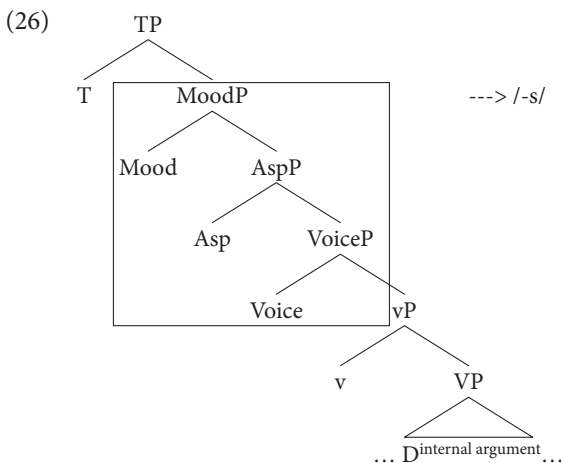
- (24) göra ‘make’
- a. gör-a-s
 make-INF-S
 ‘to be made’

- b. gör-s
make.PRES-S
'is made'
- c. gjor-de-s
make-PAST-S
'was made'
- d. har gjor-t-s
has make-PART-S
'has been made'

Another important property is that the Swedish exponent – analysed as a pronoun in Fábregas & Putnam (2020) – can also appear in the so-called ‘absolute construction’, where it represents a non-specific internal argument. (25) in Swedish equals English ‘The cat scratches’, with a null non-specific internal argument.

- (25) Katt-en riv-s.
cat-the scratch-S
'The cat scratches'

This is possible because the Swedish exponent corresponds to a single pronoun that can be the external argument (as in 20) or the internal argument (as in 25). In Norwegian this use does not exist, because the exponent spells out Voice, Aspect and Mood; the internal argument cannot move to a position between these heads because that would break the constituent, and the exponent cannot spell out the pronoun in the object position with the inflection, because the verbal stem would be part of the constituent.



Thus, I believe that there are empirical advantages in treating *spell out* as an operation able to take phrasal constituents as input, beyond the technical advantage of making fusion unnecessary. That said, admittedly, in many empirical cases the effects of phrasal *spell out* could be amenable to a fusion analysis, and to some extent the DM assumptions are compatible with much of what will be discussed in this monograph.

2.2 The Exhaustive Lexicalisation Principle

This predominance of syntax in the absence of morphologically-specific operations manifests also in the Exhaustive Lexicalisation Principle (Fábregas 2007a), which states that *spell-out* must identify each feature contained in the syntactic tree. That is: if the syntactic tree is as represented in (12), the exponent(s) used to *spell it out* must identify X, Y, Z, A, B and C. Erasing any of these features prior to insertion – thus ignoring it for the choice of exponents, as it is the case when DM uses impoverishment or underspecified exponents – is not an option in this system.

I believe that this should be the default option in a system where *spell out* follows the syntactic representation: we expect the set of exponents to be conditioned by the existing features in the language, and not vice versa. For this reason, Nanosyntax, in the attempt to remove all purely morphological operations, also presents the hypothesis that lexical exponents must reflect all the information contained in the syntax.

Impoverishment might be characterised as an operation that removes information that had been computed in the syntax: if Impoverishment is possible, there are bits of information contained in the computational system that are ignored by the lexicon. In contrast to this arguably negative consequence, the Exhaustive Lexicalization Principle explicitly states that lexical insertion at PF must interpret all bits defined in the computational system and cannot ignore any part of it. Given the Exhaustive Lexicalization Principle, one source of ungrammaticality for a representation would be the situation in which the syntactic representation cannot be fully lexicalized by the items available in a language. Fábregas (2007a) argues that this is precisely what is behind the ungrammaticality of the directional interpretation of (27) in Spanish:

- (27) *Juan bailó a la esquina.
 Juan danced A the corner
 Intended: ‘Juan danced to the corner’

The analysis is that the Spanish exponent *a*, although usually translated as ‘to’, does not contain in its lexical entry a Path Phrase, necessary in the syntax to obtain the directional reading. In other words, Spanish *a* is a place preposition denoting

contact (vs. *en*, which denotes inclusion). The exponent only lexicalises a PlaceP constituent. The syntactic structure underlying (27) corresponds to (28a). The exponent *a* cannot lexicalize PathP, and as this feature is left without a lexical representation, the sentence is ungrammatical (28b).

- (28) a. $[_{VP} V^0 [_{PathP} Path^0 [_{LocP} Loc_0 [DP]]]]$
 b. baila- a la esquina
 dance A the corner

In order for a directional to be possible with a verb like *dance*, Spanish has to use a different exponent whose lexical entry also lexicalizes PathP. Such prepositions are *hasta* ‘to’ or *hacia* ‘towards’, which syncretically express Path and Loc.

- (29) a. $[_{VP} V^0 [_{PathP} Path^0+Loc^0 [_{LocP} Loc^{\theta} [DP]]]]$
 b. baila- hasta la esquina
 dance to the corner

English *to*, then, has a lexical entry closer to Spanish *hasta* than to Spanish *a*, in the sense that it can lexicalise both Path and Place.

A general consequence of this approach is that a configuration can be equally well-formed in two different languages from the perspective of syntax, but they might not be equally ‘lexicalizable’ because one of the two languages lacks the exponents compatible with that configuration. If one of the languages lacks an exponent to spell out the set of syntactic features in that particular configuration, the construction will not meet the Exhaustive Lexicalization Principle in that language and, therefore, the result will be ungrammatical. The adoption of this principle, thus, opens the door to a very specific treatment of language variation based on lexical differences of the idiosyncratic exponents available in different languages, which is developed for the case of Mainland Scandinavian in Fábregas and Putnam (2020).

2.3 The Superset Principle

The adoption of the Exhaustive Lexicalisation Principle has immediate consequences for situations where the repertoire of exponents lacks an item that corresponds perfectly for the tree generated by syntax. Imagine that the output of syntax is $[X, Y, Z]$, and the set of exponents in the particular language is the one in (30), where there is no item that matches all and only those features.

- (30) a. blih <---> $[W, X, Y, Z]$
 b. bleh <---> $[Y, Z]$
 c. bloh <---> $[Z]$

DM resorts to feature impoverishment or to underspecified exponents, applying the Subset Principle (Halle 1997), which states that the exponent introduced in a syntactic constituent can contain only a proper subset of the syntactic features of that head. Thus, given DM principles if one wants to spell out the set of features [X, Y, Z] with the exponents in (30), (30b) would be chosen because it is the one containing the closest subset of features represented in syntax.

However, the Subset Principle implies that some morphosyntactic features are ignored during lexical insertion (specifically in our case, [X]); Nanosyntax cannot follow this principle, given the Exhaustive Lexicalisation Principle. Mismatches such as the one produced by (30) are resolved by the Superset Principle (Caha 2009). Following the Superset, in a mismatch situation, an exponent that has all the features contained in the syntactic object is used, even if this means that the lexical entry is associated to additional features. Thus, in (30), (30a) would be the only choice, because it is the only exponent that identifies X, Y and Z, even though (27a) also contains in its entry an additional feature [W] that is not present in that syntactic constituent.

In other words: in Nanosyntax, an exponent associated to a tree structure can spell out that tree, or any subconstituent of that tree.

Intuitively, the idea is that whenever there is no perfect match between syntactic representations and exponents, lexical items that have extra features will be inserted – or in other words, that morphological syncretisms will choose the exponent that has more features and is therefore more specified, not the more underspecified one. This again is in sharp contrast with the assumptions of DM, where the absence of a perfect lexical match for a syntactic representation are solved by using a form specified for a subset of the syntactic features, possibly preceded by impoverishment of the syntactic terminal (the Subset Principle). Thus, in DM the form (30a) would be used, and it would be either underspecified for Y or Y would have been erased from the syntactic terminal previous to lexical insertion.

Caha's (2009) study on morphological syncretism – where lack of a specific lexical form to spell out a cell in a paradigm is solved by letting another form in the paradigm spell it out – provides evidence in favour of the Superset prediction that the exponent used will be the more specified one. Caha's (2009) argument is two-fold: first, he shows that the syntactic representation of instrumental case contains more features than accusative case. This can be shown in the morphological make-up of these two forms in a paradigm without syncretism: instrumental is obtained by adding extra morphemes to dative, and dative is obtained by adding extra exponents to accusative. If exponents reflect syntactic features, this shows that instrumental is obtained adding a set of features to those that correspond to accusative. (31) shows this for Czech (Caha 2009: 246, Example 24):

- (31) Paradigm of *dobrý* ‘good’
- a. Accusative: *dobrý*
 - b. Dative: *dobrý -m*
 - c. Instrumental: *dobrý -m -i*

Once we have empirical support for the idea that instrumental case is represented syntactically by adding additional features to cases like dative, we can pose the question of whether whenever a specific exponent for dative is not available the form that has a subset of features (accusative) or that which has a superset of features (instrumental) is used. The syncretism data in (32) show that the form selected to spell out dative is instrumental (materialized as /m/ and a vowel).

- (32) Paradigm of *dva* ‘two, masculine’ (Caha 2009: 266)

Syntactic representation	Exponent used
Accusative [X]	<i>dva</i>
Dative [X, Y]	<i>dvě-m-a</i>
Instrumental [X, Y, Z]	<i>dvě-m-a</i>

The Superset Principle used in DM would have predicted that the morphosyntactic features for dative would have been impoverished, erasing the feature [Y], with the consequence that accusative, matching [X], would have been used. However, it is the instrumental form, shown in (32) that involves more features than dative and therefore is more lexically specified, and is the form used to resolve the syncretism.

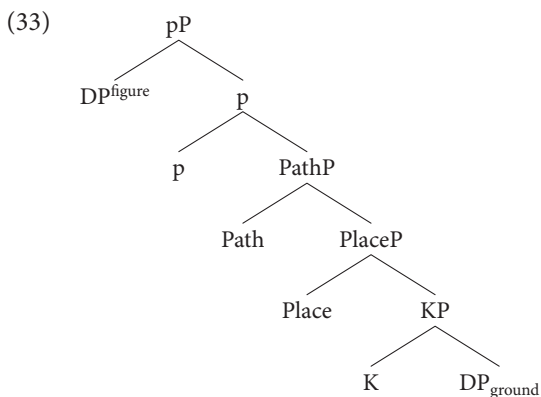
This is the general framework that we will use to technically implement our analysis. That said, however, we have made a particular effort to formulate the intuitions and proposals that we will argue for in the following chapters in such a way that it can be translated to other theoretical choices: Nanosyntax, and more widely Neo-Constructionist approaches, is just the language that we have chosen to formalise those proposals. As far as we understand it, and if we have been successful in our attempt, these intuitions should be translatable to any theory where words are built with segmentable units – call them morphemes or syntactic heads – and which takes seriously the correlations between semantics, grammatical behaviour and formal marking.

3. Assumptions about prepositional structures and the projections they introduce

Given that our core proposal is that adjectives are built using pieces of prepositional structure, some background is needed where we make explicit our assumptions about the components of prepositional structure.

3.1 Prepositional structures

Our starting point is Svenonius (2010) – see also Koopman (2000), Den Dikken (2010) and Romeu (2014), who proposes the following basic structure for prepositions.



The structure can be further expanded, and Svenonius (2010) argues that some languages provide evidence that Degree Phrase, Deictic Phrase or Axial Parts – categories that share properties with both nouns and prepositions, but the basic structure can be viewed as follows, divided in three parts.

- a. A case projection (KP)
- b. A lexical area (PlaceP and PathP)
- c. A functional area (pP)

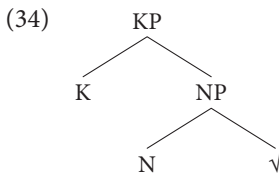
The lowest projection in the structure is K(ase)P. Its role is to transform its nominal complement, which denotes an individual, into an argument that acts as one of two members in the relation specified by the prepositional structure. Given that prepositional structures express relations between a figure and a ground (Talmy 1985; Hale 1986), the presence of KP turns the DP into a relation between the DP and a second element such as that the complement DP is the ground of that relation.

However, while KP defines a relation, it does not assign conceptual content to that relation. The conceptual content of the relation is expressed by PP. While KP introduces the relation where the DP is a ground, PP is necessary to determine what kind of relation is discussed. If the preposition expresses a location, as in the class that is studied in Koopman (2000), Den Dikken (2010) and Svenonius (2010), the relation R is interpreted as locative – the conceptual content of the particular P used will be determined if it is a location of inclusion, adjacency, etc. – and therefore the KP will be interpreted as mapping the individual denoted by the DP into a region (Wunderlich 1991). Many other types of relations R can be imagined, depending on the conceptual and formal content of the PP area: for instance time, cause or instrument (Roy & Svenonius 2009).

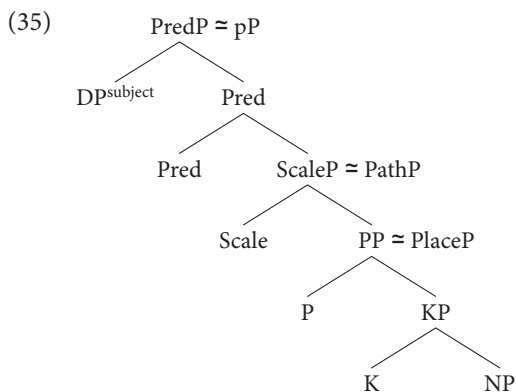
Within this lexical layer, at least two heads can be differentiated: Place introduces locative static relations between elements, as in the case of English *in* or *at*. In contrast, Path introduces trajectories which take the place defined in the lower layer as a reference point – starting point in *from*, ending point in *to* (Zwarts 2005).

The highest layer is functional, a pP structure whose role is to introduce the ‘subject’ of the relation introduced by KP and specified by PP. This subject receives a general semantic interpretation as the figure of the relation, and lacks any conceptual content.

Our claim will be that this same structure is the one used in ‘adjective’ formation, with the minimal difference that in those cases the base is functionally impoverished, a projection of NP (or VP) rather than DP. Specifically for the case of Spanish we will argue that relational adjectives are defective prepositional structures that only include KP. K is the head that denotes an underspecified relation between kinds or individuals (34).



As for qualifying adjectives, the three regions are fully projected. We will argue that the adjectivaliser corresponds to P(roperly)P, specifically to the equivalent of PlaceP that specifies the relation R. The equivalent of PathP within the PP region, we will suggest, is the scalar structure of the adjective, which we will argue is syntactically projected in Spanish: instead of defining a spatial path, the series of ordered points denoted by the path is interpreted as a series of ordered values composing a scale. Finally, the equivalent of pP in an adjective would be the Pred(ication)P that introduces the subject of predication.



3.2 Assumptions about case

This book is not about case, which is anyways too complex a topic to expect that it would be fully addressed – let alone solved – in one monograph. However, as we use KP in our analysis of both prepositional structures and adjectives, we must make our assumptions explicit at least with respect to the distribution and function of case.

In the literature at least two types of case are distinguished (Chomsky 1981, 1986):

- a. structural case, typically nominative and accusative
- b. inherent case, typically the one associated to lexical prepositions – eg., locative.

The view adopted in this monograph (see also Cabré & Fábregas 2019) is that arguments marked with inherent case are in actuality projections of KP. For inherent case, then, we follow the view of case as a projection required to relate an argument with its predicate, as in Fillmore (1968), or Neeleman and Weerman (1999), where arguments are headed by a projection that introduces their case, rather than having a functional head assign it to them.

- (36) Arguments marked with inherent case are introduced by KP
 [KP K [DP]]

Thus, K has a semantic denotation – specifically, as we will see, it turns an individual into a relation. In contrast, we assume that arguments with so-called structural cases are DP arguments that are not embedded under KPs, and which must enter into a standard feature-checking relation with a functional head – T, v, etc. – (Chomsky & Lasnik 1977). In actuality, this mixed approach implies that what is called ‘case’ in the literature is the result of at least two different processes and is therefore not

syntactically homogeneous: feature checking for structural case, and introduction by KP for inherent case.

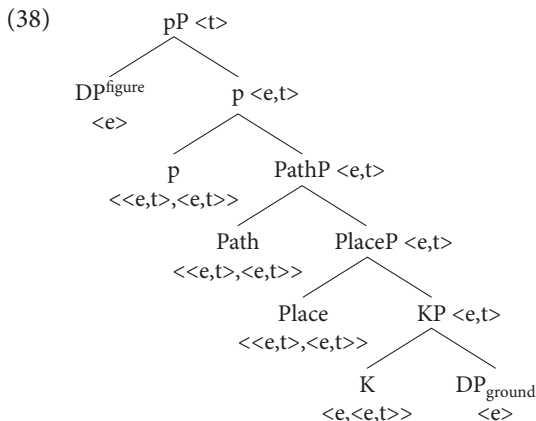
The reasons for this division that deconstructs case into two distinct phenomena are ultimately empirical. The properties of arguments marked with inherent case are mainly (i) that the case received is independent of the wider syntactic context where they appear and (ii) that the case is generally associated to a specific (theta-related) semantic interpretation, such as ‘locative’. (37) compares a dative-marked argument in Spanish with an accusative argument, to illustrate the first property. As can be seen, dative is preserved in a nominalisation context (37b), while accusative is lost in that context (37d).

- (37) a. entregar el libro [a María]^{Dat}
 deliver the book to María
 b. la entrega del libro [a María]^{Dat}
 the delivery of.the book to María
 c. escribir [una novela]^{Acc}
 write a novel
 d. la escritura [de una novela]^{Gen}
 the writing of a novel

Similarly, accusative case does not have any associated theta role: the novel is a patient in (37c), while in *recorrer el parque* ‘to go through the park’, the accusative argument is a location. The same goes for nominative. In contrast, locative case is so-called because of the theta-role it expresses, and datives tend to be interpreted as recipients, purposes, goals and other entities which an eventuality is oriented to (Næss 2009; see López 2018 for the asymmetries with dative experiencers). Notice, additionally, that inherently marked arguments in Spanish are systematically marked by prepositions.

Both properties are explained together if inherently marked arguments carry KPs: the KP layer provides them with case, so case marking is independent of the context where the argument appears. If a lexical PP structure is also present syntactically, the relation is specified by it and therefore the case comes with a specific thematic interpretation. We interpret these facts as meaning that inherent case should be treated along the lines of Fillmore (1968), not as a formal property that must be checked by a functional head, but as the result of introducing the DP with a semantically-active projection that relates it to the predicate. In contrast, structural case should be treated in the more standard way of Chomsky and Lasnik (1977), as the result of an agreement relation between the DP and a functional projection. For this reason, structural case is sensitive to the wider context where the argument is introduced, and – because agreement is semantically vacuous – there is no correlation between one particular case value and a specific semantic interpretation.

In our proposal, then, KP is restricted to adpositional structures – prepositions and postpositions. The reason is that KP expresses a relation – in fact, it maps an individual into a relation, and adpositions have as their role to introduce relations, which are agreed to be introduced by prepositions (cf. for instance Hale & Keyser 1993, where prepositions are the general relators between categories; see also Klein 1994; Demirdache & Uribe-Etxebarria 2000). (38) presents the semantic type that we assume for prepositional structures, with the semantic function expressed by each head.



I am treating KP as a head that maps the individual denoted by DP into a relation, which at that point has no conceptual properties. Place, Path and the other heads that can name that relation have the semantic shape of modifiers that add additional entailments to the relation named by K. The functional layer pP adds to the structure the subject argument, the second individual of the relation. Remember, to be completely clear, that structural case does not involve K, and for this reason the DP that receives it stays as type <e>.

I propose to transfer these denotations to the adjectival domain, with all adjectives expressing relations by virtue of the presence of K. The heads that introduce the conceptual properties denoted by the adjective in qualifying adjectives are treated as functions of type <<e,t>, <e,t>>. PredP is treated as the equivalent of pP, the head that introduces the second argument of the relation and produces a predication of type <t>.

Let us now talk about the general denotations. I am treating K as a head with the denotation in (40).

$$(40) \quad [[K]] = \lambda y \lambda x \lambda R [R(x, y)]$$

When combined with the DP, the DP – lets give it ‘j’ as a value – satisfies its x argument.

$$(41) \quad [[KP]] = \lambda y \lambda R [R(j, y)]$$

Place and Path are modifiers of the R relation. Their semantics is simply to restrict R to only those relations that satisfy a particular description.

$$(42) \quad [[Place]] = \lambda R [Place(R)]$$

This produces (43), which we will abbreviate to (44):

$$(43) \quad [[PlaceP]] = \lambda y \lambda R [R(j, y) \ \& \ PLACE(R)]$$

$$(44) \quad \lambda y \lambda R [PLACE\text{-}R(j, y)]$$

(45) is the denotation of little p. This head introduces the subject of the predicate.

$$(45) \quad [[p]] = \lambda y \lambda P [P(y)]$$

This produces (46) when combined with the rest of the structure and after introduction of the second DP – lets assign it the value ‘k’; we assume that R is existentially bound.

$$(46) \quad [[pP]] = \exists R [R(j, k) \ \& \ PLACE(R)]$$

4. The chapters

Let us finish this introduction by providing a roadmap for the book. While the chapters are divided by the different adjective classes treated, the structure of each chapter makes an effort to reflect the two goals of the monograph, distinguishing the empirical description from the theoretical claim made in each chapter. Each chapter begins with a short overview of the main claim of the analysis, and is followed by a detailed empirical description where we differentiate between properties dependent on the conceptual semantics of the roots used and properties dependent on the syntactic configuration; then, the full-fledged analysis is presented. Some chapters contain an appendix of other relevant facts.

Chapter 2 develops the claim that adjectives are not a primitive class and for this reason languages that have them use pieces belonging to other categories in order to build them. We will review there the problem from both a theoretical and empirical perspective: unlike nouns and verbs, adjectives cannot be identified as a natural class in terms of their positive properties. We will further offer some preliminary evidence that Spanish and English build their adjectives using prepositional structures; moreover, that while Spanish qualifying adjectives are projections of PathP, English uses PlaceP.

Chapters 3, 4 and 5 concentrate on denominal adjectives. Chapter 3 is dedicated to relational adjectives. Empirically, it provides an overview of their behaviour,

and analytically it argues that the properties are accounted for if they are viewed as projections of KP. It further discusses the difference between relational adjectives and qualifying adjectives, adding additional evidence that qualifying adjectives contain not only KP, but also PP.

Chapters 4 and 5 analyse qualifying denominal adjectives. Chapter 4 treats possessive and similitudinal adjectives, and Chapter 5 is dedicated to causative and dispositionals. Beyond this Chapter 5 discusses the question of why there are only 4 classes of qualifying denominal adjectives.

KP	Relational adjectives (Chapter 3)
PP+KP	Qualifying adjectives: possessive and similitudinal (Chapter 4); causative and dispositional (Chapter 5)

Chapters 6 to 9 discuss deverbal adjectives. Chapter 6 introduces this second group of adjectives, argues for a distinction between relational and qualifying adjectives – divided into modal, dispositional and habitual – in this domain as well, and discusses how non-episodicity is obtained without postulating operators within the lexical entry of the deverbal adjectivalisers. Here we argue that essentially the same pieces that are used for denominal adjectives can also be used for deverbal adjectives.

Chapter 7 concentrates on modal adjectives, particularly in *-ble*. It argues that their properties can be derived, and are in fact better accounted for, in an analysis where the relevant structures lack Aspectual and Modal projections, and it shows that dispositional readings are also possible with this suffix. Chapter 8 is dedicated to dispositional and habitual readings, and discusses in particular the affixes *-dizo* and *-ón*. Finally, Chapter 9 shows how adjectival participles, which have episodic readings, fit within the system; it discusses the episodic readings of two other affixes, *-nte* and *-dor*, which we argue are possible due to the historical connection they have with adjectival participles and gerunds. The following table summarises the classes of deverbal adjectives that will be discussed.

	Non-episodic (without AspP in the base)	Episodic (with AspP in the base)
KP	Pseudo-relational adjectives (Chapter 6)	Some pseudo-relational adjectives in <i>-nte</i> and <i>-dor</i> (Chapter 9)
PP+KP	Qualifying adjectives: modal, dispositional, habitual (Chapters 7 and 8)	Participles in <i>-do</i> (Chapter 9)

The final chapter of this book evaluates the main conclusions of the book beyond the study of adjectivalisations, and highlights the morphological residue that is left for further research.

The problem with (complex) adjectives

This chapter presents the theoretical background that frames adjectives among word classes, and which justifies the attention devoted to adjectival derivations. The main claim here is that it is impossible to provide a definition of adjective, as a lexical category, through a set of essential positive properties. Rather, a distributional definition has to be used. Moreover, we will argue that languages do not define adjectives through a category-specific configuration. Universal Grammar does not provide with specific adjectival primitives. If a language wants to build modifiers of nouns, then, the language will have to recycle heads that Universal Grammar provides for other categories: specifically, Spanish uses prepositional structures to define the configurations that traditional grammars have labelled as adjectives.

The structure of the chapter is as follows: §1 discusses the different ways of defining lexical categories, establishing a division between essentialist theories and distributionalist theories. §2 presents the main classes of units that have been called ‘adjectives’ in Spanish, and discusses some of the reasons why they form a heterogeneous class in terms of their morphology and semantics. §3 argues that an essentialist definition of ‘adjective’ fails even if the class is defined just for a single language, Spanish. §4 explores the consequences that the absence of a non-arbitrary essentialist definition of ‘adjective’ has for the analysis of derived adjectives, and argues that a distributionalist definition is a better starting point; specifically, we will argue that Hale and Keyser (1993, 2002) and Mateu (2002) are right – at least for Spanish – in that adjectives are derived categories involving abstract prepositions. §5 provides some initial arguments in favour of the proposal through a comparison between English and Spanish adjectives in three domains.

1. Lexical categories: Essentialist and distributionalist theories

Virtually all linguistic theories agree that any grammatical system consists of a set of units and a set of operations that derive more complex objects from those units. Morphology is concerned with both, to the extent that a complete morphological characterisation of a language involves, at least, (i) identifying the relevant units;

(ii) classifying those units into classes differentiated by their grammatical behaviour; (iii) determining the operations that apply to those units and (iv) identifying the restrictions that apply to those operations, relative to the different classes of units.

When we talk about adjectives, we talk about one possible class within the units of a language. Calling something an adjective, or even positing an adjectival class, is in itself a questionable theoretical decision. Traditional approaches to grammar, in fact, haven't always identified an adjectival class for the better known European languages. The Modistae, for instance, grouped nouns and adjectives within the same class, as *nomina*. Within the generative linguistic tradition, starting with Chomsky (1957), it was common to simply accept that the traditional notion of adjective corresponded to a type of category, at the same level as nouns and verbs: A(djective), N(oun) and V(erb).

Initially, A, N and V were considered 'lexical', belonging to major classes that impose selectional restrictions to arguments and come endowed with context-free properties such as [+count]. This opposed them to 'grammatical' or 'functional' units, such as determiners or auxiliaries, which at the time were assumed to come endowed with very few or none context-free properties, and to have no impact in the selection of arguments.

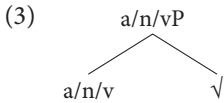
Soon, the picture changed in two ways. The first one was to stop treating lexical labels as primitive objects, in order to find a principled – and in the best-case scenario, language independent – definition of the primitive units of language. An influential proposal was Chomsky (1970[1967]), who proposed two basic category features, [N] and [V], representing the basic universal categories, which could define the three lexical labels in (1):

- (1) a. A = [+N, +V]
 b. N = [+N, -V]
 c. V = [-N, +V]

Jackendoff (1977) extended this approach to include adpositions, characterised as the remaining feature combination [-N, -V]. This proposal is largely rejected now, but it is fair to say that its main merit was to put the deconstruction of lexical categories in the centre of the discussion, providing an initial framework to discuss the relations and differences among nouns, adjectives, verbs and prepositions.

The second way in which the picture changed was that the categories in (1) were reanalysed as functional, mainly in work within the Distributed Morphology framework (Halle & Marantz 1993; Harley 1995; Marantz 1997). Within this framework, the heads in (1) are replaced with those in (2), which are taken to be functional heads that dominate roots lacking grammatical category (3):

- (2) a. a
 b. n
 c. v



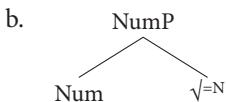
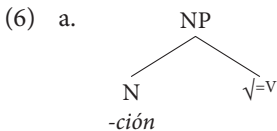
Here, then, ‘being an adjective’ is not a property of a unit, but of a complex structure that minimally contains a root and a categorising functional head. It is still possible to talk of ‘word classes’, to the extent that the categorising heads belong to distinct classes, and these classes are defined by their distinct properties.

However, Borer (2013) argues that word classes cannot be considered just functional heads, and insists that there should be a lexical notion of noun, verb and adjective that can, among other things, re-categorise a complex object that is already defined as a particular grammatical category. For Borer, then, there are two sets of heads able to categorise roots, lexical heads (4) and functional heads (5).

- (4) a. A
 b. N
 c. V

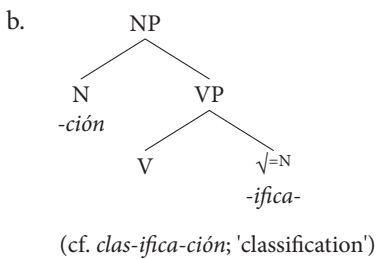
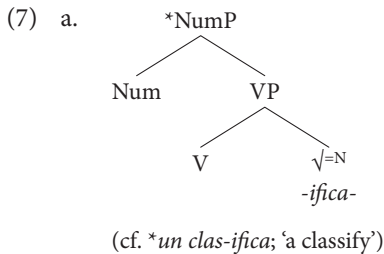
(5) Degree, Number, Tense, Classifier...

Both types of heads can be used to define, contextually, the category of a root that lacks any category specification; a lexical head such as *-ción* ‘ation’ in Spanish will contextually define the root it attaches to as a verb, and project its label to the whole structure (6a). A functional head such as Number will define the root as a noun, again contextually, and project its label to the whole (6b).



The difference between the set in (4) and the set in (5) emerges when we try to categorise a complex object that already combined with a categorising head. Functional heads do not have the strength to reboot the categorisation and redefine it, because once their complement has been defined as a word class they act as the extended

projections of that class (cf. Grimshaw 1991, 2005 for the notion of extended projection). Lexical heads, in contrast, can re-categorise and introduce a new sequence of extended projections.



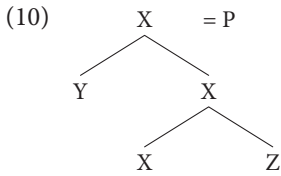
The proposals just presented belong to those that Kornfilt and Whitman (2011) call 'essentialist', in the sense that the nature of the grammatical category is defined independently of the syntactic properties of the context where the category appears: something is a noun because it contains features that define it as a noun, not because of any specific configuration it gives rise to. These theories contrast with the 'distributionalist' ones, where the properties that define some unit as a particular category are syntactic. The clearest example of a distributionalist theory is Hale and Keyser (1993, 2002), who define lexical categories in configurational terms. For them, nouns are units that do not introduce complements or specifiers:

$$(8) \quad X = N$$

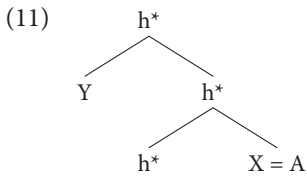
Verbs are categories that always introduce a complement:

$$(9) \quad \begin{array}{c} X = V \\ \swarrow \quad \searrow \\ X \quad \quad Y \end{array}$$

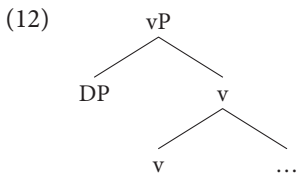
Prepositions are inherently relational categories that take two arguments, one complement and one specifier, and establish a relation between the two of them.



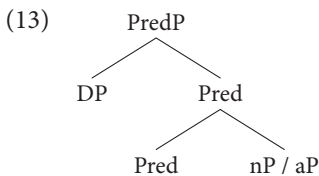
Adjectives are, in a sense, parasitic categories. They need a specifier in order to satisfy their argument structure – they are ‘predicates’ of entities – but they do not introduce complements. Because of Bare Phrase Structure (1995), where specifiers reduce to the second complement of a head, they cannot introduce the specifier directly, and therefore need to combine with another head – a verb or a preposition – to be linked to a specifier.



Baker (2003) is an influential proposal that combines properties of essentialist and distributionalist theories of categories. For Baker, verbs and nouns have some essential properties that define their semantic and syntactic behaviour, but those properties force them to be introduced in specific syntactic frames. Verbs, for Baker (2003: 23) are lexical predicates, lexical heads that always introduce a specifier, interpreted semantically as their subject.



Nouns and adjectives, essentially, lack the capacity to introduce subjects inside their lexical layers; they can combine with subjects only if these are introduced by a functional layer, Predication Phrase (Bowers 1993, 2001):



Nouns are defined by a semantic property whose main consequence is that nouns are the only lexical category that can combine with functional heads establishing reference: nouns have criteria of identity that make them fit to serve as standards of reference (2003: 95–109). The criteria of identity is formalised as a referential index (see Truswell 2004 for an explicit syntactisation of this index).

- (14) a. No letters arrived today.
 b. No wine is served during Lent.
 c. *No rude is tolerated here.
 d. *No pay(ing) parking fees is pleasant. [Baker 2003: 97]

Adjectives are defined through a negative characterisation: they cannot introduce subjects lexically and they lack a referential index; as was the case with Hale & Keyser, adjectives are ‘defective’ categories.

It is possible to establish a taxonomy of essentialist properties about grammatical categories. Some theories base the taxonomy on ‘conceptual’ semantics, establishing prototypical members of the class of nouns, verbs and adjectives that are used to express distinct types of objects of the real world. Traditional classifications of words into classes tend to fall here (see Bosque 1989 for an overview): verbs are *rhema*, used to express actions, states and processes; nouns define things and individuals, and adjectives define properties of those things and individuals. It is easy to find counterexamples to these claims, which in any case are generally stated in traditional terms acknowledging that they apply only to prototypical versions of the word class; for the sake of explicitness, (15) provides an example of a verb that expresses a relation between two entities, a noun that expresses an event and an adjective that does not express any property of an individual.

- (15) a. Juan tiene ojos azules.
 Juan has eyes blue
 ‘Juan has blue eyes’
 b. una guerra
 a war
 c. presunto
 alleged

Other theories use a semantic classification that is based on the specific profiling that each category imposes to the conceptual content associated to it (Langacker 2000). There are also essentialist theories that associate each word class with a particular function, such as Croft (2001) – thus, reference is the prototypical function of nouns, predication the prototypical function of verbs and modification the prototypical function of adjectives.

Another common essentialist criterion is morphology, in a tradition that goes back to the Greek grammarian Dionysius Thrax: each category is defined by the

morphological inflection that it can undergo. This implies giving up the goal of defining a general cross-linguistic characterisation of word classes, because – for starters – there are languages that use no inflection at all (so-called Isolating Languages, such as Vietnamese). The criterion, however, has been applied to individual languages, for instance Spanish. All descriptive grammars of Spanish devote at least some paragraphs to the morphological cues to identify the lexical category of a word (cf., for instance, Alcina & Blecua 1975; Alarcos 1994; Bosque & Demonte 1999; RAE & ASALE 2009). Nouns inflect in number, and some of them also in gender:

- (16) a. gato (M.SG)
cat
b. gata (F.SG)
cat
c. gatos (M.PL)
cats
d. gatas (F.PL)
cats

Adjectives inflect also in gender and number, and many of them also allow degree inflection, for instance in the superlative.

- (17) a. alto (M.SG)
tall
b. alta (F.SG)
tall
c. altos (M.PL)
tall
d. altas (F.PL)
tall
e. altísimo (M.SG)
tall.SPL
'very tall'

Verbs inflect in person and number, not gender, and in tense, aspect and mood.

- (18) a. canto (1SG, present, indicative)
sing.1SG
'I sing'
b. cantasteis (2PL, past, perfective, indicative)
sang.2PL
'you sang'
c. cantáramos (1PL, past, imperfective, subjunctive)
sang.SBJ.1PL
'that we sang'

There are, within these main approaches to the definition of categories, many distinct proposals, but what is relevant for us here is to remind the reader of what the criteria used are, because we will see that, when applied to adjectives, they systematically fail and, in their most successful version, they involve characterising adjectives through negative properties. This leaves us without an essentialist characterisation of adjectives.

2. The heterogeneity of the adjectival class

One first sign of the difficulty of identifying adjectives through their properties comes from how the Spanish grammatical tradition divides adjectives into classes. Traditional grammars of Spanish (cf. for instance RAE & ASALE 2005: 757) used to embrace a morphological definition of adjective as the category that agrees with nouns in gender and number, something which forced them to posit a division of adjectives into two big groups:

- a. *Adjetivos determinativos* ('determinative adjectives')
- b. *Adjetivos calificativos* ('qualifying adjectives')

So-called *adjetivos determinativos* correspond to what more modern grammars (Eguren & Fernández Soriano 2006, for instance) consider articles, demonstratives, quantifiers and possessives (19), while the *adjetivos calificativos* refer, roughly, to any word that does not belong to the previous group and agrees in gender and number with the noun, including the very heterogeneous group in (20).

(19) este 'this', aquel 'that', su 'her', cada 'each', dos 'two'...

(20) biológico 'biological', presunto 'alleged', falso 'fake', elegante 'elegant', gordo 'fat'...

Not all descriptive grammars accept that adjectives divide into these two classes. RAE (1973), treats *adjetivos determinativos* together with pronouns. RAE & ASALE (2009) mentions the traditional distinction, but immediately notes that calling the group in (19) *adjetivos* implies accepting a very loose definition of that class, which in the narrow sense only contains the words in (20). There are some very clear differences between the two groups, one of them being that only the first class licenses preverbal subjects in Spanish:

(21) a. {el / este / un / cada} chico traje un libro.
the / this / a / each boy brought a book

b. *{guapo / presunto / falso / elegante} culpable traje un libro.
handsome / alleged / fake / elegant culprit brought a book

What is of interest for our purposes is that using just a morphological criterion does not provide us with a natural class in terms of its grammatical behaviour. In contrast, in the case of verbs, using a morphological definition gives us a natural class, because every word that can inflect for tense can also combine with subjects.

But even if we restrict ourselves to adjectives in the narrow sense, finding properties that define *adjetivos calificativos* as a natural class would be difficult. A tradition has been established that for Spanish differentiates between three main classes (Demonte 1999; Picallo 2002):

- a. Adjetivos calificativos (in the narrow sense)
- b. Adjetivos relacionales
- c. Adjetivos adverbiales

The three classes are distinguished through semantic, syntactic and distributional facts. Starting from the last of the classes, *adjetivos adverbiales* ‘adverbial adjectives’ consist of two main groups: so-called intensional adjectives (22), which modify the relation between the referent and the set of properties denoted by the noun (Demonte 2008; Partee 2010; Morzycki 2015; McNally 2016; Sánchez-Masià 2017), and event-related adjectives (23), which introduce properties of an entity to the extent that the entity participates in some class of events (Bolinger 1967; Vendler 1967; Larson 1998).

- (22) a. un futuro presidente
a future president
‘someone that is not a president now, but that can be called ‘president’ in the future’
- b. un posible asesino
a possible murderer
‘someone that is possibly a murderer’
- (23) a. una buena médico
a good doctor
‘someone that is good as a doctor’ (she can be bad as a person)
- b. una escritora rápida
a writer fast
‘someone that is fast at writing’ (she can be slow doing other things)

Many of the intensional adjectives are modal (*posible* ‘possible’, *potencial* ‘potential’, *seguro* ‘certain’, *probable* ‘likely’, *presunto* ‘alleged’) or temporal (*futuro* ‘future’, *antiguo* ‘former’, *próximo* ‘next’). Some of the modal and temporal adjectives are either non-subjective or privative (McNally 2016). Non-subjective modifiers are those that do not allow any entailment about whether the properties denoted by the noun and those denoted by the modifier apply to the referent of the whole DP.

The assertion that Carlomagno is a possible murderer (22b) does not entail the proposition that Carlomagno is a murderer (or that he is not), and it does not entail that Carlomagno is possible. Privative modifiers allow the entailment that – at the current time-world pair – the properties of the noun do not apply to the referent. Saying that Adriano is the future president entails that, at the moment of utterance, Adriano is not the president.

There is no one-to-one correlation between intensional adjectives and privative or non-subjective adjectives. A class of adverbial intensional adjectives, studied in detail in Sánchez-Masià (2017), includes the class of adjectives of veracity, such as *verdadero* ‘true’ and *auténtico* ‘authentic’ in prenominal position (24). These adjectives, roughly, state that the referent is a prime example of the class denoted by the noun, and as such they license the entailment that the referent belongs to the class; in fact, they denote that the properties of the noun can be truthfully predicated from the referent.

- (24) Alberto es un auténtico escritor.
 Alberto is an authentic writer
 ‘Alberto is a true writer’

Event-related adverbial adjectives are subjective, within this entailment-based classification. Subjective adjectives license the entailment that the properties denoted by the noun apply to the referent, but restrict their application to the context in which the referent participates in an event. Subjective adjectives, therefore, define subclasses of the class defined by the noun through events that the noun is related to – jobs, occupations, hobbies, activities.... The proposition that Alberto is a good doctor entails that Alberto is a doctor, but not that he is good in general: he can in fact be a horrible person who happens to be very good at a particular job. What ‘good’ does here is to define a particular class of doctors, those that are good at their job. What we see is that adverbial adjectives are a heterogeneous class.

Relational adjectives (Bally 1944; Bosque 1993, 2006; Fábregas 2007b) are even more heterogeneous than adverbial adjectives. Some of them are used to denote participants related to events denoted by or related to the head nouns; in this sense they are not properly predicates or even modifiers.

- (25) la invasión alemana de Italia
 the invasion German of Italy
 ‘the invasion of Italy by Germany’

A second class within relational adjectives – classifying relational adjectives – is used subjectively to define subclasses of the class denoted by the head noun. They, therefore, do not define ‘descriptive’ qualities of the entity, but partition the kind

denoted by the entity into relevant subclasses that are defined by the relation that the noun establishes with the kind denoted by the adjective. For instance, we can define different types of problems depending on whether they relate to biology (26a), economy (26b), politics (26c), health (26d), etc.

- (26) a. problema biológico
 problem biological
 b. problema económico
 problem economic
 c. problema político
 problem political
 d. problema sanitario
 problem sanitary

Classifying relational adjectives are, therefore, subsective. If we say that a particular fact is a sanitary problem, this entails that the fact is a problem, but not that it is sanitary, because *sanitary* applies to the class of problems that is relevant in the sentence (McNally 2016).

Qualifying adjectives, the last class traditionally differentiated, includes the ‘prototypical’ adjectives that most grammars give as an illustration of the whole class. These adjectives contribute properties that describe entities. In contrast to relational adjectives (27a) and most (27b) – but not all (27c) – adverbial adjectives, they tend to allow degree modification (28a) – but, again, not always – (28b).

- (27) a. *un problema muy sanitario
 a problem very sanitary
 b. *un muy presunto culpable
 a very alleged culprit
 c. un escritor muy rápido
 a writer very fast
- (28) a. un escritor muy elegante
 a writer very elegant
 b. #un escritor muy perfecto
 a writer very perfect

Many qualifying adjectives are intersective. Intersective modifiers license the entailment that both the properties denoted by the noun and those denoted by the modifier apply to the referent. If we say that Alberto is an elegant Spaniard, we entail both that Alberto is Spaniard and that Alberto is elegant; Alberto is located at the intersection of the sets defined by all Spaniards and all elegant entities in the relevant context.

However, it is not clear that all qualifying adjectives are intersective. Some qualifying adjectives are ‘relative’: they do not define maximal or minimal standards for the adjective, but relativise the standard to a particular class of objects. These (29) have been considered subjective in part of the semantic tradition.

- (29) una hormiga grande
 an ant big

If an animal is a big ant, the entailment that the animal is an ant is very clear, but the entailment that the animal is big is not licensed. Probably, many ants that can be considered big for ants would still count as quite small animals – if we compare them with dogs, horses and whales – (Chierchia & McConnell-Ginet 2000). However, other authors such as McNally (2016) prefer to treat such adjectives as intersective, with a vagueness component. The general idea is that if these adjectives are treated as introducing the relevant comparison class as an argument (in 29, ‘for an ant’), vagueness is resolved and the modifier acts intersectively: the animal is both an ant and big for an ant.

This last observation takes us to a core issue: are all these adjective classes amenable to a homogeneous analysis where they all belong to the same type of unit or not? This is crucial for the definition of adjectives as a lexical class: if adjectives cannot be defined as a natural class in terms of their linguistic behaviour, then ‘adjective’ cannot be taken to be more than a convenient traditional label to describe some objects, without any inherent meaning.

We have seen that the morphological definition of adjective forces groupings where adjectives and determiners pattern together. What we see now is that, even if we leave *adjetivos determinativos* aside, the three classes of remaining adjectives are heterogeneous from a semantic perspective, even to the point that we cannot clearly equate one of the classes to a particular type of modifier. Subjective modification involves some relational adjectives – others are arguments, some adverbial adjectives – others are intensional, and some of those non-subjective or privative, and perhaps also some qualifying adjectives.

What can be done about this? There are two main solutions in the market. One of them is to accept that the class of adjectives is semantically heterogeneous. Some adjectives can be predicates, while others are plain modifiers; those that forcefully have to act as modifiers tend to be intensional adjectives (30–31).

- (30) a. esa chica elegante
 that girl elegant
 ‘that elegant girl’
 b. Esa chica es elegante.
 that girl is elegant
 ‘That girl is elegant’

- (31) a. ese presunto asesino
 that alleged murderer
 ‘that alleged murderer’
 b. *Ese asesino es presunto.
 that murderer is alleged
 Intended: ‘That person is allegedly a murderer’

Particularly influential is Cinque’s (2010) proposal that treats subsectivity and intensionality as a complementary notion to predicative uses. In this approach, for an adjective to be subsective or intensional, it must be a direct modifier, a plain AP phrase not involving any predicational structure (32):

- (32) [_{FP} [_{AP} presunto] F [_{NP} culpable]]
 alleged culprit

In contrast, the adjectives that are introduced as part of a predicational structure – a reduced relative clause in Cinque (2010) – cannot have subsective or intensional readings (33):

- (33) [_{FP} [_{IP} PRO ... [_{AP} elegante]] F ... [_{NP} culpable]]
 elegant culprit

If we adopt this solution, adjectives will not be a homogeneous class with respect to their semantic type either: some would be modifiers, some would be predicates. The alternative, which has been advocated by authors such as Higginbotham (1985), Bouchard (2002) and McNally and Boleda (2004), has been to try to treat all adjectives as predicates, and even to reanalyse subsectivity as intersectivity. One central empirical observation in this line of research is that some subsective and intensional modifiers can be used as predicates, provided the right type of denotation is expressed by the noun in the subject position. Contrast, in particular, (31b) with (34a).

- (34) a. Su radicalismo es solo presunto.
 his radicalism is only alleged
 b. Este escritor es muy rápido.
 this writer is very fast
 ‘This writer is very fast at writing’
 c. Este problema es sanitario.
 this problem is sanitary
 ‘This problem is health-related’
 d. Su presidencia es futura.
 his presidency is future
 ‘His term as a president is in the future’

This kind of proposal simplifies the taxonomy of adjectives at the cost of introducing a number of silent variables as part of the noun's denotation. We have already seen one example of such an account in the discussion of size adjectives, which McNally (2016) argues can be treated as intersective and predicative if we assume that the adjective takes a standard of comparison as an argument. Morzycki (2015: §2.3.1) suggests that, similarly, event-related subsective adjectives (such as *buen* in *buen médico* 'good doctor') could be analysed as intersective if they, too, take an extra argument: in this case, one that relativises the role with respect to which the property applies.

- (35) *bueno* (como médico)
 good as doctor

Thus, *Juan is a good doctor* would be intersective, because Juan would be both a doctor and good as a doctor.

An example of the second type of solution is McNally and Boleda's (2004) analysis of classificatory relational adjectives, which as we saw are subsective in other analyses. Their proposal is that the relational adjective specifically applies to a 'kind' variable contained in the noun. Saying that something is a political problem would then be intersective because it is interpreted as saying that there is a kind that is both a problem and political, with 'political problem' denoting a particular subkind of problem. See also Larson (1998), who argues for the presence of event variables in the low NP structure, and suggests that similar approaches can be adopted for intensional adjectives, and Bouchard (2002), who specifies a number of additional variables, including variables for time, world and assignment functions, within the denotation of nouns of any class.

The relevance of this debate for the general characterisation of adjectives is twofold. First, the existing classification of adjectives shows that – pretheoretically – the main criteria to define word classes seem to fail when characterising adjectives, a problem we will discuss further in the next section. Second, the potential solution – which would involve at least claiming that adjectives can be homogeneously characterised by a set of syntactic properties – requires a proliferation of nominal variables or (covert) arguments inside the adjectival phrase, something that can be considered negative from the perspective of analytical parsimony. Deciding between the two alternatives – a heterogeneous semantic characterisation of adjectives or a proliferation of covert elements – cannot be done solely on the base of theoretical concerns, but ideally should involve a detailed discussion of empirical facts that explore the predictions of each approach. From this perspective, the analysis of the internal structure of complex adjectives will allow us to test these two hypotheses: do different adjective formation processes involve different structures, or is there evidence that they share a single configuration – at least within

one language? In essence, the morphological analyses that we will present in the core of this book are a means to the end of understanding what it takes to be an adjective in natural language.

Let us leave these theoretical concerns for the time being, and move to the problem of how to interpret the nature of adjectives.

3. Against the essentialist definition of adjectives

The main point that we will argue for in this section is that the difficulties noted in the previous section are not an accident of the existing classifications, but a sign that an essentialist characterisation of adjectives is impossible in natural languages. This will be argued through three facts: (i) adjectives cannot be universal categories, because well-documented languages have been shown to lack an adjective class; (ii) adjectives lack positive properties that distinguish them from nouns and verbs and (iii) even if we restrict ourselves to a single language, like Spanish, adjectives still cannot be defined as a natural class. The conclusion is that, at best, adjectives can be defined distributionally by a specific syntactic configuration that individual languages have exapted from other domains.

3.1 Non-universality

The essentialist hypothesis that there are three main lexical classes, N, V and A, differentiated by their inherent linguistic properties tends to be associated to the implicit or explicit idea that these three categories should be equally present in the languages of the world. The claim, however, is falsified by the existence of a significant number of natural languages that entirely lack the adjectival class. Importantly, the set of such languages is not reduced to extinct languages where the information comes from written grammars and reported facts.

McCawley (1992) claims that Mandarin Chinese lacks adjectives; other languages that have been argued to lack adjectives are Muna (van der Berg 1989), Swedish Sign Language (Bergman 1986), Acehnese (Durie 1985) and some varieties of Aleut (Golovko & Vaxtin 1990). See also Dixon (1982), Schachter (1985), Bhat (1994) and Wetzler (1996) for typological overviews. Baker (2003: 4–7, and Chapter 4) discusses in some length the problem of whether Mohawk has adjectives, noting that the Iroquianist tradition is unanimous in analysing the language as lacking this class. Instead, Mohawk expresses what English or Spanish translates as adjectives through stative verbs. From a morphological perspective, these 'semantic adjectives' inflect like other verbs in taking the same kind of agreement, tense and aspect affixes.

- (36) ka -hutsí -hne' [adapted from Baker 2003: 4]
 neuter.SG be-black past
 'It was black'

These elements, as verbs, do have some special properties, such as the fact that they must be used in stative form only, but the crucial fact is that the language does not define any general morphological or syntactic strategy that differentiates them from verbs. In terms of Baker's (2003) own definitions, (36) is a verb because it does introduce a subject by itself, without the help of copula support, although later on (2003: 259–260) he does argue that Mohawk has an attributive construction that only 'adjectival' roots can participate into.

3.2 Absence of positive properties and derived character

If not all languages have adjectives, then maybe the essentialist view can be maintained for at least the languages that have them. Adjectives could be defined by one feature, call it [X], that is selected from a universal inventory only in some languages. The question, then, would be what the feature [X] contributes for such languages.

The task is complicated by the fact that even those who have argued for the existence of an adjectival class have characterised adjectives as 'categories that cannot do what nouns and verbs can do' rather than as 'categories that can do something that neither nouns or verbs can do'. The prime example is Baker (2003), as we have seen. Within his theory, verbs are defined by an essential positive property, the capacity to introduce a subject lexically. All verbs in the language can be identified because they are the categories that systematically are able to introduce subjects without the help of copular elements (37, for Spanish).

- (37) a. Juan viene. V
 Juan comes
 b. Juan *(es) alto. A
 Juan is tall
 c. Juan *(es) profesor. N
 Juan is teacher
 'Juan is a teacher'

Nouns come endowed with identity criteria. It is possible to judge the sameness of concepts expressed by nouns, as shown by the modifier *mismo* 'same' in (38). Similar modifiers expressing identity are unavailable for verbs (39) or adjectives (40): two events cannot be claimed to be the same, and two properties cannot be claimed to be the same.

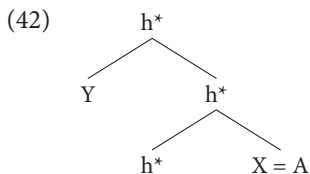
- (38) Clark Kent y Superman son la misma persona. N
 Clark Kent and Superman are the same person
- (39) a. Vi a Pedro hacer algo. N
 saw.1SG A Pedro do something
 'I saw Pedro do something'
- b. *Vi a Pedro el mismo hacer algo que a Juan. V
 saw.1SG A Pedro the same do something than A Juan
 Intended: 'I saw Pedro perform the same action as Juan'
- (40) a. Ana es brillante. N
 Ana is brilliant
- b. *Ana es el mismo brillante que Carla. A
 Ana is the same brilliant than Carla
 Intended: 'Ana is brilliant to the same degree as Carla'

In contrast, adjectives are defined as the categories that are not endowed with either of the two positive properties, theta-role assignment to subjects and referential indexes (Baker 2003: 190–192). There are environments where adjectives can appear, and verbs and nouns are excluded (41), not because something defines adjectives as categories that satisfy the requisites of those structures, but because the positive properties of verbs and nouns prevent them from appearing there.

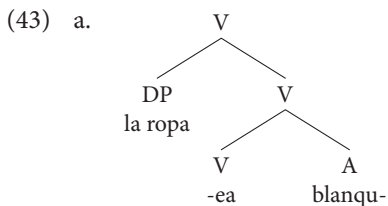
- (41) a. una chica {elegante / *cantar / *persona}. *Attributive construction*
 a girl elegant sing person
- b. muy {elegante / *cantar / *mesa} *Degree modification*
 very elegant sing table
- c. atarse flojos los cordones *(Pseudo-)resultative predication*
 tie-SE loose the shoe-laces
 'to tie the shoe-laces loose'

One can question whether these contexts are really specific for adjectives (and we will do so in the next section), but the important point for the time being is that even if these contexts were exclusive for adjectives, this would be due to their absence of positive properties, essentially because they are devoid of other properties.

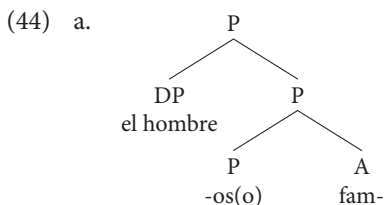
The absence of essential properties that define adjectives as specific lexical categories is reflected, in distributionalist accounts, in their derived nature. In Hale & Keyser (1993, 2002), as we already mentioned, adjectives are parasitic categories that combine with heads able to take complements in order to combine with a specifier.



The structure in (42) can be in principle implemented by introducing the adjective as the complement of a verb (43) or a preposition (44, cf. Mateu 2002).



b. blanqu-ea la ropa
whit-en the clothes



b. el hombre fam-oso
the man fame-OUS
'a famous man'

This is the only case within Hale & Keyser's system where a lexical category is built using other independently defined grammatical categories. In other words, in this system the real primitives are N, V and P, but not A.

3.3 Adjectives do not form a natural class in Spanish

If adjectives are not universal categories, and if they lack positive properties, it could at least be the case that for a single language we can identify some characteristic that defines them. Perhaps Swedish Sign Language lacks adjectives, but Spanish might have them. In this section we will show that even this less ambitious statement can be shown to be wrong.

We must start by reminding ourselves of what it means to be a natural class. When one identifies a natural class one is not simply assigning a label to an arbitrarily defined set of elements: one identifies some characteristic that defines a set of elements differentiating them from other sets. If the set is really a natural class, the members of the set will share other characteristics beyond the one used as a criterion for putting them together. Consider verbs. In Baker's proposal, verbs are defined as a natural class by their capacity to introduce subjects lexically; the elements belonging to that set, beyond that property used to characterise the set, can be shown to share other properties, such as their ability – in many languages – to combine with tense and aspect morphology, which adjectives and nouns cannot do. Defining adjectives as a natural class should produce a similar result.

What could be the property that defines adjectives as a natural class? We have already discussed a few, and shown that they are – in principle – not the right criteria to group them. A morphological criterion defining them as the categories that agree in gender and number with nouns would group them with most determiners and quantifiers:

- (45) est-a-s chic-a-s alt-a-s
 this-F-PL girl-F-PL tall-F-PL
 'these tall girls'

This criterion also fails in that not all adjectives agree. There are not many cases in Spanish, but RAE and ASALE (2009: 13.5k) identify a few cases of adjectives that speakers can build without number agreement. To be clear: agreement with these adjectives is attested for instance in Google (Isabel Oltra-Massuet, p.c.), but speakers can also drop agreement entirely.

- (46) a. abuelas gagá
 nannies gaga
 b. películas porno
 movies porn
 c. canciones tecno
 songs techno

(46a) is a loanword from French, and we might argue that its phonological shape – with stress on the last vowel – contributes to the lack of agreement, but this does not contradict the fact that Spanish allows the use of attributive adjectives without any agreement. (46b) could be treated as a case of truncation, and the lack of agreement might be simply related to this – the agreement morphemes are also truncated (47).

- (47) películas porno(gráfic-a-s)
 movies porno(graphic-F-PL)

However, truncation is much less appealing as a solution in the case of (46c), because the presumable non-truncated form, *tecnológicas* ‘technological’, simply lacks the meaning that *tecno* ‘techno’ has.

Could degree inflection be used as a criterion to define adjectives as natural classes? Again, the answer is no. Spanish has a superlative morpheme, *-ísimo*, which attaches to some adjectives:

- (48) a. elegant-*ísimo*-o
 elegant-SPLT-M
 b. difícil-*ísimo*-o
 difficult-SPLT-M
 c. riqu-*ísimo*-o
 tasty-SPLT-M

However, a subset of nouns also accept it (cf. Serradilla Castaño 2005; Gómez Torrego 2007).

- (49) a. general-*ísimo*-o
 general-SPLT-M
 ‘the first general’
 b. herman-*ísimo*-o
 brother-SPLT-M
 ‘favorite brother’
 c. final-*ísimo*-a
 final-SPLT-F
 ‘the most important final in a tournament’

It is also false that any adjective allows this suffix, because it is equally false that all adjectives allow degree modification. Some intensional and all relational adjectives cannot combine with modifiers expressing degree:

- (50) a. un (*muy) presunto asesino
 a very alleged murderer
 (but *un muy posible problema* ‘a very possible problem’)
 b. una revista (*muy) semanal
 a journal very weekly

Still, it could be that relational adjectives and the intensional adjectives that reject degree modification should not be considered adjectives, but nouns or quantifiers over possible worlds. Even if this were the case, the set defined by this criterion would not produce a natural class. Bosque and Masullo (1997) discuss in detail the interpretations of *mucho* ‘much’ in combination with verbs and identify a class where the adverb acts as a degree modifier of states:

- (51) a. querer mucho a alguien
love much A someone
'to love someone to a high degree'
- b. temer mucho algo
fear much something
'to fear something to a high degree'

Some prepositional phrases also allow degree modification, in some cases selecting even the identical set of adverbials as adjectives.

- (52) a. ser de pueblo
to.be of village
'to be a country person'
- b. ser {muy / bastante / un poco / demasiado} de pueblo
to.be very quite a bit too-much of village
- c. ser {muy / bastante / un poco / demasiado} rústico
to.be very quite a bit too-much rustic

Degree modification, then, is not a criterion to distinguish adjectives from other classes either in terms of morphological marking or in terms of plain syntactic combination.

How about the property that adjectives can be used as noun modifiers? There is a class of adjectives in English that cannot be used as modifiers (Bolinger 1967; cf. *asleep, alive*), but we are not aware of any such cases in Spanish. However, even if it is true for Spanish that all adjectives can be used as modifiers of nouns, this would not define them as a natural class simply because prepositional phrases can also act as modifiers. Sánchez (1996) discusses in detail the case of the PP in (53), which she treats as a subjective modifier of the head noun that defines a subclass of thief.

- (53) un ladrón de joyas
a thief of jewels
'a jewel thief'

These PPs pattern with other nominal modifiers – and contrast with argumental PPs (54) – in that they can precede other adjectives, something impossible in general for PPs (55), which tend to be peripheral within the noun phrase (Adger 2013).

- (54) el ladrón de las joyas
the thief of the jewels
'the person that stole the jewels'
- (55) a. el ladrón de joyas elegante
the thief of jewels elegant
'the elegant jewel thief'

- b. *el ladrón de las joyas elegante
 the thief of the jewels elegant
 Intended: 'the elegant person that stole the jewels'

It can be shown that these PP modifiers do not form lexical units with the head nouns – compounds or otherwise (Piera & Varela 1999); for instance, noun ellipsis is allowed:

- (56) un ladrón de guante blanco, otro e de joyas y otro e de bancos
 a thief of glove white, another of jewels and another of banks
 'a gentlemanly thief, a jewel thief and a bank robber'

In semantic terms, we have already seen that – at least at first sight – adjectives are not always intersective; if analyses such as those in Larson (1998) turn out to be right, however, a candidate to define adjectives as a natural class could be that they are intersective modifiers. However, again, some PP modifiers are also intersective: (57) licenses the two entailments in (57a) and (57b).

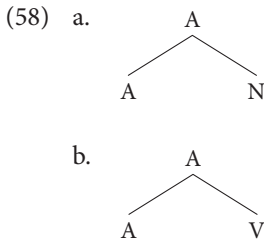
- (57) Luis es un médico de Toledo.
 Luis is a doctor from Toledo
 'Luis is a doctor from Toledo'
 a. Luis is a doctor.
 b. Luis is from Toledo.

In conclusion: none of the candidates for an essentialist definition of adjectives as a natural class work, even if we restrict ourselves to a language that has been claimed to have an open lexical class of adjectives, such as Spanish. If there is a (positive) property that defines adjectives as a natural class in Spanish, this property has not yet been identified.

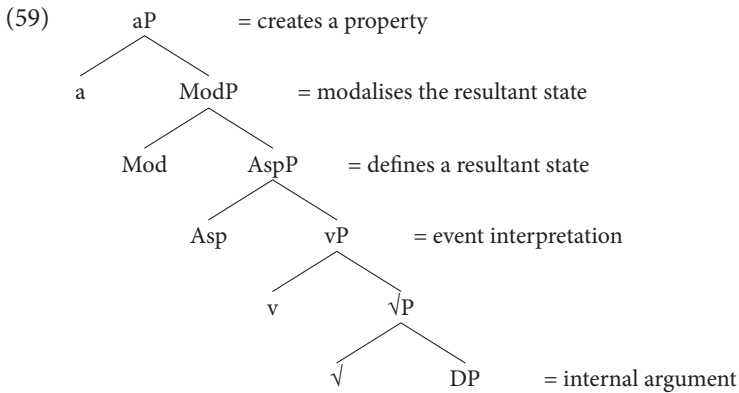
4. Consequences for morphological analysis

In the previous sections, we have argued that 'adjective' is not a universal category and that in languages that have them, adjectives are not amenable to an essentialist definition because there are no (positive) properties that define them as a natural class. This has a number of consequences for morphological analysis, which we will briefly discuss in this section as a way to introduce the main research questions in subsequent chapters.

The main question has to do with the meaning that structures such as (58) could have, in the context of the absence of positive properties that define adjectives as natural classes:



In a standard representation, both within lexicalist approaches and within neo-constructionist approaches (which would just write AP as the label of the sets in 58), the way of accounting for adjectivalisation involves projecting an A head above the base. (59), for instance, gives the representation of *-ble* ‘able’ deverbal adjectives according to Oltra-Massuet (2014: 151), to date the most complete and detailed analysis of this suffix.



This adjectival head¹ is meant to cancel the category-specific properties of the base that are not reflected in the whole word, and to impose the properties that define the word as an adjective. In the particular case of Oltra-Massuet, the role is to create a property, which in the context of her proposal (2014: 17–18) seems to correspond to a pure predication of characteristics implying no episodic event properties, such as a link to a specific time period in the actual world. This would mean that the role of the adjective is to cancel some event properties rather than to add specific properties, but this has two complications. The first one is that a modal head, if it has the right denotation, can already be enough to cancel the episodicity

1. Note that Oltra-Massuet adopts the Distributed Morphology convention that the categorising head is a functional element, thus using the label aP as opposed to AP, traditionally taken to be a lexical head. Our point, however, is independent of this technical choice.

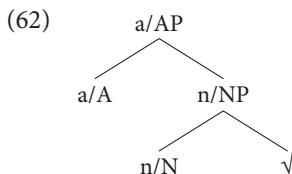
entailment that the vP layer introduces in standard analyses. Even if (60a) entails that the road is widened in a specific time and world, (60b) does not entail it, just like the adjectival (60c).

- (60) a. El camino es ensanchado.
 the road is widened
 b. El camino puede ser ensanchado.
 the road can be widened
 c. El camino es ensanchable.
 the road is widen-able
 ‘The road can be widened’

If ‘denoting a property’ is to be interpreted as aP habilitating a subject position for the whole to act as a predicate of individuals, note that syntactically a PredP (Bowers 1993; Baker 2003) could do the job independently of aP. It seems that aP in the structure does little more than define the whole through the traditional label ‘adjective’. But there is a second complication, which is that if a/A were present in words called ‘adjectives’, it could not be the case that its contribution to the structure is to cancel the event entailments. The empirical reason is that in the case of adjectival participles it is possible to find episodic entailments. In (61), the participle *visitado* ‘visited’ necessarily entails that the museum has participated in a specific event of visiting in the actual world.

- (61) Es un museo visita-d-ísimo.
 is a museum visit-DO-SUPL
 ‘It is a museum that is very frequently visited’

If creating a property is more than habilitating a subject position for the whole, an additional complication of (59) is that a different a/A head would have to be used for denominal adjectives, because with them there is no event entailment that needs to be cancelled.



So do we need a/A as a head in order to account for the facts?

We must be explicit that none of these critiques is completely lethal to Ultra-Massuet’s theory, or specific to her proposal. The problem extends to all accounts that analyse adjectivalisation as the result of merging an a/A head above the

base, to the extent that the existence of such head implies that there is an essential set of features that will be imposed to the whole structure. Part of the problem is the vague definition of what counts as a ‘property’, again a traditional notion that is associated to adjectives in descriptive grammars but which, in semantic terms, is not enough to define the class, if only because Ns and Vs also denote ‘properties’ in this general sense, as sets of characteristics that are predicated of something. If we have picked Oltra-Massuet (2014) to illustrate this point, it is just because her theory is maximally explicit, and allows us to see that the job that a/A should do according to the traditional accounts can be made through other non-adjectival heads, such as Mood and Pred.

In fact, pushing Oltra-Massuet’s proposal one step further – taking ‘creates a property’ as ‘creates a predicate’ – allows for an elegant distributional account of what an adjective is in Spanish. The account, perhaps not surprisingly, matches Hale & Keyser’s view of adjectives as derived categories (cf. also Mateu 2002):²

- (63) ‘Adjectives’ in Spanish are configurations where a relational structure establishes a link between a nominal category and a complement X

Relational structures are mainly prepositional (Hale & Keyser 1993; Klein 1994). In (63), a Predication head could be part of the relational structure, but only if the resulting adjective is a predicate. If Larson’s (1998) suggestion that all attribution can be reduced to intersective predication is right, then the relational structure could imply Pred. This distributional view of adjectives means in actuality that adjectives are derived categories, specifically categories derived through a class of heads whose prototypical members are prepositions, something that explains why adjectives and prepositions are both able to act as modifiers in Spanish.

Beyond the descriptive goal of presenting the facts about adjectival derivation, the rest of this monograph can be interpreted as a study of how the intuition in (63) can successfully be used to explain a number of contrasts within adjectival derivation. The main ones, together with the chapter where they are discussed, are the following:

-
2. Before we go on, a brief note is in order about the preliminary evidence that adjectives are prepositional structures in Spanish. Mateu (2002) (see also Gallego 2010) cite as evidence that in many cases adjectives can be paraphrased with prepositional structures (for instance, *corn-ado* ‘horn-ADO, horn-ed’ ~ *con cuernos* ‘with horns’). Within their theoretical assumptions, the second structure could be viewed as the analytic version of the first, both of them consisting basically of the same members. We will not use this test, mainly because of the difficulty in guaranteeing that two structures are in fact paraphrases of each other. Notice, also, that this test would be inapplicable in principle to deverbal adjectives, so relying on it would prevent us from having a unified account of all adjective classes.

- (64) a. How does the structure account for the main differences between relational and qualifying adjectives? (Chapters 3 and 6)
- b. Is the structure enough to explain the other classes of denominal adjectives? (Chapters 4 and 5)
- c. How does the structure manage to cancel the event entailments that one would expect in the case of deverbal adjectives, in the right cases? (Chapters 6 to 9)

It is important to note that (63) has been defined relative to Spanish. The reason is that, as we saw, adjectives cannot be considered a universal category. It is therefore conceivable that languages that do have a class of adjectives, in the descriptive sense, have more than one configuration available to build this class; judging from Stassen (1997), it might very well be the case that in individual languages adjectives are configurationally defined through structures involving stative verbal heads, and Mohawk seems to be an instance of this. Our claim is, however, that Spanish defines adjectives as relational structures; in a sense, that Spanish recycles prepositional heads to define the adjectival class. The next and final section of this chapter will provide some initial arguments for the plausibility of this claim.

5. Head recycling and adjective formation

The core idea is that, to the extent that ‘to have adjectives’ is a meaningful notion inside a language, languages like English and Spanish build their adjectives using primitives originally related to the prepositional domain, specifically relational heads. This section provides initial evidence that this idea is plausible through the discussion of three phenomena that were argued in Fábregas & Marín (2018) to be due to the contrast between Place and Path prepositions, which is characteristic of the prepositional domain.

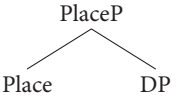
Before we present these phenomena, let us take a moment to be explicit about how we interpret the distinction. If correct, the claim that English adjectives are PlaceP projections while Spanish adjectives are PathP projections simply means that the scale component of adjectives is syntactically grammaticalised in Spanish, but not in English. This does not imply per se that the semantic interpretation of adjectives should be different in the two languages: our claim is that the syntactic structure related to them is minimally different (with or without a syntactic scale projection), and the phenomena that we will discuss show that the syntactic combination of the adjectives is different in English and Spanish. Depending on the assumptions that one makes about how powerful LF is, English could be associating scales to adjectives in that level, or leaving the scale interpretation to properties of the conceptual semantics of the roots associated to the adjectives. There is no

evidence that English interprets adjectives differently from Spanish in semantics, so our point here should be interpreted as merely a syntactic claim about the heads involved in their syntactic representation in each language.

As is well-known (cf. Jackendoff 1983; Koopman 2000; Svenonius 2010; Den Dikken 2010), there are two main classes of spatial prepositions: those denoting Place (PlaceP) and those denoting Path (PathP) – cf. also the distinction between Locative and Directional (Wunderlich 1991, van Riemsdijk & Huybregts 2002), which is coextensive, and the distinction between Central Coincidence and Terminal Coincidence in Hale & Keyser (2002), which is similar but not identical. Place prepositions express static relations whereby an entity is located with respect to the area projected by another entity (cf. 65); path prepositions express more complex construals, where an entity changes location with respect to the area defined by another entity (66).

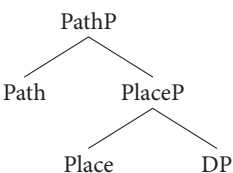
- (65) a. Puso [el libro en la mesa].
 put.3SG the book on the table
 ‘He put the book on the table’
 b. Dejó [el abrigo bajo la cama].
 left.3SG the coat under the bed
 ‘He left the coat under the bed’
- (66) a. Juan (corre) hasta la ventana.
 Juan runs until the window
 ‘Juan runs to the window’
 b. Juan (viene) desde su casa.
 Juan comes from their house
 ‘Juan comes from their place’

The syntactic representation that we will assume here for these two types of relational structures is taken from Svenonius (2010): path construals are built with an extra head that takes place prepositions as its complement. Both place and path heads belong to the region of lexical prepositions.

- (67) a. 

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graph TD
  PlaceP --> Place
  PlaceP --> DP
  
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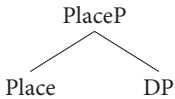

 b. 

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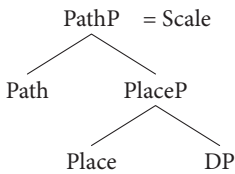
graph TD
  PathP --> Path
  PathP --> PlaceP
  PlaceP --> Place
  PlaceP --> DP
  
```

Fábregas & Marín's (2018; henceforth, F&M) point is that the same distinction between place and path structures can be identified in the adjectival domain. Specifically, they argue through three contrasts that English adjectives are projections of a relational head corresponding to PlaceP, while Spanish adjectives are projections of PathP.

(68) a. English APs



b. Spanish APs



In their proposal, the first contrast that can be derived from this distinction is the well-known restriction that Spanish lacks strong resultative APs (Washio 1997). As is well-known, if we focus on strong result state complements – those that are not lexically entailed by the main verb and introduce a real result state, not a manner of the process (Washio 1997), both PPs and APs can play this role in English, while in Spanish this is restricted to place PPs (see, among many others, Hernanz 1988; Suñer 1990; Leonetti & Escandell 1991; Mallén 1991; Starke 1995; Jiménez-Fernández 1998; Demonte & Masullo 1999; Son & Svenonius 2008; Acedo-Matellán 2012):

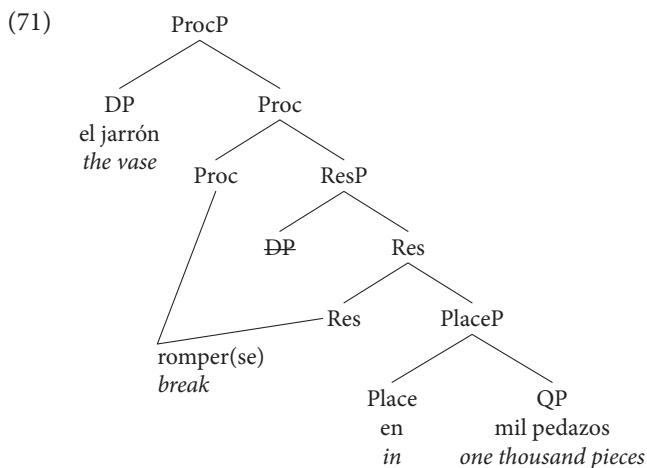
(69) a. John broke the vase in one thousand pieces. *Place PPs*

b. Juan rompió el jarrón en mil pedazos.
 Juan broke the vase in one thousand pieces

(70) a. John shot Mary dead. *APs*

b. *Juan disparó a María muerta.
 Juan shot A María dead

(70b) cannot be interpreted as meaning ‘John shot Mary, and as a result Mary died’. The crucial observation for F&M is that result complements cannot be introduced by path prepositions: in that configuration place prepositions are compulsory. Following Ramchand (2008), the reason is that result interpretations are built with the stative verbal head Res(ult)P; because of its stative nature, this head rejects path prepositions. (71) represents the structure of (69) in both languages.

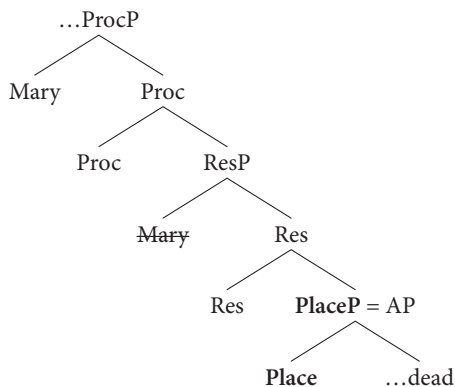


In (71) the PlaceP *in one thousand pieces* describes the state that results after the process of breaking culminates. Path prepositions are ungrammatical as complements of the stative head, as they are ungrammatical in general when combined with stative predicates (72).

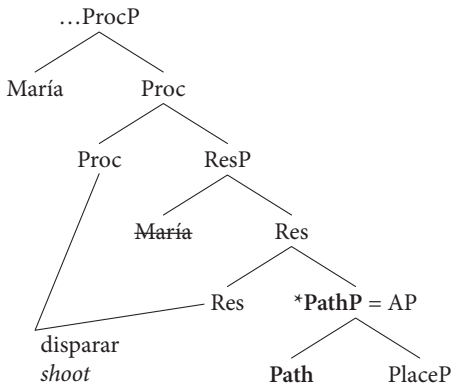
- (72) a. *Juan is to Madrid.
 b. *Juan está hasta Madrid.
 Juan is to Madrid

The proposal that Spanish adjectives are PathPs, while English adjectives are PlacePs, automatically accounts for why adjectives are available as resultative predicates only in English:

- (73) Juan shot Mary dead.



(74) *Juan disparó a María muerta.



Spanish can, on the other hand, project adjectives as spurious resultatives (Washio 1997), which in fact modify the manner in which the process takes place (and only by implication can be interpreted as affecting the object that undergoes a change). (75) is one example of a spurious resultative.

(75) Juan picó [fina] [la cebolla].
 Juan cut thin the onion
 'Juan cut the onion thin'

Spurious resultatives are allowed in Spanish because, following Washio (1997), they modify the manner component of the verb, and therefore they do not combine with ResP. Fábregas and Marín suggest that they modify Proc(ess)P, which contains the dynamic part of the event. ProcP, not being a stative head, does accept path prepositions, so the compatibility of Spanish adjectives with these heads is expected.

The claim that Spanish APs are in fact PathPs, in a sense, means that Spanish APs grammaticalise the scale component of the adjective. Kennedy and McNally (2005) have studied in detail the taxonomy of scales, as part of the denotation of adjectives. Their main claim is that adjectives, semantically, contain information about the scales that underlie the properties that they denote. A scale is interpreted as a series of ordered values, degrees, that apply to a specific dimension. In this sense, they are paths of sorts: prototypical paths are ordered series of points in space.

(76) a. spatial/prototypical path: ...p...p...p...p...
 b. scale/ degree path: ...v...v...v...v...

Paths can be bounded (*hasta* 'to') or unbounded (*por* 'through'), and when they are bounded they can be bounded in the initial point of the trajectory (*desde* 'from') or in the final point (*hasta* 'to') (Pantcheva 2011). Similarly, in Kennedy & McNally's analysis, scales are divided in subclasses depending on whether they contain a

maximal value, a minimal value, neither or both. The correlation between paths and scales makes path structure a candidate to express scalar properties in syntax.

The claim that Spanish projects adjectives as PathPs can be interpreted, then, as the claim that Spanish syntacticises scalar structure, codifying them in the syntax. The prediction which F&M relate to this claim is that Spanish will differentiate syntactically those adjectives belonging to different types of scale, while English will, at best, differentiate them only in semantics.

Specifically, F&M argue that Spanish distinguishes in the syntax adjectives belonging to closed scales – absolute adjectives, cf. *borracho* ‘drunk’, *recto* ‘straight’ – from adjectives belonging to open scales – relative adjectives, cf. *alto* ‘tall’, *guapo* ‘pretty’. Absolute adjectives have scales that are associated with a maximal and/or a minimal value, which is taken by default as the standard value used to evaluate whether a particular degree of the property counts as having that property (Kennedy & McNally 2005). Relative adjectives, in contrasts, have unbounded scales, and semantically the standard value has to be set in some way, for instance binding it contextually.

In English, even though there is a minimal or maximal value that can be used as a default, it is syntactically possible to redefine the standard value of an absolute adjective by introducing a PP expressing a comparison class (Rotstein & Winter 2004; McNally 2011; Sassoon & Toledo 2011). Semantically, a process of re-accommodation is needed, but the PP can be introduced in the syntax, according to the native speakers consulted.

- (77) a. This glass is full for a wine glass. *Absolute adjectives*
 b. This guy is drunk for an aviator.

In (77a), the glass is not full up to its border, and the aviator might not be maximally drunk, but just drunk enough for what is acceptable in someone that has to pilot a plane. In English, relative adjectives also allow this PP:

- (78) a. This child is tall for a three year old. *Relative adjective*
 b. This car is expensive for a Volvo.

So, absolute and relative adjectives are not syntactically different in English: both allow a PP expressing a comparison class.

In contrast, in Spanish there is a syntactic difference between absolute and relative adjectives with respect to the availability of the comparison class PP: only relative adjectives allow them.

- (79) a. *Esta copa está llena para una copa de vino tinto. *Absolute*
 this glass is full for a glass of wine red

- b. *Pedro estaba borracho para un astronauta.
 Pedro was drunk for an astronaut
- (80) a. Juan es alto para un chico de tres años. *Relative*
 Juan is tall for a boy of three years
 ‘Juan is tall for a three-year-old boy’
- b. Este coche es caro para un Volvo.
 this car is expensive for a Volvo

Again, this syntactic difference is explained if Spanish syntactically projects scales as PathPs, that is, as syntactic objects: in that case we expect that the distinctions between scales of different kinds, absolute and relative, is syntactically relevant. In English, scales are semantic objects only: as syntactic objects, all adjectives are the same because they all project as PlacePs, even if one semantic class needs accommodation and the other one does not.

One final contrast pointed out by F&M that distinguishes Spanish adjectives from English adjectives refers to the use of the comparative forms inside verbal derivation. The main observation comes from Bobaljik (2012), who claims that, cross-linguistically, if a degree achievement verb is derived from an adjective and the adjective has a suppletive form for the comparative, the comparative form is used as the base.

Consider (81). In English, the comparative of *bad* is *worse*, and that is the form that is used when building the verb equivalent to ‘becoming worse’; the form *badd-en*, while attested, corresponds to the semantics of the comparative *badd-er*, restricted to a particular specialised meaning that is predictably kept in the derived verb. If the verb does not denote a gradual change (81b), the positive form of adjectives otherwise distinct in the comparative can be used. In general, degree achievement verbs cannot be formed with the positive degree adjective if there is a distinct comparative form (81c).

- (81) a. to worsen / #to badden
 b. to belittle
 c. *to small-en, *to good-(d)en

The restriction does not extend to Spanish, contra Bobaljik. In Spanish there are also some verbs derived from the suppletive comparative form of the adjective, such as *mejor-ar* ‘better-V, improve’ or *em-peor-ar* ‘im-worse-V, to worsen’. However, it can be shown that Spanish does have verbs that (i) denote gradual change; (ii) are derived from adjectives that have a suppletive comparative and (iii), nevertheless use the positive degree morphology as the base for the derived verb. Consider (82):

- (82) Chepita, que estaba maluca, ya se está *a-buen-a-ndo* [Perú]
Chepita, who was sickly, already SE is A-good-en-ing
 ‘Chepita, who was a bit sick, is already getting healthier’

The gradual change reading is obvious here: Chepita is healthier. The base form is the positive degree *bueno*, not the suppletive comparative *mejor*. Importantly, the non suppletive comparative *más bueno* in Spanish – while attested – cannot be used in the meaning of *bueno* as ‘healthy’ that the verb in (82) has:

- (83) #El paciente se puso más bueno.
 the patient SE became more good
 *’The patient became healthier’
 ✓’*The patient became more attractive*’

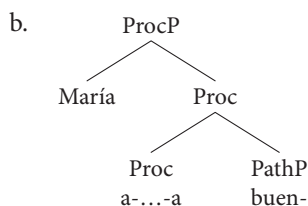
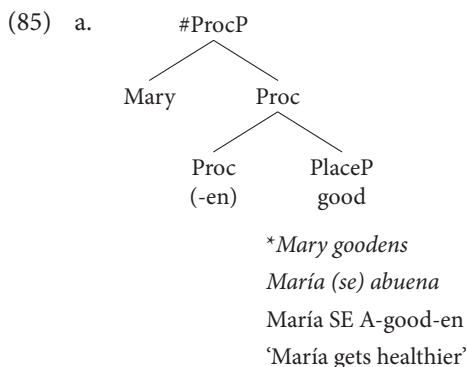
It can also be shown that the base in (82) is not the noun *bueno* that some speakers accept as a converted form of the adjective. Those speakers that accept *bueno* as a noun never assign it the meaning of ‘someone healthy’, by opposition to someone sick.

- (84) *un bueno
 a good
 Intended: ‘a healthy person’

The fact is, then, that Spanish can use the positive degree adjective as a base to build a gradual change of state even in cases where the adjective has a suppletive form for the comparative, something impossible in English.

Following a long tradition (cf. for instance Hay, Kennedy & Levin 1999), the crucial property of degree achievements is that the scale underlying the base adjective is used as a path that measures the gradual change. A verb like *worsen* denotes a transition along the set of values defined by ‘bad’.

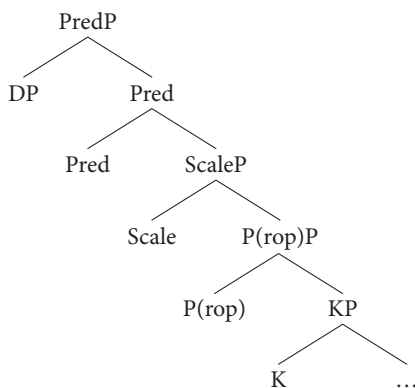
Now, F&M note that if adjectives in Spanish syntactically project their scales as PathPs, the fact that the positive form is good enough to measure the change is explained: the adjective in the positive degree already contributes the path required by the gradual change to be defined. In contrast, if English adjectives are projections of PlaceP and therefore their scales are not projected in the syntax, an English adjective in the positive degree will not contribute a scale, and we expect precisely that the adjective will have to be combined with degree morphology in order to define that path. If the positive form is used in English, then, either the verb does not denote a gradual change, or the adjective does not differentiate between the comparative and the positive degrees.



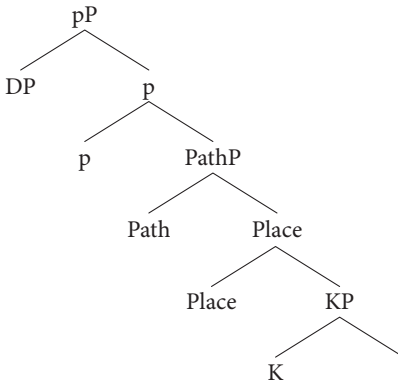
In conclusion, there is some initial plausibility to the idea that adjectives are built using heads that originally belong to the prepositional domain in Spanish (and English), because through the comparison between the two languages we find reasons to believe that they replicate the difference between Place and Path that is typical of the prepositional domain.

This leaves us with a distributional, context-dependent account of what an adjective is. Adjectives, we have argued in this chapter, cannot be defined by essential properties. A language that has them defines them through a configuration that is borrowed from another domain; in the case of Spanish, relational heads and specifically paths, which implies that Spanish adjectives syntacticise their scales. The result is that in the case where the whole prepositional structure is projected, a qualifying adjective in Spanish would consist of the following elements, which in (86) compares to the equivalent in the prepositional domain:

(86) a. In 'adjectives'



b. In prepositions



PredP, like pP, introduces the subject of a relation that K denotes. Prop, like Place, assigns descriptive properties to the relation introduced by K, and Scale, like Path, defines a set of ordered values taking the property below as a reference point.

The denotation that we assume for the members of the adjectival projection are parallel to those that we presented in Chapter 1, §3.2 for the prepositional structures – remember that we propose that they are in fact the same heads. As in example (40), K is the head that turns the complement into one member of a relation (87). Here the base is an NP or a VP, not a referential DP with an index. We propose that the base is used to describe x , the first member of the relation with the set P of properties denoted by VP or NP (88).

$$(87) \quad [[K]] = \lambda y \lambda x \lambda R [R(x, y)]$$

$$(88) \quad [[KP]] = \lambda y \lambda R [R(x, y) \ \& \ P(x)]$$

The heads I call P(ro)P and Scales simply act as modifiers of the R relation; their semantics is, in parallel to Place or Path for prepositions, to restrict R to only those relations that satisfy a particular description.

$$(89) \quad [[Prop]] = \lambda R [Prop(R)]$$

This produces (90), which we will abbreviate to (91):

$$(90) \quad [[PropP]] = \lambda y \lambda R [R(x, y) \ \& \ P(x) \ \& \ Prop(R)]$$

$$(91) \quad \lambda y \lambda R [Prop-R(x, y) \ \& \ P(x)]$$

(92) is the denotation of PredP, standardly following Bowers (1993). This head introduces the subject of the predicate, as we argued for pP in Chapter 1, §3.2.

$$(93) \quad [[Pred]] = \lambda y \lambda P [P(y)]$$

This produces (94) when combined with the rest of the structure and after introduction of the subject DP – lets assign it the value ‘k’, in parallel with Chapter 1, §3.2.

$$(94) \quad [[\text{PredP}]] = \exists R[R(x, k) \ \& \ P(x) \ \& \ \text{Prop}(R)]$$

The question now is how this configuration can be used to analyse the plethora of properties of different adjectivalisation patterns. The rest of the book is devoted to providing an extended answer to this question. This said, we will mainly focus on the P(rop)P layer in the following analyses, leaving aside for most of the discussion the properties of ScaleP,³ which we will discuss only in specific sections when they are relevant for the analysis of the morphological facts.

3. See Fábregas (2016a: 205–213) for independent evidence that ScaleP should be identified as a separate layer in Spanish. The evidence comes from nominalisations: some deadjectival nominalisations denote the dimension that the adjective also denotes (i) without entailing that the subject has a sufficient degree of the property, while others (ii) denote the quality including the entailment that the appropriate degree is reached. This is analysed in Fábregas (2016a) as involving embedding of AP in (i), but of ScaleP in (ii); in the terms used in this monograph, instead, (i) is to be analysed as embedding PP, equivalent to PlaceP, while (ii) embeds ScaleP, equivalent to PathP.

- (i) la alt-ura de la casa
 the high-URA of the house
 ‘the house’s height’
- (ii) la mucha alt-ura de Juan
 the much high-URA of Juan
 ‘Juan’s tallness’

Denominal relational adjectives

We will start our discussion of derived adjectives with what is probably the most researched class of denominal adjectives, relational adjectives. This might be the best place to start a monograph whose goal is to deconstruct the notion of adjective through the analysis of the means that languages use to build them from nouns and verbs. The reason is that, among adjectives, relational adjectives are those that have fewer prototypical properties of the class viewed in its traditional sense.

In §1 we sketch our analysis for this class, and briefly compare it to the qualifying adjective class (for instance, *amable* ‘nice’) that is discussed in more detail in Chapters 4 and 5. Among other properties, note that *amable* is a gradable predicate (*muy amable*, ‘very nice’), in contrast to relational adjectives. In §2 we will present the empirical properties that allow to identify an adjective as relational, and will show that they are those that one expects from bare nouns marked with (semantically empty) prepositions. In §3 we will present our analysis about the internal syntax of relational adjectives and their spell out properties, which is the core of our proposal. §4 compares this proposal to previous analyses, while §5 addresses the external syntax of these adjectives, a topic where we will limit ourselves to showing that our analysis is compatible with a particular implementation that accounts for the position of relational adjectives.

To start the discussion, (1) presents several combinations of nouns with relational adjectives. It is already striking that the English equivalent sometimes translates them as nominal structures involving a genitive-marked DP (Postal 1969).

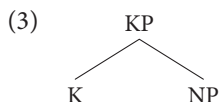
- (1) a. decisión presidenc-ial
 decision president-IAL
 ‘the president’s decision’
 b. invasión franc-esa de Italia
 invasion French-ES of Italy
 ‘the French invasion of Italy’
 c. artesanía man-ual
 work hand-UAL
 ‘hand-made craftwork’
 d. revista seman-al
 magazine week-AL
 ‘weekly magazine’

Note that a relational adjective does not accept copulative coordination with a qualifying adjective.

- (2) *un vino francés y barato
 a wine French and cheap
 Intended: 'a cheap French wine'

1. Sketch of the analysis

In a nutshell, the analysis I propose is that a relational adjective derived from a noun is the spell out of a truncated prepositional structure headed by KP, the head that in the prepositional domain marks an argument with inherent case and expresses an underspecified relation with another entity. In contrast to other cases, here the complement of K is an NP denoting a kind, not a DP denoting an individual.



Within the prepositional structure, the role of K is just to define a relation which is underspecified semantically. An additional head P – the lexical layer of the preposition – must be introduced to specify that relation within a particular dimension (place or path, for instance). My claim is that this lexical head is absent from the structure of a relational adjective.

As such, the relational adjective does not express a property within any dimension – because it lacks P, but an underspecified relation R that will depend to a great extent on the conceptual semantics of the modified noun. If that noun expresses an eventuality, the relation can be taken from the theta-roles that the eventuality could assign, but when there are no conceivable theta-roles, the relation will be interpreted as any type of relation that is considered informative in the context. In my analysis, the basic semantic function of relational adjectives is classificatory: they denote subkinds of the head noun by defining relations with other entities.

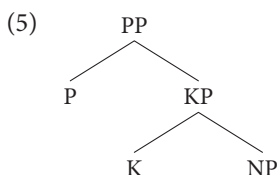
The lack of P, as I say, implies that there is no conceptual specification of what the relation means. I claim that this absence of a conceptual dimension within the structure of the relational adjective is what makes it be non-scalar and therefore non-gradable. If a scale is an ordered set of values across a dimension, that a relational adjective lacks the conceptual dimension provided by P implies that it will also fail to be scalar or gradable.

Relational adjectives, thus, are syntactically similar to classifying bare nouns introduced by a semantically empty preposition like *de* 'of', with the minimal difference that in the latter the structure projected by the nominal complement is possibly

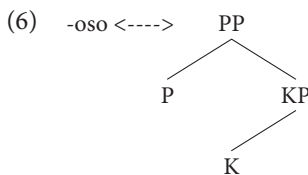
bigger. In the course of this chapter we will see syntactic and semantic parallelisms between these types of prepositional structures and relational adjectives.

- (4) una mesa de madera
 a table of wood
 'a table (made) of wood, a wooden table'

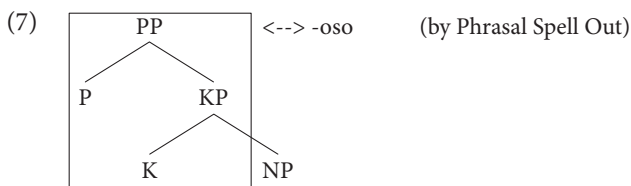
The structure of a qualifying adjective minimally differs in the presence of P above K (5). This implies that, syntactically, the qualifying adjective has more structure than the relational adjective, allowing it to combine in more syntactic structures. Semantically, this implies that the relation expressed by K gets conceptual content assigned, therefore allowing it (potentially) to express a scale through the equivalent of PathP.



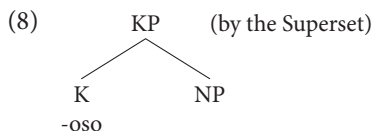
A second important component of the analysis refers to the spell out algorithm. One empirical property is that the same adjective can frequently be interpreted as relational or as qualifying. In our analysis, this translates as follows: the affix used as exponent can spell out either P + K or only K. As we saw in Chapter 1, §2.1, we here assume the spell out procedure of nanosyntax, where Phrasal Spell Out is used. By phrasal spell out we propose that a suffix able to express both relational and qualifying adjectives – eg., *-oso* – has the entry in (6).



When a qualifying adjective is built in the syntax – that is, when P is merged above KP, the suffix spells out the two heads (7). The semantic interpretation and the syntactic behaviour would be one of a qualifying adjective.



However, by the Superset Principle, that affix will also be able to spell out only the head K. My claim is that this is what happens when a relational adjective is built with *-oso*: because K is a proper subconstituent of the lexical entry, the suffix will be used to spell out only K, and syntactically the adjective will have the distribution and interpretation of a relational adjective.



A few set of affixes, though, have a lexical entry like the one in (9) for *-ical*. They can only spell out K, so if the syntactic structure builds also PP, they cannot be used (by the Exhaustive Lexicalisation Principle).



Therefore, these affixes will only be able to appear as spell out of relational adjective structures.

Now that our analysis has been introduced, let us go to the properties that define an adjective as relational.

2. Empirical properties of relational adjectives

The debate surrounding this class of adjectives concerns mainly three aspects: (i) to what extent a relational adjective can be considered an ‘adjective’, given that – as we will see – it keeps a lot of the semantic, morphological and syntactic properties of the base noun; (ii) what the meaning contribution of the adjectivalising suffix is, if any; (iii) what type of structure the relational adjective and the noun it accompanies establish. We hope to provide a full answer to at least some of these questions.

This class of adjectives was identified early (Dornseiff 1921; Frei 1929; Bally 1944) and there is a vast literature devoted to them (cf. among others, Kalik 1967; Postal 1969; Levi 1978; Bartning 1980; Warren 1984; Post 1986; Bosredon 1988; Bosque 1993, 2006; Ferris 1993; Valassis 2001; Mezhevich 2002; Boleda & McNally 2004; Murphy 2004; Lieber 2004; Nowakowska 2004; Giegerich 2005; Roché 2006; Fábregas 2007b; Gunkel & Zifonun 2008; Fradin 2008; Bisetto 2010; Marchis 2010, 2015; Rainer 2013; Bortolotto 2016). In this chapter, we will first examine the empirical properties that these adjectives have in Spanish – and, as far as we know, in other Romance languages, and then we will provide an analysis where we try to

capture all these properties. The analysis constitutes our first piece of evidence that what have been considered ‘adjectives’ in Spanish are in fact structures involving prepositional structures.

Relational adjectives can be differentiated from qualifying adjectives through a number of tests. In this section we will see them one by one, labeling each property with letters for ease to cross-reference in the analysis part.

A. Adjacency to the modified noun

The relational adjective must precede any postnominal qualifying adjective in the sequence, including the ones that tend to be most internal within the noun phrase (Scott 2002; Laenzlinger 2005), such as those referring to colour and shape (cf. 10a vs. 10b). This restriction is not true of *elegante* (cf. 10c).¹

- (10) a. un compuesto biológico rojo
 a compound biological red
 ‘a red biological compound’
 b. *un compuesto rojo biológico
 a compound red biological
 *‘a biological red compound’
 c. un abrigo rojo elegante / ?un abrigo elegante rojo
 a coat red elegant a coat elegant red
 ‘an elegant red coat’

1. One could think that the adjacency between noun and relational adjective could mean that the combination acts as a morphological compound. This cannot be right. That some PPs can intervene between the relational adjective and the noun excludes any treatment of the noun + relational adjective structure as involving any kind of compound (cf. Scalise & Bisetto 2008), given the well-known property of compounds as objects whose members cannot be separated by independent syntactic constituents. Other empirical facts that show that the combination has to be syntactic include the possibility to coordinate two relational adjectives (ia) and the possibility of having noun ellipsis (ib).

- (i) a. un riesgo biológico y financiero
 a risk biological and financial
 ‘a biological and financial risk’
 b. un riesgo biológico y uno *e* financiero
 a risk biological and one *e* financial
 ‘a biological risk and a financial one’

Among adjectives, only other relational adjectives can appear internal to relational adjectives; thus, when what seems to be colour or shape adjectives are actually used as relational adjectives, they can precede another adjective from the same class (11). In (11a) *tinto* ‘red’ is used to define a type of wine, not to describe the qualities of the wine; the same applies in (11b) to *cursivo* ‘cursive’.

- (11) a. un vino tinto francés
 a wine red French
 ‘a French red wine’
 b. letra cursiva medieval
 font cursive medieval
 ‘medieval cursive font’

The adjacency is, however, not strict. There is one type of constituent that can be freely reordered with relational adjectives: bare-NP prepositional structures introduced by *de* ‘of’. Crucially, this type of prepositional phrase is used to classify the head noun into subclasses (Sánchez 1996; Fábregas 2017a), and can precede or follow relational adjectives. Both (12a) and (12b) are equally acceptable. In contrast, bare-NP prepositional phrases introduced by semantically more specific prepositions, such as *con* ‘with’, display a clear preference to follow relational adjectives inside the NP (cf. 12c–12d).

- (12) a. un autor de novelas francés
 a author of novels French
 ‘a French author of novels’
 b. un autor francés de novelas
 an author French of novels
 ‘a French author of novels’
 c. fontaneros franceses con bigote
 plumbers French with moustache
 ‘French plumbers with moustache’
 d. ??/* fontaneros con bigote franceses
 plumbers with moustache French
 Intended: ‘French plumbers with moustache’

To the best of our knowledge, the case of bare noun-PP structures with the semantically underspecified preposition *de* ‘of’ is the only one where the relational adjective is systematically allowed to be non-adjacent to the head noun. Prepositional phrases that also define subclasses of the head noun, but that lexically specify the conceptual domain used to define the subclass, follow the relational adjective in the

informationally neutral order.² This is the case of the preposition *con* ‘with’ used to express possession, but also of others that will be discussed in Chapters 4 and 5.

If we take into account that the contribution of the bare-NP prepositional phrase *con bigote* ‘with moustache’ is similar to that of a qualifying possessive adjective (for instance, *bigot-ado* ‘moustache-ed, with a moustache’) we see that the behaviour of these two kinds of prepositional modifiers is parallel in this respect to the distinction between relational adjectives, on one side, and qualifying adjectives, on the other. We will argue later in this chapter that the reason for the parallelism is that there are important structural similarities between the two types of modifiers.

In contrast to the two classes of modifiers in (12), prepositional phrases containing determiner phrases (DPs) must always follow relational adjectives (13). These PPs, instead of providing subclasses of the head noun, are used to introduce arguments and other participants related to the head noun.

- (13) *el autor de la novela francés
 the author of the novel French
 Intended: ‘the French author of the novel’

2. Unless otherwise specified, the grammaticality judgements reported here reflect the judgements reported in the literature, and confirmed by the author’s own judgements. In the case of these more subtle contrasts, like this one, wider tests have been conducted. In this case, in an informal test that was conducted in June 2018 with native speakers of European Spanish from Madrid, Catalunya and Andalucía, all speakers agreed that the neutral order is (6c) and not (6d), although the acceptability of (6d) varied idiosyncratically among speakers. One reported factor that facilitates the ordering in (6d) is that the head noun and the lexical preposition form a compound-like structure, as witnessed for instance in that the combination does not have a compositional reading. Consider for instance (i). In the reading where *pan con tomate* ‘bread with tomato’ is interpreted compositionally – a slice of tomato on a slice of bread, the order is the one reported in (6) above, cf. (ib). In the reading where the sequence corresponds to a typical Catalan snack, (ic) is the grammatical order.

- (i) a. pan con tomate
 bread with tomato
 b. pan catalán con tomate (cf. 6c)
 bread Catalan with tomato
 c. pan con tomate catalán (cf. 6d)
 bread with tomato Catalan

The compound-like interpretation of (ia) plausibly involves attachment of the PP modifier at a very low position, perhaps previous to the categorisation of the root as a noun. We leave these cases aside, noting that when both the PP and the relational adjective modify the noun compositionally, the order in (6d) is ungrammatical. I am particularly grateful to Montserrat Batllori and Avel.lina Suñer for driving my attention to these cases.

B. Non-availability of the prenominal position

Relational adjectives have a pretty fixed position within the noun phrase. Qualifying adjectives can precede the modified noun under specific conditions (Demonte 1999; Bosque 2001; Cinque 1994, 2010), as shown in (14b). This is impossible for a relational adjective such as *biológico* ‘biological’ (15).

- (14) a. una respuesta elegante
 an answer elegant
 ‘an answer that is elegant’
 b. una elegante respuesta
 an elegant answer
 ‘an elegant answer’
- (15) a. un problema biológico
 a problem biological
 ‘a biological problem’
 b. *un biológico problema
 a biological problem

C. Combination of two relational adjectives in the singular with one noun in the plural

A final very significant syntactic property of relational adjectives is noted in Bosque (2006). Consider the contrast between (16a) and (16b).

- (16) a. los embajadores mexicano y argentino
 the ambassadors Mexican and Argentinian
 ‘the Mexican ambassador and the Argentinian ambassador’
 b. *los embajadores elegante y desaliñado
 the ambassadors elegant and scruffy
 Intended: ‘the elegant ambassador and the scruffy ambassador’

What we see in (16) is that two relational adjectives in singular can modify one single noun in plural; in that case they receive a distributive reading, such as that each one of the two ambassadors in the plurality is related to one of the two relational adjectives. It is only relational adjectives that can participate in this construction: qualifying adjectives (16b) produce ungrammatical results.

Bosque (2006) notes that the interpretation of (16a) is the same as in (17).

- (17) los embajadores de México y de Argentina
 the ambassadors of Mexico and of Argentina
 ‘the ambassador of Mexico and the ambassador of Argentina’

Given the standard treatment of *de México* and *de Argentina* in (17) – namely, that they are nominal constituents marked with case, Bosque (2006) concludes that relational adjectives should be viewed as case-marked bare nouns rather than as ‘adjectives’.

Note that in (17) the complement of the preposition is a proper name, so it may be that it contains a Determiner Phrase (Longobardi 1994). This can be shown indirectly not to be the case, through two tests that point to the conclusion that in (17) *de México* contains a bare noun without a determiner. The first one is that the prepositional structure in (17) is not introducing an argument or identify a referent. It defines the type of ambassador that we are talking about. The second reason to think that here we have bare noun phrases and not DPs is that the same possibility emerges with structures containing common nouns without a determiner.

- (18) los formularios de registro y de cancelación
 the forms of registration and of cancelation
 ‘the registration form and the cancelation form’

Bosque’s reasoning is that the construction in (16a) is possible because the relational adjective contains a noun within its structure. In (16a), each one of the nouns marked with genitive contains a singular number feature which is semantically interpretable. Coordination is interpreted as addition of the two members, and given that two singulars form one plural – in the absence of dual as a grammatically marked category, the two constituents can combine with a plural-marked noun and trigger a distributive reading. By parity of reasoning, then, in (16a) we must have nouns carrying prepositional marking. (16b) fails because *elegante* and *desaliñado* are ‘real’ adjectives, and in them the number feature is not interpretable. Consequently, it is impossible to perform an addition operation so that the two singulars together can modify one single noun in the plural.

However, it can be independently shown that the interpretation of (16a) cannot be due to the existence of a noun within the base of the relational adjective. As we will discuss in detail in Chapter 6, §3–§5, deverbal adjectives have a class of relational formations. (19), where two deverbal relational adjectives are coordinated, has the same properties as (16a), but the adjective does not contain any noun on its base.

- (19) a. los sistemas circula-torio y respira-torio
 the systems circulate-TORIO and breathe-TORIO
 ‘the circulatory and the respiratory systems’
 b. los poderes legisla-tivo y ejecut-ivo
 the powers legislate-TIVO and execute-IVO
 ‘the legislative power and the executive power’

Thus, the structure cannot depend on the existence of a nominal base in the adjective. We will argue at the end of this chapter that it directly derives from the presence of a KP in the structure of the adjective.

D. There must be a lexical difference between affixes for relational adjectives and those for qualifying adjectives

Bosque (1993) notes that in some cases, Spanish establishes an opposition through morphological marking between relational adjectives and qualifying adjectives (20).

- (20) a. *energét-ico* ~ *enérg-ico*
 energy-ICO energy-ICO
 ‘related to energy’ ‘energetic’
- b. *paterno* ~ *patern-al*
 paternal father-AL
 ‘related to a father’ ‘like a father’
- c. *caball-ar* ~ *caball-uno*
 horse-AR horse-UNO
 ‘related to horses’ ‘like a horse’

In terms of the most representative affixes for relational adjectives, we can highlight the following: *-al* (and its allomorphs *-ual* and *-ar*, 21a), *-ano* (and *-iano*, 21b), *-ario* (and its allomorph *-tario*, 21c), *-ense* (and *-iense*, 21d), *-eño* (almost completely restricted to demonyms, 21e), *-ero* (21f), *-és* (which only combines with nouns denoting places, 21g), *-ico* (probably the most productive, which triggers stress in the last syllable of the base, 21h) *-ino* (very restricted in the formation of relational adjectives, 21i), *-ista* (21j) and *-oso* (specialised, as a relational adjective suffix, in the technical language of chemistry, 21k).

- (21) a. *abdomin-al* ‘abdomen-AL, abdominal’, *acent-ual* ‘stress-UAL, related to stress’, *bronqui-al* ‘bronchus-AL, bronchial’, *caus-al* ‘cause-AL, causal’, *congres-ual* ‘conference-UAL, related to conferences’, *dent-al* ‘tooth-AL, dental’, *elipsoid-al* ‘ellipsoid-AL, related to ellipsoids’, *man-ual* ‘hand-UAL, manual’, *neuron-al* ‘neuron-AL, neuronal’
- b. *americ-ano* ‘America-ANO, American’, *bacteri-ano* ‘bacteria-ANO, bacterial’, *crane-ano* ‘skull-ANO, cranial’, *hegel-iano* ‘Hegel-IANO, Hegelian’, *pretor-iano* ‘praetor-IANO, praetorian’
- c. *asamble-ario* ‘assembly-ARIO, related to a meeting’, *culin-ario* ‘cooking-ARIO, related to cooking’, *embrion-ario* ‘embryo-ARIO, embryonic’, *estep-ario* ‘steppe-ARIO, related to steppes’, *expedicion-ario* ‘expedition-ARIO, expeditionary’, *inflacion-ario* ‘inflation-ARIO, inflationary’, *planet-ario* ‘planet-ARIO, planetary’

- d. canad-iense ‘Canada-IENSE, Canadian’, castr-ense ‘barracks-ENSE, related to the army’, vanuat-ense ‘Vanuatu-ENSE, related to Vanuatu’
- e. madril-eño ‘Madrid-EÑO, related to Madrid’, niu-eño ‘Niue-EÑO, related to Niue’, nort-eño ‘north-EÑO, related to the north’, velazqu-eño ‘Velazquez-EÑO, related to Velázquez’
- f. aceit-ero ‘oil-ERO, related to oil’, aceitun-ero ‘olive-ERO, related to olives’, aduan-ero ‘customs-ERO, related to customs’, cement-ero ‘concrete-ERO, related to concrete’, corch-ero ‘cork-ERO, related to cork’, pamp-ero ‘pampas-ERO, related to the pampas’
- g. aragon-és ‘Aragon-ÉS, related to Aragón’, cordob-és ‘Cordoba-ÉS, related to Cordoba’, japon-és ‘Japan-ÉS, related to Japan’, montañ-és ‘mountain-ÉS, related to the mountains’, ruand-és ‘Rwanda-ÉS, related to Rwanda’
- h. académ-ico ‘academia-ICO, related to academia’, basált-ico ‘basalt-ICO, related to basalt’, caligráf-ico ‘calligraphy-ICO, related to calligraphy’, farmacológ-ico ‘pharmacology-ICO, related to pharmacology’, filósof-ico ‘philosophy-ICI, philosophical’, menopáus-ico ‘menopause-ICO, related to menopause’, rabín-ico ‘rabbi-ICO, related to rabbis’
- i. and-ino ‘Andes-INO, related to the Andes’, capr-ino ‘goat-INO, related to goats’, equ-ino ‘horse-INO, related to horses’, isabel-ino ‘Isabel-INO, related to Queen Isabel’, matut-ino ‘morning-INO, related to mornings’, neoyorqu-ino ‘New York-INO, related to New York’, sabat-ino ‘Saturday-INO, related to Saturdays’, mar-ino ‘sea-INO, related to the sea’, uter-ino ‘uterus-INO, related to the uterus’
- j. abort-ista ‘abortion-ISTA, related to abortion’, armament-ista ‘armament-ISTA, related to armament’, baloncest-ista ‘basket-ISTA, related to basketball’, conduct-ista ‘behaviour-ISTA, behaviourist’, minim-ista ‘minimum-ISTA, minimalist’
- k. adip-oso ‘fat-OSO, related to fat’, cartilagin-oso ‘cartilage-OSO, cartilaginous’, sulfur-oso ‘sulphur-OSO, related to sulphur’

E. However, it is frequent that the same affix produces both qualifying and relational adjectives

However, this is not the most common situation. In most cases the qualifying interpretation of adjectives that are more frequently used as relational adjectives does not come accompanied by differences in morphological marking (cf. the pairs in 22).

- (22) a. un vino francés
a wine French
- a'. una actitud muy francesa
an attitude very French
'a very French-like attitude'

- b. el ganado bovino
the cattle bovine
- b'. una mirada bovina
a look bovine
'a look similar to a cow's'
- c. un problema económico
a problem economic
- c'. un precio muy económico
a prize very economic
'a very cheap prize'

In fact, most of the affixes used for relational adjectives can also produce different types of qualifying adjectives, such as possessive and similitudinal (cf. Chapter 4). (23) presents a few qualifying adjectives produced with each one of the most frequent remaining relational adjective affixes cited in (21) above.

- (23) a. celest-ial 'heaven-IAL, heavenly', fenomen-al 'phenomenon-AL, phenomenal', natur-al 'nature-AL, natural', monac-al 'monk-AL, monk-like', pasion-al 'passion-AL, that has passion'
- b. campech-ano 'Campeche-ANO, easy-going', espart-ano 'Sparta-ANO, Spartan', lej-ano 'away-ANO, far', maratón-iano 'marathon-IANO, long'
- c. cavern-ario 'cavern-ARIO, primitive', revolucion-ario 'revolution-ARIO, revolutionary', millon-ario 'million-ARIO, that has a lot of money'
- d. circ-ense 'circus-ENSE, circus-like', hollywood-iense 'Hollywood-IENSE, typical of Hollywood'
- e. aguil-eño 'eagle-EÑO, eagle-like', halag-üeño 'flattery-EÑO, flattering', hogar-eño 'home-EÑO, homely', navid-eño 'Christmas-EÑO, Christmas-like', risu-eño 'smile-EÑO, smiling'
- f. barriobaj-ero 'suburbs-ERO, typical of the slums', chapuc-ero 'botch-ERO, shoddy', cuartel-ero 'barracks-ERO, typical of the soldiers', festival-ero 'festival-ERO, festival-lover', friol-ero 'cold-ERO, sensitive to the cold', guerr-ero 'war-ERO, aggressive'
- g. barbár-ico 'barbarian-ICO, barbarian', camaleón-ico 'chameleon-ICO, chameleon-like', dogmát-ico 'dogma-ICO, dogmatic', dramát-ico 'drama-ICO, dramatic', hero-ico 'hero-ICO, heroic'
- h. cristal-ino 'glass-INO, crystal-like', dañ-ino 'damage-INO, damaging', div-ino 'god-INO, divine', lucifer-ino 'Lucifer-INO, lucifer-like', puebler-ino 'country-INO, rustic'
- i. cuentista 'tale-ISTA, liar', ideal-ista 'ideal-IST, idealist', partid-ista 'party-ISTA, party-supporter'
- j. ambici-oso 'ambition-OSO, ambitious', crem-oso 'cream-OSO, creamy', preci-oso 'prize-OSO, precious', sed-oso 'silk-OSO, silky', sigil-oso 'stealth-OSO, stealthy'

F. And at least there are two affixes that only produce relational adjectives

There are just a few affixes that only produce relational adjectives. To the best of our knowledge, *-és* does not produce adjectives that are only interpreted as qualifying adjectives, but this could be because the affix is specialised almost exclusively in demonyms – which we have just seen can be reinterpreted as the sets of characteristic properties associated to a particular nation anyway, (22a'). However, the affixes *-ístico* or *-ical* are only attested in relational adjectives even though they are not specialised in demonyms.

G. Relational adjectives express underspecified relations between two types of entity

The main semantic property of these adjectives is that relational adjectives do not describe qualities of the modified noun, but express different types of relations that the modified noun establishes with objects belonging to the class denoted by the base of the relational adjective. For instance, in (24) the interpretation is that there is an art that relates in some way to hands, specifically that the arts are of the type that is performed using the hands of a craftsman.

- (24) arte man-ual
 art hand-UAL
 'hand-made art'

Thematic roles such as agent, patient or beneficiary express relations between eventualities and participants in those eventualities (Montague 1970; Dowty 1979). As such, the relations expressed by relational adjectives include the relevant theta-role interpretations. For this, the noun must be at least interpretable as denoting an event itself (Grimshaw 1990).

- (25) a. la invasión alemana de Italia
 the invasion German of Italy
 'the German invasion of Italy'
 b. la producción mader-era de Italia
 the production wood-ERA of Italy
 'the production of wood by Italy'
 c. unas donaciones mari-anas
 some donations Mary-ANAS
 'some offerings to the Virgin Mary'

It is customary since Bosque (1993) to refer to the interpretations in (25) as 'thematic relational adjectives', while the one in (24) – and in (26), that is, in any case where the adjective accompanies a noun that does not denote an eventuality – are

called ‘classificatory relational adjectives’, because in the absence of a plausible thematic interpretation the relation denoted by the adjective is taken to define a taxonomy of the notion expressed by the noun: different classes of the entity, defined by their relation to other types of object.

- (26) a. una mesa diechioch-esca
 a table eighteen-ESCO
 ‘a table from the 18th Century’
 b. una bomba atóm-ica
 a bomb atom-ic
 c. un compuesto orgán-ico
 a compound organ-ic

Representation nouns such as *biografía* ‘biography’, *novela* ‘novel’, *película* ‘movie’ or *escultura* ‘sculpture’ allow an agent-like interpretation of *de*-marked modifiers as the author of the representation (27a), and as such it is also possible to interpret the relation expressed as agent-like with such nouns (27b).

- (27) a. la poesía de Quevedo
 the poetry of Cervantes
 ‘Cervantes’ poetry’
 b. la poesía queved-iana
 the poetry Quevedo-IANA
 ‘the poetry by Quevedo’

When the two interpretations – classificatory and thematic – combine within the same phrase, the tendency is that the thematic interpretation is external to the classificatory one (cf. Bosque 1993, 28a). However, there are cases where the order is more variable (28b, 28c), so this is at best a tendency that does not seem to be a property that grammar defines within its configuration.

- (28) a. la invasión naval italiana de Francia
 the invasion boat-AL Italian of France
 ‘the Italian invasion of France by boat’
 b. la producción man-ual cest-era
 the production hand-UAL basket-ERA
 ‘the production of baskets by hand’
 c. la producción cest-era man-ual
 the production basket-ERA hand-UAL
 ‘the production of baskets by hand’

It is generally accepted that the relation that the relational adjective expresses should be general and underspecified along the lines of Downing’s (1977) R-function. This would explain three facts that have frequently been noted for relational adjectives

in the literature: (i) that the thematic or classificatory reading largely depends on the meaning of the modified noun; (ii) that one and the same relational adjective can express a wide-range of relations without change in morphological marking (cf. 29, for instance); (iii) that the range of interpretations that relational adjectives express is as wide as those that compounds involving two nouns have in English, where the same function has been argued to be present.

- | | | |
|---------|--|----------------|
| (29) a. | la guerra colonial
the war colonial
'the war at the time of the colonies' | <i>TIME</i> |
| b. | la capital colonial
the capital colonial
'the capital in the region of the colonies' | <i>PLACE</i> |
| c. | la insurrección colonial
the insurrection colonial
'the insurrection by the colonies' | <i>AGENT</i> |
| d. | la política colonial de América
the politics colonial of America
'America's politics about the colonies' | <i>MATTER</i> |
| e. | el ansia colonial
the will colonial
'the lust of having colonies' | <i>PURPOSE</i> |

Rainer (2013) nuances this claim in two senses that do not invalidate the previous claim. In some cases the range of readings can be restricted given the existence of a competing form including a more specialised suffix, such as *-ífico* for causative readings (cf. Chapter 5, §1.1, where we argue that causative adjectives are qualifying, cf. *terror-ífico* 'terror-IFICO, terrifying'). Second, some conceivable relations, such as privation ('without X') are expected to be absent from relational adjectives, as well as from N-N compounds, due to general cognitive principles: nouns come with a presupposition of existence, and as such the privative reading is not salient without explicit marking.

Importantly, this classificatory function – expressing sub-kinds of the head noun – is shared, again, with bare nouns marked with a preposition (30). Note that these nouns tend to come with the preposition *de* 'of', the most underspecified one in Spanish, and the interpretation is again variable depending on the meaning of the head noun and the meaning of the noun introduced by the preposition.

- | | | |
|---------|---|----------------|
| (30) a. | casa de veraneo
house of summer-vacation
'summer house' | <i>PURPOSE</i> |
|---------|---|----------------|

b.	casa de madera	<i>MATTER</i>
	house of wood	
	'wooden house'	
c.	reloj de pared	<i>PLACE</i>
	clock of wall	
	'timepiece'	
d.	programación de tarde	<i>TIME</i>
	programme-planning of afternoon	
	'afternoon programme planning'	
e.	escritor de poesía	<i>PATIENT</i>
	writer of poetry	
	'poetry writer'	

Thus, we see that there are plenty of properties of relational adjectives that are shared with prepositionally-marked bare nouns: the absence of gradability, under-specified semantic interpretation, role in defining taxonomies, position internal to 'real' adjectival modifiers, free ordering possibility with respect to each other, the behaviour in coordination, etc. Our starting point in the analysis that we will undertake in §3 is that relational adjectives are bare nouns introduced by a defective prepositional structure where only KP is present.

H. Not being anchored to a dimension, relational adjectives reject degree modification

Relational adjectives, unlike (most) qualifying adjectives, reject degree modification (31), even in comparative structures (31c). Apparent cases of comparative structures involving relational adjectives (31d) are actually what Pinkham (1982) calls 'metacomparative structures', where one makes a claim about how appropriate it is to characterise the problem as related to society or politics.

- (31) a. *un edificio {muy / un poco / bastante} francés
 a building very a little quite French
- b. un edificio {muy / un poco / bastante} elegante
 a building very a little quite elegant
- c. #Este edificio es más francés que aquel.
 this building is more French than that
 Intended: *'This building is more French than that one'
- d. Este problema es más político que social.
 this problem is more political than social
 'This problem is political rather than social'

The appropriateness of the relation established between the relational adjective and the base noun can also be modified through proportional adverbs (32), triggering the reading of whether the only relevant relation is the one expressed by the relational adjective (32a), or whether there are other relevant relations (32b) (cf. Fábregas 2015).

- (32) a. un problema {completamente / totalmente / enteramente} político
 a problem completely totally entirely political
 b. un problema {parcialmente / en parte} político
 a problem partially in PART political

To this absence of degree modification, we add the fact – unsurprising taken out of context, but significant in this context – that classifying PP modifiers cannot combine with degree – unless they are recategorised as expressing prototypical properties.³

- (33) a. *un ladrón muy de joyas
 a thief very of jewels
 b. *una casa muy de madera
 a house very of wood
 c. *un reloj muy de pared
 a clock very of wall

This in fact connects with the following property: relational adjectives are non-scalar, that is, they do not express a set of ordered values within a scale, because they just denote an underspecified relation that is not anchored to a specific conceptual dimension.

I. Relational adjectives also lack polar oppositions

That relational adjectives express relations, and not qualities, is related to the impossibility of combining degree modifiers with these adjectives, as has been mentioned already. It also explains that relational adjectives lack polar oppositions (34), as noted in Bortolotto (2016). Many qualifying adjectives can be negated, but this is not the case with relational adjectives for the same reason.

3. Consider, for instance, the interpretation of *una casa muy de veraneo* ‘a house very of summer-vacation’: it would imply taking the relation with ‘summer-vacation’ as a set of prototypical properties exhibited by the houses that are used for summer holidays. Their location, whether they have a swimming pool or not, or the areas that can be used for barbecuing are properties that come to mind in this respect.

- (34) a. elegante ~ inelegante
 elegant in-elegant
 b. alto ~ bajo
 tall short
 c. útil ~ in-útil
 useful useless
 d. político ~ ??
 political
 e. español ~ ??
 Spanish
 f. biológico ~ ??
 biological

J. Relational adjectives express relations between kinds of entities

This does not mean that relational adjectives are necessarily not intersective modifiers. As we advanced in §3, McNally and Boleda (2004) have argued that relational adjectives express properties of kinds, and should be interpreted as defining taxonomies of the kinds denoted by the modified nouns. Notice, in this sense, that the most natural interpretation of a relational adjective when it is derived from a common noun is a kind-one. In *producción manual* ‘manual production’ we do not talk of specific hands, but of a kind of entity that is ‘hand’. When the relational adjective is interpreted as relating the modified noun to a specific entity, it is because of one of the following two conditions: (i) either the meaning of the base noun, typically a proper name, conceptually expresses an entity that we know exists (35), or (ii) contextually, the specific interpretation is favoured.

- (35) a. francés (Francia ‘France’)
 French
 b. italiano (Italia ‘Italy’)
 Italian
 c. cervantino (Cervantes)
 Cervantes-INO,
 ‘related to Cervantes’

Among the contextual factors, the number and definiteness of the whole noun phrase where the relational adjective is embedded seems to play a role. Conceptually, we know that at a given point in time, there is one specific individual that acts as the president of a particular political unit, but whether *presidencial* ‘presidential’ is interpreted as relating to a specific president or not depends largely on the definiteness

of the noun phrase: (36a) – singular, definite and within a statement that cannot be interpreted as generic – favours a specific interpretation, while (36b) – plural and within a generic statement – favours a non specific one.

- (36) a. La decisión presidencial molestó a la oposición.
the decision presidential bothered ACC the opposition
‘The decision of the president bothered the opposition’
b. Muchas decisiones presidenciales son polémicas.
many decisions presidential are controversial
‘Many decisions taken by presidents are controversial’

K. Relational adjectives produce bracketing paradoxes

A final (semantic) property of relational adjectives is that it is possible to subordinate one relational adjective to another, producing what has been interpreted within lexicalist accounts as bracketing paradoxes (Williams 1981a; Sproat 1984, 1985; Pesetsky 1985; Beard 1993). Consider (37):

- (37) a. un estudio físico nuclear
a study physics-ICIO nuclear
‘a study in nuclear physics’
b. un texto latinista vulgar
a text latinist vulgar
‘a text related to Vulgar Latin’

Given the interpretation of (37a) and (37b), the structure should be as in (38a), where the second relational adjective modifies the first one, not as in (38b), where each one of them modifies the head noun – quite simply, because from (37a) it does not follow that the study is nuclear, or from (37b) that the text is vulgar.

- (38) a. [un estudio [físico [nuclear]]]
b. [un estudio [físico] [nuclear]]

(38a) is surprising for an adjectival structure; however, it is the same relation that we would obtain if we had expressed the relevant relations through a prepositionally-marked noun phrase, as then the first relational adjective contains a noun that can, in turn, be modified by a prepositional phrase. The equivalence is in some cases exact (39).

- (39) un estudio [de física [de núcleos]]
a study of physics of nuclei

3. Analysis: Relational adjectives as incomplete prepositional phrases

Given the previous discussion, there are several facts that we believe an account of the internal syntactic structure of relational adjectives has to meet: first of all, that in many respects relational adjectives have the properties that one should expect from classifying prepositionally-marked noun phrases; second, that the same morphological make-up of relational adjectives can typically also be used for qualifying adjectives, either because the affixes involved produce them productively or because the resulting formations can be used both as relational and qualifying. Our account will be that relational adjectives are nouns combined with prepositional structures. Moreover, we will argue that relational adjectives and qualifying adjectives correspond to essentially the same configuration, only that qualifying adjectives add additional prepositional layers that relational adjectives lack.

But before we do that let us take a step back and consider a basic question: why should relational adjectives exist? Relational adjectives are members of a class ‘adjective’ whose bizarre properties include being unable to combine with the standard functional structure of their class, degree. In the verbal domain, there is simply no case of verb that fails to combine with the functional structure of the class: no verb – even a light verb or a copulative verb – fails to combine with tense or aspect if the language overtly marks such oppositions. Even English auxiliaries, notorious for their imperfect verbal morphology, allow some oppositions (*can / could, may / might, will / would, shall / should...*), and we know of no Spanish verb that cannot at least combine with past tense. The same can be said about nouns: any noun can combine with quantifiers and determiners; some nouns reject some specific quantifiers, for instance because they are not count, and some nouns cannot take plural due to the same reason, but all of them can combine with at least some quantifiers. However, in the adjectival domain there is a productive class that systematically fails to combine with degree. Why? The analysis that we present now is our answer to why relational adjectives should exist.

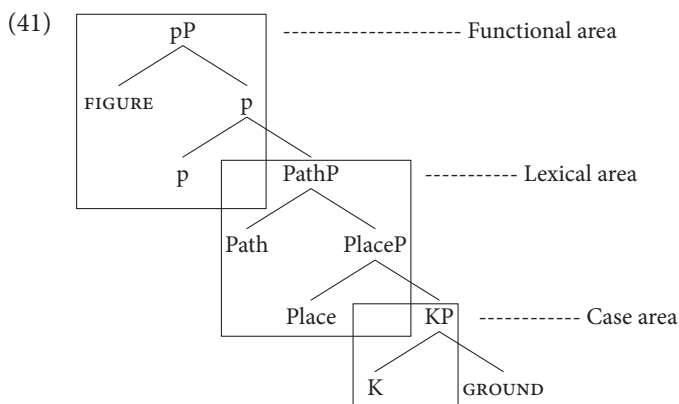
3.1 The internal syntactic structure of relational adjectives

This analysis takes as its starting point the fact that relational adjectives are similar to bare nouns introduced by *de* ‘of’ (40), and like them express relations of kinds of objects with other kinds of objects. This implies treating classificatory relational adjectives as the basic ones, and deriving from them thematic relational adjectives only to the extent that the head noun they combine with licenses theta-roles as some of the possible interpretations of the relations denoted.

- (40) un ladrón de joyas
 a thief of jewels
 ‘a jewel thief’

Remember that relational adjectives and bare noun-PPs have the same basic distribution (Property A in §2), both express underspecified relations between the nouns in their base and the head noun (Property G in §2), and both reject degree modification (Property H).

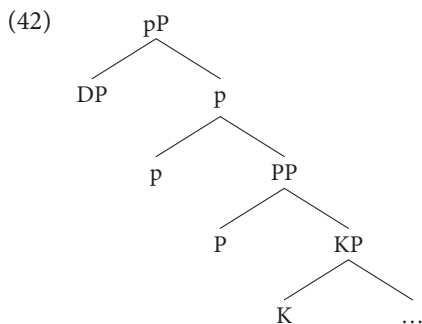
The type of constituent that relational adjectives relate with given their grammatical properties is overtly introduced by a preposition. Relational adjectives express relations, and of course relations are the basic semantic entities that prepositions express in most theories (Hale & Keyser 1993, 2002; Klein 1994). Thus, the obvious candidate to account for the properties of relational adjectives is a prepositional structure. Our starting point for such structure is Svenonius’ (2010) decomposition of the prepositional area in layers, which is presented in a simplified manner in (41, 2010: 134).



Notice first that Svenonius (2010) makes a specific proposal just for spatial prepositions, and as such some of the labels used directly anchor the structure to the cognitive dimension of space. The main intuition of this proposal is that prepositions involve three types of layers: first, a case phrase (KP) that – in the case of spatial prepositions – turns its complement from denoting an entity to denoting a region which can be interpreted in a spatial context. Second, there is a lexical layer with strong conceptual semantics, which in the case of spatial prepositions can involve two main layers: one layer denoting a spatial location (PlaceP), and a second layer – only present in directional prepositions – that defines a trajectory that uses the place as a reference point (PathP). Finally, the third layer is a functional one, pP, whose role is to introduce the subject of the spatial relation, the figure (Talmy

1985). We are abstracting away from other available heads which are orthogonal to our purposes in this context, such as the Axial Part (cf. Svenonius & Roy 2008) and the degree modifiers that the lexical area can be dominated by.

If we abstract away from the cognitive dimension of space so that the account can be extended to all types of prepositions, the structure can be represented as (42).



That is: a functional head introducing a specifier, which takes a lexical head (possibly, a sequence of lexical heads) as its complement, and a case projection at the bottom. Of particular relevance for our analysis is how this case projection should be interpreted. Remember that we assume here that inherent case should be treated along the lines of Fillmore (1968). In this general view, case projections are linkers that allow individuals to be related to arguments (cf. Caha 2009; Starke 2014) (Chapter 1, §3.1). By virtue of being introduced by KP, the complement of K, whatever it might be, becomes a relational entity that needs to associate to another entity. In the case of spatial Ps this relation is interpreted as ‘region-of’ simply because the conceptual content of the P area is spatial. If we remove this conceptual flesh, we are left with the observation that the KP turns its nominal complement into an entity that must establish a particular type of relation. We will represent this relation as R, following Downing’s (1977) convention so that it is defined independently of the conceptual domain to which it will associate. The PP area, when present, will give conceptual content to the R relation. If the PP area is spatial, R will be interpreted as regions of the object (43a); if it is temporal, R equals temporal intervals and points (43b); if it is a preposition expressing cause, R equals the teleological properties of the entity introduced as the ground (43c), etc.

- (43) a. en la casa
in the house
b. durante la cena
during the dinner
c. por el frío
due-to the cold

Finally, the functional pP layer provides the syntactic space to introduce the second member of the relation introduced by KP⁴ and given conceptual content by PP.

Given the properties of bare noun-PP structures that we have seen – establishing an underspecified relation between two objects in order to define a taxonomy, it is immediately clear that within this framework they should be viewed as projections of KP. If the preposition corresponded here to a lexical P head, then the relation would already have been specified, and this is not the case (remember 29 above). However, it is possible to give an independent argument that *de* ‘of’ is the materialisation of the KP structure when it is spelled out independently of the PP layer.

Svenonius (2010) has argued for the existence of an additional projection, Axial Part, which is sometimes present in the prepositional domain. The Axial Part is a projection that – in the case of spatial prepositions – takes the region defined by the Ground object and delimits it to a particular subregion. They are projected between the PP layer and the KP layer. In English, the Axial Parts tend to be grammaticalised nouns expressing areas (44).

(44) [PlaceP *in* [AxPartP *front* [KP *of* [DP *the house*]]]]

The presence of the Axial Part between PP and KP triggers, as we see, a spell out of KP as a distinct element, allowing us, therefore, to evaluate which exponent is used for KP alone. Consider now (45), for Spanish (cf. Fábregas 2007b).

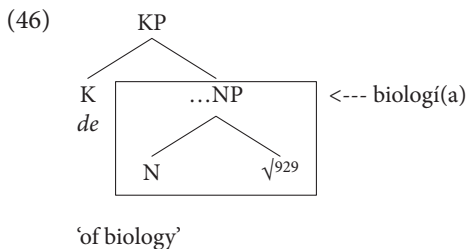
(45) a. [PlaceP *en-* [AxPP *cima* [KP *de* [DP *la mesa*]]]]
 on top of the table
 b. [PlaceP *de-* [AxPP *bajo* [KP *de* [DP *la mesa*]]]]
 be- low of the table

KP is spelled out as *de* ‘of’, which is of course the most underspecified preposition in Spanish. Thus, we have independent evidence that bare noun-PPs are KPs.

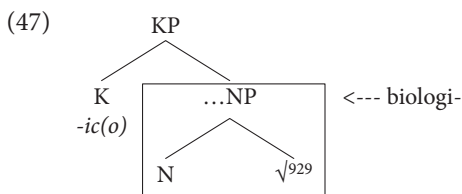
4. The claim that in *de joyas* ‘of jewels’ *de* ‘of’ corresponds to case might be questioned by the impossibility of substituting that constituent with a possessive *su* ‘his / her / their’. Notice, however, that there must be determiner features within the feature endowment of the possessive, given that it is interpreted as a participant and it can make a noun phrase definite (i).

(i) *su casa*
 his house

We claim that the substitution for the possessive is impossible because the structure lacks the DP layer, not because the preposition does not correspond to case.



With this background in mind, the structure that we propose for relational adjectives is essentially the same as (46): relational adjectives behave as bare-NPs with a semantically weak preposition and express underspecified relations between two kinds. The difference between bare NPs with prepositions and relational adjectives is, in our account, essentially morphophonological: the exponent used in KP is different, and the ordering between the exponents is also different.⁵ (47a) illustrates the syntactic structure, and (47b) the semantic denotation of K as a head that expresses an underspecified relation R between the base (x) and the modified noun (y). For completeness, (47c) gives the denotation of *biological*, where the NP base has already satisfied x and the whole adjective expresses a relation with 'biology' whose second argument will be the modified noun (y). For the index carried by the root, remember (Chapter 1, §2) that we follow Borer (2013) in treating roots as phonological indexes.



- a. $[[K]] = \lambda y \lambda x \lambda R [R(x, y)]$
- b. $\lambda y \exists R [R(x, y) \ \& \ \mathbf{biologi}'(x)]$

The relational affixes – here represented by *-ico* – spell out KP. The representation in (47) is an incomplete prepositional structure without a conceptual dimension that specifies the content of the relation expressed by K. Notice that we are also proposing that there is an incomplete nominal structure below KP in this case: the noun does not project layers that are otherwise projected in the equivalent determinerless PPs they are similar to, such as number (NumP) and the head responsible for

5. In this structure, we have to assume type-shifting of NP from the regular denotation as a predicate ($\langle e, t \rangle$) to an individual ($\langle e \rangle$) to compose with the case projection with the denotation we specified in §1.4 above.

determining whether a noun is mass or count (ClassifierP, following Borer 2005).⁶ As we proceed (see in particular §5.3) we will see that there is no independent syntactic or semantic evidence that number and the mass-count distinction are present within the structure of the relational adjective.⁷

What makes a qualifying adjective different from a relational one? We have seen that qualifying adjectives can intervene in polar oppositions, allow degree and in short can be used as predicates of the noun they modify. They carry conceptual content: if they derive from nouns, some express possession (48a, cf. §1), some express similarity (48b, cf. §2), others express causation (48c, cf. Chapter 5, §1), others tendency or propensity (48d, cf. Chapter 5, §2), among other less common interpretations.

- (48) a. narig-udo
nose-UDO
'big-nosed'
b. leon-ado
lion-ADO
'lion-like'

6. In contrast, when the structure is expressed with *de* 'of', the noun can at least project number: *de joya-s* 'of jewels'. We will get back to the relation between an impoverished structure of the base and affixal marking in the last chapter of the book.

7. The fact that the functional structure of the base is impoverished when the materialisation of a constituent is a 'word' is one of the most puzzling aspects of structure building for any Neo-Constructionist theory of morphology. We do not claim to have a full answer for why bases cannot project a full functional structure when the materialisation of the higher layers is a suffix. Different types of considerations can be made. A possible idea is that affixes are after all clitics, and the presence of too much functional material between the lexical base and the affix might impede that the appropriate relation is established between the two of them. This would be a specific subcase of Baker's (1988) ban on incorporation through functional heads, but note that at least in the case of nominalisations it has been proposed that the verb can project some functional material (cf. Alexiadou 2001, for instance). It is also conceivable that heads that spell out as affixes have selectional restrictions that force them to select lexical elements (under certain conditions), but that is essentially stating the fact as a principle without explaining why word affixes behave like that. Here we will accept that the functional impoverishment of the base of a word is a fact for which we still lack a full explanation, and will offer a brute force implementation. We will propose that the KP layer corresponding to genitive is spelled out as *de* 'of' in the elsewhere case, and as a relational adjective affix when the complement is specifically NP, thus merely providing a simple representation of the empirical pattern, and (sadly) acknowledging that we lack an explanation for why such alternation should exist.

- (i) K ---> *-ico, -ense...* / ____ NP
---> *de* / Elsewhere

- c. angusti-oso
stress-OSO
'stressful'
- d. chocolat-ero
chocolat-ERO
'chocolate-lover'

As we have already advanced, these differences can be conceived of as effects of the qualifying adjective having conceptual content that specifies the type of relation through the presence of P above K: a relation is an all-or-nothing concept that one either has or does not have. Having something, looking like something, producing something or liking something have a stronger conceptual content, and provide conditions that are compatible with gradation: does an entity have more or less of that something? Is the resemblance strong or weak? Is the entity more or less likely to produce something, and if it produces it, how much of it would be produced? Does the entity like something a lot, or just a bit? Polar oppositions follow from here, because (some) concepts can have a polar opposite. Finally, with respect to why qualifying adjectives can be predicates, the answer is that the presence of conceptual content gives sufficient semantic information for them to define predicates: KP merely expresses that the base should establish a relation with other entities.

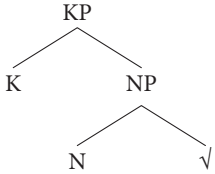
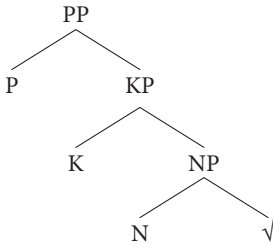
Thus the analysis must be able to explain not only why relational adjectives and qualifying adjectives are so different in some respects, but also why they are so similar in the crucial sense that the same affixes that produce one class typically also produce the other.

We propose a simple way of satisfying the two requisites at the same time. Qualifying adjectives contain the same projections as relational adjectives – hence, the deep relation between the two – but add some additional layers that relational adjectives lack. Once that we have established that relational adjectives are projections of KP, a head from the prepositional domain, this implies that the extra layers projected by qualifying adjectives must be the layers that dominate KP.

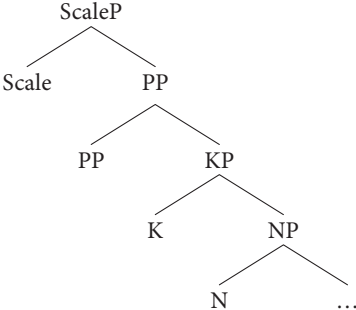
In the analytical framework adopted, this means that qualifying adjectives project at least the PP layer.⁸ (49a) is thus the structure of a relational adjective; (49b) is the structure of a qualifying adjective. They are differentiated solely because the qualifying adjective also projects the lexical layers of the prepositional structure.

8. From now on in the book we will purposefully use the label PP as a term that represents both the lexical PP layer and the P(roperly) interpretation that this layer adds in determining the specific relation R expressed by KP.

The lexical layer P is, semantically, a predicate over relations that predicates from from the relation R introduced by K (49c) a set of properties (49d).

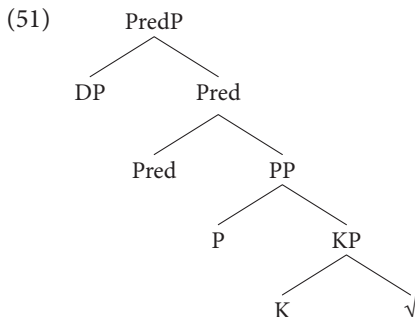
- (49) a.
- 
- b.
- 
- c. $[[K]] = \lambda y \lambda x \lambda R [R(x, y)]$
- d. $[[P]] = \lambda R [P(R)]$

The lexical PP layer is itself complex, as we have seen. The property that names the conceptual dimension of the relation is introduced by the equivalent of PlaceP, while PathP is projected syntactically in Spanish as the ScaleP (remember Chapter 2, §5).

- (50)
- 

We now have an immediate answer to the question of why relational adjectives cannot be scalar: as in the prepositional domain, where these heads are taken from, Paths cannot be defined unless a Place is also defined. Relational adjectives lack the whole lexical PP structure, meaning they do not project the equivalent of PlaceP, and because of this the scale cannot be projected.

Beyond this, qualifying adjectives are predicates. We propose – following Baker’s (2003) modification of Bowers (1993) – that the PP constituent becomes a predicate through addition of Pred(ication)P, which provides the syntactic space for the subject of the adjective.⁹



Then, relational adjectives would be deficient prepositional structures where only the head expressing R is present; qualifying adjectives are lexical prepositional structures, and when they are embedded under PredP they become equivalent to full prepositional structures projecting up to pP.

This minimal difference explains several of the properties noted in §2.

- a. Why do relational adjectives denote relations between two kinds of entities (property J)? In our account this is a combination of two factors: i) that the base that the KP combines with is an NP, which denotes a kind, and that K expresses a relation. The relation with a kind is what defines a sub-kind of the kind denoted by the head noun. The relation-between-kinds interpretation partially explains also the syntactic position (Properties A and B), although for that one has to make assumptions about the syntax of modifiers, which we will make explicit in §3.3.

9. Two observations are in order. First of all, note that – if we take the PP layer to correspond to what is normally analysed as an adjective – this configuration is abstractly the same one that Hale and Keyser (2002) propose for adjectives: the ‘adjective’ is the complement of a head that introduces its subject, in this case PredP.

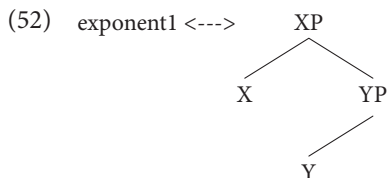
Second, the structure is only minimally different from the one proposed in Svenonius (2010), where the PP layer is dominated by a functional projection pP that provides the syntactic space for the subject of the relation denoted by the PP. Whether this structure is syntactically identical to a full prepositional phrase or not depends on our theoretical assumptions about how under-specified syntactic categories should be. They are the same if one adopts the view that a syntactic head that introduces both a specifier and a complement belongs to a superclass ‘relational head’ (Klein 1994). Any morphophonological or semantic difference between types of relational head would then be dealt with at the interfaces, as Wood and Marantz (2016) propose. In Wood & Marantz (2016), prepositions, applicative heads and little *v* heads are different PF and LF manifestations of the same relational head, *iotta*. If we adopt this view, then (72) is equivalent to (58).

- b. Why is the relation underspecified and dependent on the semantics of the head noun (property G)? Because PP is not merged above KP, and the role of P is precisely to give conceptual content to the relation expressed by K. The relation picked is left to the conceptual semantics of the head noun: if thematic relations are available in its denotation, they can be picked by the relational adjective.
- c. Why are relational adjectives non-scalar, reject degree and lack polar oppositions (properties H and I)? Because they lack P, and as such there is no conceptual dimension that gives content to the relation. As a scale introduces an ordered set of values within a dimension (see Klein 1991 for detailed discussion), when this dimension is missing it is impossible to define an ordered set of values, and therefore there is no scale.
- d. Why are relational adjectives similar in their distribution to classifying PPs, in terms of adjacency to the head noun, absence of a prenominal position and their denotation as defining sub-kinds through an underspecified relation? Because...?

3.2 The spell out of the structure: Phrasal Spell Out and the Superset

In our account, some of the properties follow not directly from the structure, but from the properties of the spell out procedure. A central property of relational adjective suffixes (Property D) is that, even if some affixes typically create relational adjectives, most of them can also build qualifying adjectives (Property E). There are only a few exceptions: for instance, *-ical*, which only produce relational adjectives (Property F). The account must also explain this property.

Remember that we are adopting a Neo-Constructionist system where spell out is postsyntactic, and specifically we are adopting the technology of nanosyntax (Chapter 1, §2). In this system without fusion, the synthetic manifestation of two or more syntactic heads in one exponent follows from Phrasal Spell Out: an exponent can have a lexical entry associated to a phrase.



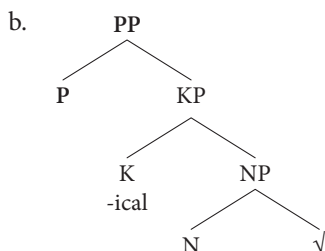
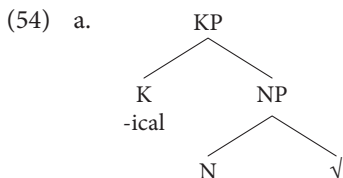
Remember also that nanosyntax assumes the Exhaustive Lexicalisation Principle, which dictates that all features contained in the syntax must be identified by a lexical item. This means that an exponent like the one we have just introduced in (52) can spell out a structure with X and Y where the two heads form a syntactic constituent, but an exponent like (53) would not be able to do so, because nanosyntax has no

procedure to remove heads or features from syntax previous to lexical insertion. (53) would be restricted just to configurations where only Y, and not X, are present.

(53) exponent2 <--> X

Remember also that given the Superset Principle, an exponent can also spell out structures that correspond to a subconstituent within its lexical entry. The exponent 1 in (52), thus, could also spell out Y without X in conditions where lexical competition is superseded, but not vice versa, the exponent 2 could never spell out a configuration with both X and Y.

Let us see how these assumptions about spell out account for the choice of affix and the relation between relational and qualifying adjectives. Given the Superset Principle – an exponent can be introduced to spell out a constituent that has a subset of the features it contains in its lexical entry (Chapter 1, §2.3) – and the Exhaustive Lexicalisation Principle – every feature in the syntactic representation must be identified by an exponent, we predict precisely this pattern. The exponent *-ical* can only produce relational adjectives (property F). In our analysis the reason is that this exponent only spells out the KP layer in its lexical entry. It cannot, therefore, be introduced in the configuration of a qualifying adjective because then the PP layer is not spelled out, against the Exhaustive Lexicalisation Principle.

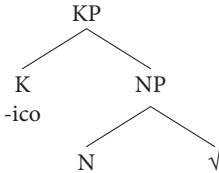


c. *-ical* <---> K

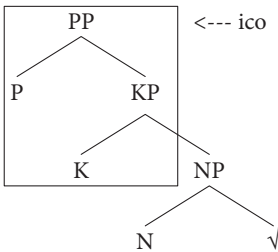
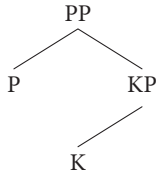
We could ask why there are so few exponents that only spell out K. Note that even *-és* (*franc-és* ‘French’) produces adjectives that can be recategorised as qualifying adjectives, which in our account means that it can also be introduced in structures with PP, meaning that it can also spell out P. In our account this can only be a lexical accident: the exponent entries overwhelmingly associate the affix to both K and P.

An exponent like *-és*, *-oso* or *-ico*, which produce both relational and qualifying adjectives (Property E) spells out PP and KP, so it can be used for a qualifying adjective and, by the Superset principle, be introduced to spell out just KP, which is a subconstituent within its lexical entry.

(55) a.

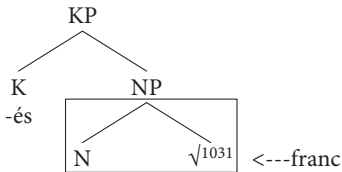


b.

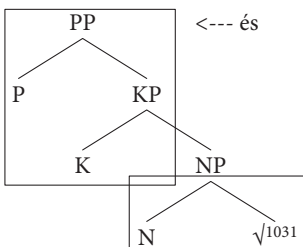
c. *-ico* <--->

The relational reading of an adjective like *francés* is differentiated from the qualifying reading of the same adjective by the structure, not the semantics.

(56) a.



b.



In short, what we propose here is a strong argument that all denominal adjectives are prepositional structures, by transitivity. Relational adjectives behave syntactically and semantically like a particular type of prepositional phrases with classificatory function. The suffixes that produce relational adjectives almost always also produce qualifying adjectives, which, in any framework that takes seriously the idea that the lexical entry of a suffix should be as stable as possible and account for its uses across domains, must mean that relational adjectives and qualifying adjectives share significant structural properties.

This is the core of our analysis, but this does not exhaust the whole range of properties explained in §2. In §5, we will go through the remaining properties, which require additional assumptions about the external syntax of modifiers, but before we will briefly compare our analysis with other proposals.

4. Previous analyses of the internal structure of relational adjectives

As a comparison with our analysis, we will provide a short overview of the previous existing analyses of these objects through a discussion of some representative examples.

The accounts of relational adjectives differ in two parameters: whether they are essentially different from qualifying adjectives, and whether the proper level of grammar to analyse the differences is semantics or syntax.

The discussion of the first parameter is pretty straightforward, in our opinion. Warren (1984), Nowakowska (2004), Fradin (2008) and Bisetto (2010) are examples of authors that have argued – based on the existence of two readings, one relational and one qualifying, for adjectives such as *francés* ‘French’ – that relational adjectives should not be viewed as essentially different from qualifying ones. In their view, the difference emerges at a semantic level – in some cases, even a pragmatic level where context is crucial, depending on whether the adjective is taken to mean the relation to a class, or to the set of prototypical properties of that class. When *francés* is interpreted as relational, it expresses a vague relation with France, and when it is interpreted as qualifying, it emphasises the existence of some prototypical properties of Frenchness that world knowledge and the encyclopaedic semantics will define. While rejecting or accepting this view has to do with the theoretical assumptions that one makes about the role that semantics might play in determining the grammatical behaviour of constituents, we believe that it is a difficult position to maintain independently of any theoretical preference, for two reasons. Only relational adjectives can be coordinated in singular to modify a single noun in the plural, and only relational adjectives can be subordinated one to the other. It is difficult to see how a semantic interpretation based on world knowledge can

give account of these formal facts, at least without further stipulations that at this point are unclear to me. For this reason, we will leave these theories aside and concentrate on accounts that provide a specific implementation of how the two types of adjectives are distinguished formally.

Moving now to the second parameter, a few theories treat the difference between relational and qualifying adjectives as a matter of semantics. Lieber (2004: 39–40) proposes that affixes that produce relational adjectives are characterised by the same template as those that produce qualifying adjectives. Their template defines a non-dynamic entity from their bases (57).

(57) [–dynamic ([], <base>)]

From this perspective, Lieber (2004) is among the theories that deny the existence of a real distinction between the two classes. An explicit proposal about the difference between the two classes of adjectives is discussed in Lieber (2015: 365–368). For Lieber (2015), the minimal difference between the two sets – focusing on denominal qualifying adjectives – is related to scalarity (remember that relational adjectives reject degree and do not produce polar oppositions). (58a) is the semantic template associated to denominal qualifying adjectives, while (58b) is the one for relational adjectives.

(58) a. [–dynamic, +scalar ([_i], [P ([_i])])]
 b. [–dynamic, scalar ([_i], [P ([_i])])]

Thus, a qualifying adjective expresses a notion related to the nominal base (abstractly represented as ‘P’ for our purposes), and so does the relational adjective, but only in the first case is there a scale associated to it. Relations are all-or-nothing notions that an entity might have or not have, but cannot have to a variable degree. If so, qualifying adjectives cannot express thematic relations or taxonomies, because they are gradable predicates and as such they are incompatible with the notion of ‘relation’. One complication of this appealing approach – whose main intuition we will incorporate into our proposal – is that other non-scalar adjectives should behave as relational adjectives if the only difference is the one stated in (58). This is empirically false: non-scalar adjectives include some adverbial adjectives such as *presunto* ‘alleged’, *diario* ‘daily’ or *próximo* ‘next’, which do not act as relational adjectives for instance in terms of their position (59a) and the coordination test (59b).

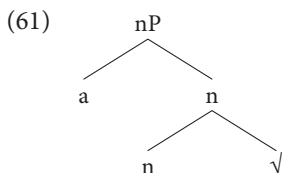
(59) a. el {presunto / próximo / *francés} criminal
 the alleged next French criminal
 b. *las publicaciones diaria y semanal
 the publications daily and weekly

McNally and Boleda (2004) and Arsenijevic et al. (2014) also belong to the semantic type of account. They criticise the approaches where relational adjectives are treated as case-marked nouns and propose that relational adjectives are standard intersective modifiers that take kinds instead of tokens. The kinds they modify are denoted by the head nouns – analysed as functions from kinds to sets of individuals, and they define sub-kinds of them. Arsenijevic et al. (2014) specifically analyse demonyms such as *francés* ‘French’, and propose that they express an origin relation (where ‘origin’ is defined as ‘y is the origin of x if x comes into existence within the (spatial) domain of y’). Given this, *francés* is a function that takes two arguments, a kind and a nominal property of kinds, and relates that property to a geographical area denoted by their base through an origin relation (cf. 60, where ‘y’ denotes the set of individuals and R stands for the realisation relation of Carlson 1977).

(60) $[[\text{francés}]]: \lambda P_k \lambda x_k \lambda y [R(y, x_k) \ \& \ P_k(x_k) \ \& \ \text{Origin}(x_k, \text{France})]$

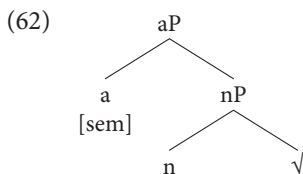
This suggests that the affix of a relational adjective expresses an origin relation between a noun denoting a place and a kind, which is something that fits with *-és* – which as we saw is specialised in adjectives expressing geographical origin – but is more problematic with other affixes, such as *-ano* or *-ense*, that have a wider set of meanings. Even if this problem is fixed somehow – either by proposing that the affix used in each case is arbitrary, or by proposing more underspecified relations for these adjectives, the account still has the same problems that Lieber’s semantic approach has to face: it does not provide an explanation of why the syntactic behaviour of relational adjectives is so close to prepositionally-marked nouns, unless one makes additional stipulations that map a kind modifier to a specific syntactic set of properties.

We move now to syntactic accounts of the distinction, and specifically we will focus on Marchis (2015), which is a (well-motivated) modification of Fábregas (2007b). We will only sketch Fábregas (2007b), given that in this monograph we will ourselves present a modified version of that approach, and many of the critiques we could make to that work are also made in Marchis (2015). In Fábregas (2007b) the structure of both thematic and classificatory relational adjectives is the one in (61).



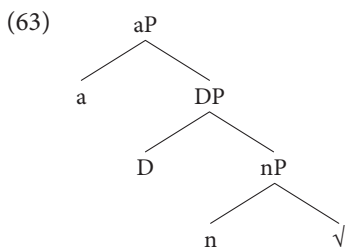
The intuition is that relational adjectives are still nouns. They combine with an adjectival head, which explains why they carry an affix that can also produce qualifying adjectives, but the idea is that this affix, when used to produce a relational adjective, lacks a full semantic entry, and as such cannot project its label to the whole structure. The role of the adjectival head is to associate the base noun with agreement features. This association, according to Fábregas (2007), forces the noun to enter into a formal relation with the head noun; it is because of this relation that the noun is semantically interpreted as holding a relation with that head noun.

In the case of the qualifying adjective, the affix is associated to an adjectival head that contains a semantic entry, and therefore projects its label to the whole.

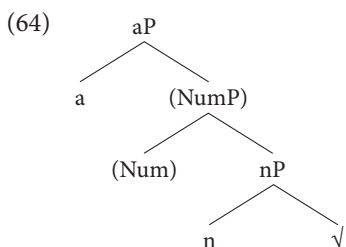


Fábregas' account has several problems. One of them is that it must resort to flavours of the same head *a*, assuming that there are weak and strong versions of most denominal affixes, which is not a position motivated on other grounds. Another one is the direct relation between having a strong semantic entry and projecting its label, assumed by Fábregas. This assumption is not compatible with the current theoretical assumptions in the field, because now (Chomsky 2013) projection is defined in geometric terms: if a head and a phrase combine together, the head will be the one projecting its label to the resulting object. In other words, in (61), independently of the semantics of the head *a*, it should project as in (62). Moreover, in empirical terms, we have seen that the main argument to disallow *a* to project – namely, that relational adjective suffixes iterate – is false. A final complication is that relational adjective affixes should be treated as semantically empty, which is at odds with the intuition that they express relations between kinds or the reasonable expectation that all nodes in a structure must be interpreted at the interfaces. If agreement was responsible for interpreting something as a relation between components, we would expect determiners and other agreeing members of the noun phrase as also expressing relations, but they clearly do not – at least, in the narrow sense of relation that relational adjectives denote.

Marchis (2015) maintains the intuitions of Fábregas (2007b) but provides an original account where the relation between case-marked nominal constituents and relational adjectives is central. In her view, thematic relational adjectives have the shape in (63, cf. Marchis 2015: 321).



The thematic relational adjective is an argument of the noun that checks genitive case within the functional structure of the head noun it modifies (cf. also Marchis 2010). There is a DP layer, but the DP is reduced functionally with respect to other DPs, as it does not project number. In contrast, classificatory relational adjectives lack DP and can project number if the noun is count (Marchis 2010: 83).



Classificatory relational adjectives do not check case.

There are several aspects which we believe make this analysis imperfect, even if it is on the right track – in fact, we believe, on a better track than Fábregas (2007b). First, the structure of thematic and classificatory relational adjectives is different. This is at odds with the observation that any relational adjective that can be thematic can also be classificatory, without any difference in morphological marking (Bosque 1993). It is rather the nature of the head noun that determines the interpretation – specifically, if the head noun can be associated to an eventuality or a representation, so that theta-roles are among the conceivable relations that are significant to express in its case.

- (65) a. la invasión francesa de Alemania Thematic
 the invasion French of Germany
- b. un vino francés Classificatory
 a wine French

Marchis' evidence for the claim that the structure should be different is the reported fact that relational adjectives cannot appear after copulative verbs, while classificatory ones can (50).

- (66) a. *La invasión fue francesa.
 the invasion was French
 *'The invasion was French'
 b. La invasión fue naval.
 the invasion was boat-AL
 'The invasion was by boat'

It is true that this fact is reported in the literature, but it is empirically wrong. See (67), where it is possible to assign interpretations of agent and patient, respectively, to the notions expressed by the relational adjectives:

- (67) a. El descubrimiento de América fue español.
 the discovery of America was Spanish
 'The discovery of America was by Spain'
 b. La principal producción exportable de Noruega es maderera.
 the main production exportable of Norway is wood-ERA
 'The main exportable production of Norway is of wood'

In our view, this simply means that the 'basic' use of relational adjectives is to express relations between objects, and there is no grammatical sensitivity to whether these relations are thematic or not. (66a) is plausibly ungrammatical because the complex event nominal in the subject position lacks an internal argument (contrast with *La primera invasión de Polonia fue rusa*, 'The first invasion of Poland was Russian'). What might be behind the preference for the classificatory reading of relational adjectives after copulative verbs is a fact about copulative sentences with *ser*: they allow any kind of complement provided it specifies the kind of entity that the subject expresses. For instance, *descalzo* 'barefoot' is an adjective that normally must combine with *estar* – the stage level copula – in Spanish (cf. Arche 2006, among many others) (68a). However, if the subject denotes a kind, the construction is grammatical if the complement of the copula can be interpreted as defining a taxonomy (68b).

- (68) a. *Juan es descalzo.
 Juan is^{ser} barefoot
 Intended: 'Juan is (characteristically) barefoot'
 b. Este carmelita es descalzo.
 this Carmelite is^{ser} barefoot
 'This Carmelite is of the kind that is barefoot'

Given that relational adjectives establish subkinds of kinds through significant relations with other kinds, it is expected that in this type of use of *ser* they are allowed as complements of the copula. We suggest that this explains the preference for purely

classificatory readings of relational adjectives in this syntactic construction: if the *ser* construction can generally be used to define a taxonomy, the classificatory use, which also expresses taxonomies, is to be preferred.

Even if the structure of thematic relational adjectives proposed by Marchis could then extend to all cases, there are a few aspects to criticise. First, it is unclear – given that in this analysis relational adjectives are headed by an *aP* – why they would behave differently from qualifying adjectives in terms of gradation and the other properties noted – except for their interpretation and their syntactic position, which are related to the DP nature and the case-checking obligation, respectively. Second, there is no evidence – we believe – that a DP layer is present in such cases, a requisite that relates to Marchis’s claim that the relevant structure captures their nature as arguments. We have seen that the referential properties of the noun phrase where the adjective is embedded are carried over to the interpretation of the base of the relational adjective, in interaction with the conceptual knowledge associated to the entity that it denotes. If a DP layer is present, that interpretation should be more fixed, and plausibly would be reflected through some morphological difference in marking between qualifying and relational adjectives.

In our view, the classificatory use should be seen as the basic one, and the thematic interpretation emerges only to the extent that the semantics of the noun licenses theta-relations as the conceivable relations. This explains, plain and simple, that a relational adjective cannot satisfy the theta-grid of a complex event nominal. Let us briefly show this. Consider (69):

- (69) la producción sedera de China
 the production silk-ERA of China
 ‘China’s production of silk’

(69) shows that, contra Bosque & Picallo (1996), relational adjectives are not forced to express the agent of a theta-grid: clearly, *sedera* in (69) is interpreted as the patient. Consider now (70a): as soon as we try to combine (69) with a verb that forces an event interpretation of its subject, such as *tener lugar* ‘take place’, we obtain ungrammaticality – in contrast to (70b).

- (70) a. *La producción sedera (de China) tiene lugar cada año en abril.
 the production silk-ERA (of China) takes place each year in April
 Intended: ‘China’s silk production happens every year in April’
 b. La producción de la seda (en China) tiene lugar cada año
 the production of the silk in China takes place each year
 en abril.
 in April
 ‘The production of silk takes place each year in April’

This is not surprising if we take into account that in (70b) the genitive-marked NP carries an overt determiner. We have already shown in §2. that DPs marked with a preposition express a participant. In contrast, bare noun-PPs such as *de seda* ‘of silk’ cannot express participants: they are used to express taxonomies of the head noun, just like relational adjectives. In our view, the conclusion is, simply, that relational adjectives should be analysed like bare nouns with prepositional marking.

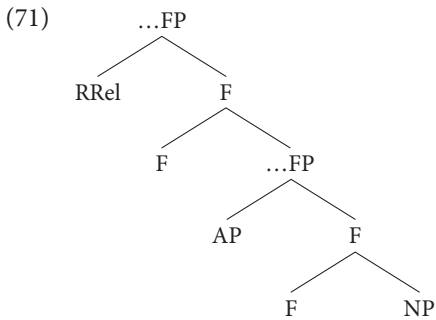
5. The external syntax of relational adjectives

5.1 Deriving the syntactic position of relational adjectives

When it comes to the syntactic position of relational adjectives (Properties A and B), a full account cannot rely only on the proposal that relational adjectives express relations between kinds. We must make explicit our assumptions about the external syntax of modifiers. To be clear, we do not provide here an account about the order of adjectives in the DP: our contribution in this sense is much more modest, merely showing how the facts reported in §2 about the position of relational adjectives are coherent with a particular implementation of adjective order. We explicitly inform the reader that here we are not contributing much.

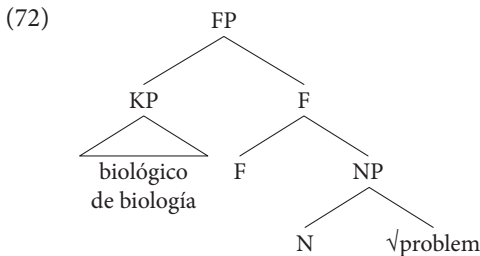
Remember that, on the surface, relational adjectives occupy the same position as determinerless classificatory NPs with *de* ‘of’: they are both restricted to post-nominal position and, unlike participants introduced as PPs, they are more internal to the head noun than qualifying adjectives.

There are several studies about the position of adjectives (Laezlinger 2005; Morzycki 2005; Cinque 2010), but they do not concentrate on the specific case of relational adjectives. This task has recently been undertaken by Bortolotto (2016: 182–190), who argues that the adjacency between noun and relational adjective should be accounted for by positing that relational adjectives are merged very low above the NP. The general background of the proposal – which we assume in the discussion that follows – is that adjectives are the specifiers of functional projections. There are two types of structures for adjectives in Cinque (2010). The first type is *direct modifiers* (projections of AP in Cinque 2010). The second type is *reduced relative clauses* (RRel), in which the AP is contained within a more complex functional structure. It is further proposed that direct modification is introduced in an area that is lower than the one for reduced relative clauses, as in (71).



Laenzlinger (2005) proposes a rigidly ordered sequence of functional projections annotated for the conceptual dimension each adjective belongs to (colour, size, shape, etc.).

We follow Bortolotto (2016: 185) in the claim that relational adjectives are introduced in FPs that immediately dominate the NP layer of the noun. In that position, they have access to the set of properties that the NP denotes, and therefore the modification will be interpreted as adding additional properties to the NP. Following McNally & Boleda (2004), and also Gehrke & McNally (2011), we assume that the denotation of an NP is that of a kind; in order to express tokens, the NP must combine with other nominal projections, specifically those that define the count/mass distinction, number and possibly also gender, if gender is treated as a separate syntactic head. This explains that both relational adjectives and determinerless PP modifiers define subkinds of the concept denoted by the NP (see also the notion of restriction, vs. saturation, in Chung & Ladusaw 2003).

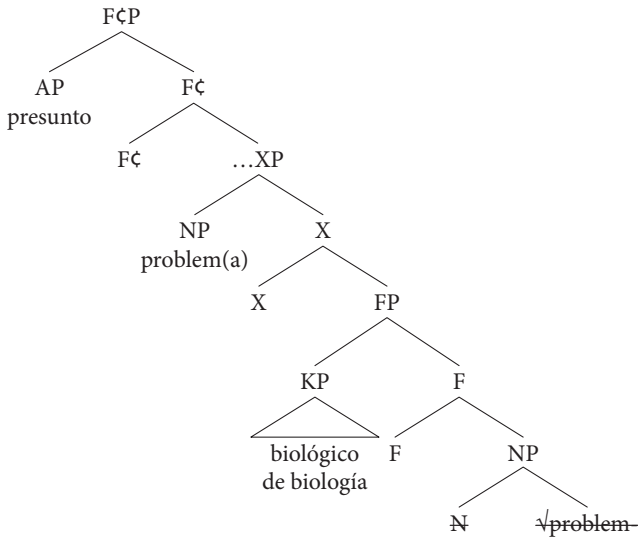


problema biológico 'biological problem'

problema de biología 'problem of biology'

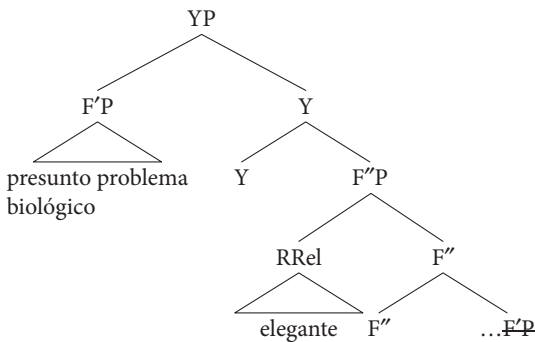
The compulsory postnominal position that relational adjectives occupy, always followed by qualifying adjectives, is explained if the NP compulsorily moves in Spanish to a position above the area where these relational adjectives are merged. This position must be within the direct modification area, below the direct modifiers expressing mood or tense, which are always prenominal, such as *presunto* 'alleged' (73).

(73)



Above direct modifiers, the relative clause modification area is defined, where qualifying adjectives are the only ones that can be introduced. If there is no further movement, the whole set will follow an adjective like *elegante* ‘elegant’, accounting for the prenominal ordering of qualifying adjectives. If the F’P structure in (74), containing the modal adjective, moves as a constituent to a position above qualifying adjectives, the ordering will be postnominal and qualifying adjectives will always follow relational adjectives.

(74)



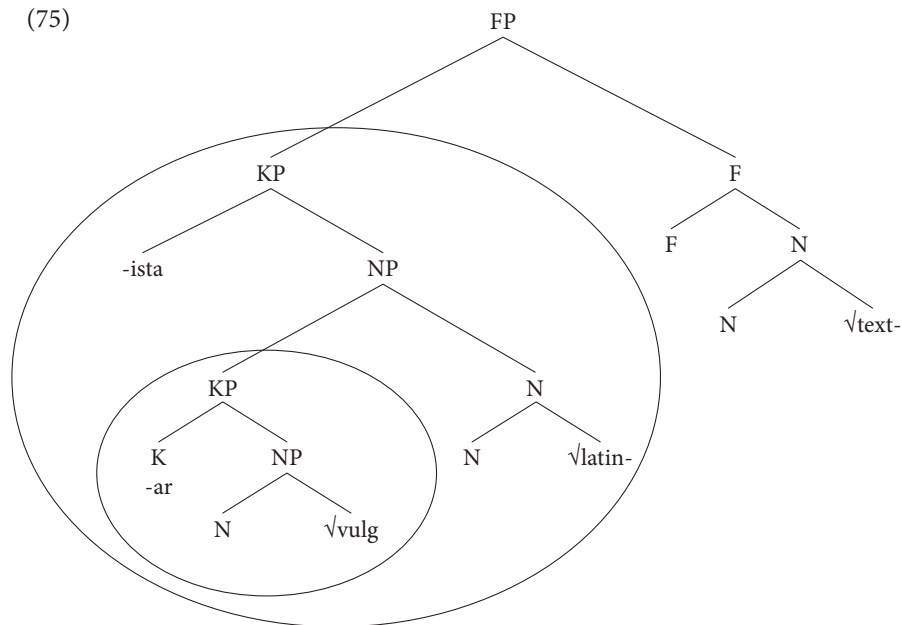
(*un*) *presunto problema biológico elegante*
 a alleged problem biological elegant
 ‘an elegant alleged biological problem’

We remain agnostic with respect to whether the order of modifiers is superspecified, as Bortolotto (2016) and in general the cartographic approach predicts, or syntax leaves underspecified the relative ordering among adjectives of the same class belonging to distinct conceptual domains (see Svenonius 2008 for an approach where domains are used to account for the basic adjective ordering facts).

5.2 Bracketing paradoxes

Let us now see how in our analysis the external syntactic structure that we have described above would produce a bracketing paradox where one relational adjective is subordinated to another, as in *latinista vulgar* ‘related to Vulgar Latin’ (Property K in §2). The proposed structure is presented in (75), where we have circled the constituent corresponding to each relational adjective. The main idea is that one relational adjective – the KP projection corresponding to *vulg-ar* – is projected as the low modifier of another relational adjective – the KP projection corresponding to *latin-ista*. The highest KP is the modifier of the head noun corresponding to *text*. In (75), to facilitate the exposition, the phonological indices of roots have been substituted for their exponents.

(75)

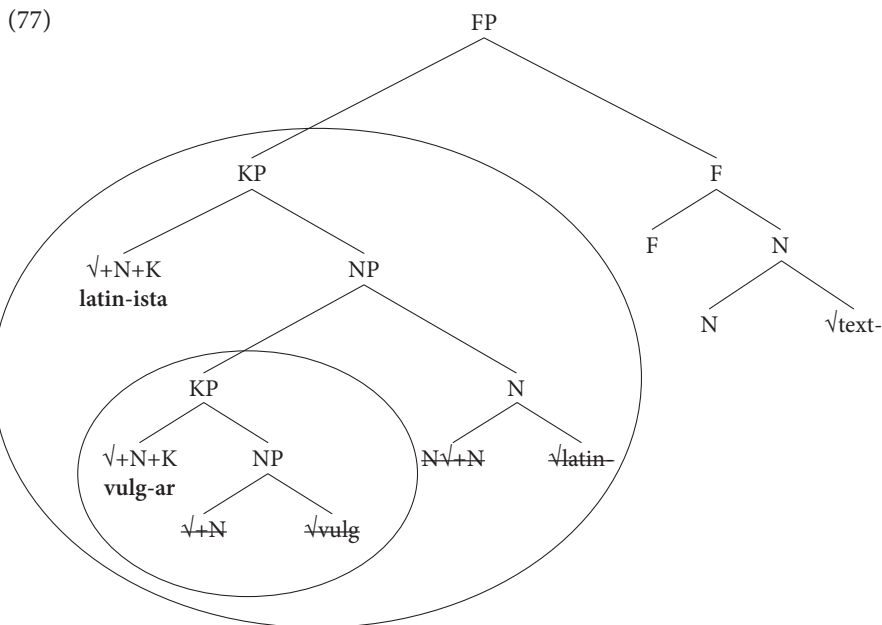


Given that the internal structure of the relational adjective is impoverished – with fewer functional projections intervening between the affix and the base, we propose

a slight asymmetry between modification of a relational adjective by another one and modification of a head noun by a relational adjective. Specifically, it seems necessary to restrict the possibility of modifying the base of a denominal adjective with other types of adjectives, in order to prevent ungrammatical sequences such as those in (76) – intended as meaning ‘the property of having a big belly’.

- (76) *[gran trip-]ado
 big belly-ed
 Intended: ‘big bellied’

We take this general ban on internal modification as meaning that the FPs that host modifiers are absent from the internal structure of a derived adjective. Thus, we subordinate the most embedded relational adjective as a specifier of NP, directly. Head movement follows, and the right order is obtained – assuming further movement of the most external NP to a higher position.



5.3 What licenses ‘Singular + Singular = Plural’?

The final point that needs to be discussed has to do with Property C in §2, the fact that two relational adjectives can be coordinated in the singular with one single head noun in the plural. The relevant construction is the one in (78).

- (78) los embajadores mexicano y argentino
 the ambassadors Mexican and Argentinian
 ‘the Mexican ambassador and the Argentinian ambassador’

How is this reading obtained? Specifically, does the existence of this reading mean that the NP within the relational adjective structure also projects number (NumP)? There are several reasons, both theoretical and empirical, that suggest that this is not the case. Starting with the theoretical reason, if the noun structure inside a relational adjective is impoverished it would be unexpected that NumP would be projected. Then, there are the wrong predictions that this analysis would make: if NumP is projected, what prevents the plural *-(e)s* from occurring inside the relational adjective, as in (83)?

- (79) nacion(*-es)-al
 nation-s-al
 Intended: ‘related to nations’

Additionally, if NumP were projected, we would expect the count/mass distinction to be relevant to obtain the ‘singular + singular = plural’ reading. The reason for this is that the count/mass distinction is a precondition for defining a noun as a plurality of objects; in fact, Borer (2005) has argued that plural morphology is one way to define a noun as count. Is the mass / count distinction relevant for the construction under study?

The answer is clearly not. Let us take two relational adjectives coming from prototypically mass nouns, such as *agua* ‘water’ and *tierra* ‘land’. Assume that there are two kinds of otter, one that lives in water and one that lives in land. (80) is grammatical precisely in that interpretation:

- (80) las nutrias acuática y terrestre
 the otters water-ICO and land-ESTRE
 ‘the water otter and the land otter’

So what determines the possibility of having the singular + singular reading in relational adjectives, if not the internal properties of the base noun (or for that matter, the functional structure that dominates it)? The answer again comes from the comparison with the bare noun-PPs, as in (81). Notice that the mass nature of the base noun – strongly rejecting plural marking – is no impediment for the relevant interpretation.

- (81) las nutrias de agua(*s) y de tierra(*s)
 the otters of water(*s) and of land(*s)
 ‘the water otter and the land otter’

Bare noun-PPs do not decide the number of their internal nouns on the base of any kind of agreement relation with the head noun; plural marking is related to whether the noun is itself mass or count – singular when mass, and possibly plural when count, as in *de joyas* ‘of jewels’, precisely because in them the noun phrase is functionally richer and projects the relevant projections responsible for the mass / count distinction and plural marking. This strongly suggests that the presence of KP in itself licenses the distributive reading independently of whether or not the noun is defined as a singular individual. In fact, remember that we saw that relational adjectives coming from verbs license the same interpretation: in such cases there is no possibility to project NumP because the base is a verb.

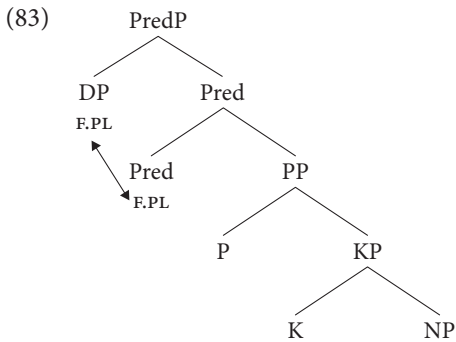
Our specific proposal is the following: relational adjectives keep the property of KPs whereby they do not need to formally agree with the head noun. The coordination of two singular relational adjectives can be interpreted distributively with a plural noun because each one of the two KPs defines a different relation with a distinct concept, and each relation can be used to define a different subkind of the head noun, particularly when the two relations can be seen as mutually exclusive.

Qualifying adjectives are ungrammatical in this construction (remember **los embajadores alto y guapo* ‘the ambassadors tall.sg and handsome.sg’). In our view, there are two reasons for this: the first one is that they are introduced by PredPs. The subject of the predication is always the entity that agrees with the adjective in gender and number. In (82), the interpretation of who is the person that is stressed depends on agreement.

- (82) El pintor_i retrató a la modelo_j {desnudo_i / desnuda_j}.
 the painter photographed DOM the model {naked.M / naked.F}
 ‘The painter, naked, photographed the model’ or
 ‘The painter photographed the model naked’

This direct correlation, outside relational adjectives, between being the subject of predication and agreeing in gender and number with the adjective made me argue (Fábregas 2007b) that the site for formal agreement in Spanish adjectives is Pred⁰. Qualifying adjectives, carrying PredP, are forced to undergo formal agreement with the head noun, which blocks them from staying in singular when the subject of predication is plural.¹⁰

10. This approach has, of course, consequences for adverbial adjectives and determiners, some of which I do not have a direct answer to. We will revisit this issue in §10.2.2.



Second, there is a related reason for the asymmetry: qualifying adjectives are predicates, and predicates do not carry with them indexes of identity even when they are nouns (Baker 2003). In (84), the noun *burro* ‘donkey’ can be interpreted as a predicate of *Juan* or as a referential noun that introduces a donkey owned by *Juan*. In the predicate reading, *burro* ‘donkey’ is used to predicate of the individual *Juan* that it has prototypical donkey properties, namely the donkey’s stupidity – as in (84b), while in the second reading the NP is equivalent to (84c). That the predicate cannot be subject to identity judgments is shown by (85). The adjective *mismo* ‘same’ (85), which defines an identity relation, is incompatible with the predicative reading and forces the referential reading.

- (84) a. el burro de Juan
‘the donkey of Juan’
b. Juan es un burro.
Juan is a donkey
‘Juan is a fool’ (cf. ‘that fool of Juan’)
c. el burro que tiene Juan
the donkey that owns Juan
‘the donkey that Juan owns’

- (85) el mismo burro de Juan
the same donkey of Juan
*‘Juan is the same fool (as I mentioned before)’
‘the donkey that Juan owns is the same one (as I mentioned before)’

If we cannot express sameness with predicates, we cannot determine that two predicates are ‘distinct’ either, which blocks the possibility of using two predicates to define two distinct individuals expressed by a plural noun.

With this, we leave the discussion of relational adjectives, and concentrate on denominal qualifying adjectives for the next two chapters.

Appendix. Do relational adjectives really have double affixal marking?

In Fábregas (2007b) I discussed formations such as those in (86), where it seems that two of the mentioned suffixes pile up in order to produce a relational adjective. I used these data to claim that within the internal structure of relational adjectives the head corresponding to the suffix did not dominate the base. Relevant examples involve relational adjectives ending in *-ístico* (which could involve *ist(a)+ico*), *-alista* (possibly *al+ista*), *-icista* (*ic(o)+ista*), *-ical* (*ic(o)+al*) and *-icario* (*ic(o)+ario*).

- (86) a. *art-ístico* ‘artistic’ from *arte* ‘art’; *billar-ístico* ‘related to billiards’, from *billar* ‘billiards’; *memor-ístico* ‘related to memory’, from *memoria* ‘memory’; *zarzuelístico* ‘related to zarzuela’
 b. *minim-alista* ‘minimalist’, from *mínimo* ‘minimum’; *justici-alista* ‘related to justice’, from *justicia* ‘justice’; *maxim-alista* ‘maximalist’, from *máximo* ‘maximum’
 c. *angl-icista* ‘anglicist’; *cast-icista* ‘purist’, from *casto* ‘chaste person’
 d. *angel-ical* ‘related to angels’ from *ángel* ‘angel’
 e. *suburb-icario* ‘related to the slums’, from *suburbio* ‘slum’

Essentially, I will now show that I was wrong and that the correct analysis of these sequences is, in most cases, as single affixes without internal segmentation, with a few remaining cases where the most internal suffix is actually associated to a base noun and there are two derivational steps.

Let us start with the cases where the suffixes have to be treated as a single unit. If the suffixes were analysed as in fact involving two steps of derivation, we would expect that in every case where we have the two affixes, we also have an attested form with only the most internal one. For instance, if *-icista* actually corresponded to *ic(o)+ista*, then – unless we simply stipulate by brute force that the particular base requires iteration of suffixes – we expect any combination [[[Base] *ic*] *ista*] to be related to a structure [[Base] *ic(o)*]. In contrast, if *-icista* is actually a single suffix as in [[Base] *icista*], then there is no reason to expect a form [[Base] *ic(o)*] should be impossible.

The adjectives in (86c) and (86e) lack alternative forms with the alleged first suffix only (**ánglico*, **cástico*, **subúrbico*); in the case of *angelical*, even though a form like *angélico* was used in Spanish, the vast majority of speakers that accept *angelical* reject *angélico*. Many formations in *-alista* have this same property (cf. **minimal*, **maximal*, **justicial*); the same can be said of some adjectives in *-ístico* (**memorista*). However, in the specific case of the (86a) and (86b) groups, there are many cases where the base is attested with only the first suffix:

- (87) a. *futbol-ístico* ‘related to soccer’ ~ *futbol-ista* ‘soccer player’
 b. *art-ístico* ‘related to arts’ ~ *art-ista* ‘artist’
 c. *imperi-alista* ‘related to imperialism’ ~ *imperi-al* ‘related to an empire’
 d. *existenci-alista* ‘related to existentialism’ ~ *existenci-al* ‘related to existence’
 e. *mediev-alista* ‘related to medievalism’ ~ *mediev-al* ‘related to the Middle Ages’

As we proceed, we will see that the combinations in (86a) and those in (86b) are not identical, but in both cases it can be shown that the meaning relation is not the one expected if, in a literal sense, the second affix is added to the combination of the base and the first affix.

Consider first *-ístico* cases. It is clear that even when the base with only *-ista* is attested, its meaning is not the one we expect if *-ico* attached to *-ista*: *futbolístico* is not something related to *futbolistas*, ‘soccer players’, in the same way that *artístico* does not relate to artists, but to arts. The meaning of *-ista* – which produces nouns or adjectives related to people characterised by

activities and tendencies defined by the base, as we will see below – is simply not present in these formations. This is explained if *-ístico* should be considered here just a different affix from *-ista*, one that happens to share some phonological material with it – plausibly due to historical origin – but one that has been reanalysed as a distinct exponent to spell out relational adjectives (88a, 88b). Some of the bases that combine with this affix happen to have a pair where they combine with *-ista* (88c, 88d), while others don't (88e, 88f).

- (88) a. *-ístico*
 b. *-ista*
 c. *futbol-ístico* 'related to soccer'
 d. *futbol-ista* 'soccer player'
 e. *memor-ístico* 'related to memory'
 f. **memor-ista*

Let us move now to cases where the impression that two relational affixes pile up is in fact due to the existence of two distinct derivational steps. All the remaining combinations involve *-ista* 'ist', and that is a less than prototypical adjectivaliser for two reasons. The first reason is that sometimes *-ista* is used in nominal formations that lack an adjectival version. The formations in (89), to the best of our knowledge, are never used as adjectives: they denote a person characterised by a specific activity related to the base noun.

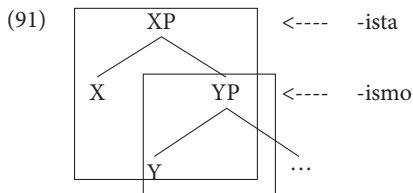
- (89) a. *ten-ista*
 tennis-ist
 'tennis player'
 b. *anal-ista*
 analysis-ist
 'analist'
 c. *violin-ista*
 violin-ist
 'violin player'
 d. *fonet-ista*
 phonetics-ist
 'phonetician'

The second property is that very frequently *-ista* triggers haplology in the sense that it involves the cancelation of suffixes whose structural presence inside the base can be deduced through its semantic contribution (Fábregas 2014). Consider (90):

- (90) a. *extrem-ista*
 extreme-ist
 'extremist'
 b. *evolucion-ista*
 evolution-ist
 'evolutionism supporter'
 c. *exorc-ista*
 exorcism-ist
 'exorcist'

In (90a), the meaning is 'someone that relates to extremism', not 'someone that relates to extremes'; (90b) is someone that supports evolutionism, and (90c) is someone that performs exorcisms; the base alone does not exist without *-ismo* (or a verbaliser, *exorc-iza* 'exorcise'). The

semantics of the adjective relates to formations ending in *-ismo* ‘ism’, which is a nominaliser. It seems that *-ista* spells out a structure that includes the features that *-ismo* spells out, following the general scheme of (91), where crucially the YP layer involves nominal features. Haplogy in this case would be a situation where the affix spelling out the smaller structure is substituted, when the XP layer is projected, by an affix that spells out a more complex structure properly containing the material related to the first affix (due to the Superset Principle in combination with the Exhaustive Lexicalisation Principle).



The specific analysis of *-ista* – and its relation with *-ismo* will be presented in Chapter 5, §2.3: we will argue that X in (91) is specifically KP. For the time being what is relevant for our purposes is that (a) this suffix can produce nouns, and (b) it is related semantically and – for the time being we suggest, and we will later motivate – structurally to nominals in *-ismo*. Given these two properties, we will now argue that when the sequences in fact involve segmentation, there are additional steps in the word’s derivation that differentiate between distinct levels.

Consider what is interpreted in the case of an adjective with *-alista* such as *imperialista*. First of all, the meaning relates to *imperi-al-ismo* ‘imperialism’, as an ideology. This explains that the suffix *-al* can be contained inside the word: *-al*, as we have seen, defines a type of adjective, specifically a relational adjective. Combining it with *-ismo* produces a noun (*imperi-al-ismo*) that is distinguished from its base *imperi(o)* ‘empire’ given the ‘ideology’ semantics related to *-ismo*. Then, an additional layer is built on top of *imperi-al-ismo*, and by (91), *-ista* is substituted for *-ismo* to spell out all the features represented in the syntax. Consequently, *-al-ista* should be segmented, but it does not involve just building a relational adjective: there is a more complex derivational history where first a relational adjective *imperi-al* is built from *imperi(o)*, then it is turned into a nominalisation denoting an ideology (*imperi-al-ismo*), and then a second relational adjective is built to express the relation with that ideology. The same reasoning applies to other adjectives related to ideologies, with one overt affix (*Marxismo* ‘Marxism’ ~ *Marx-ist* ‘Marxist’), or two (*existenci-al-ismo* ‘existentialism’ ~ *existenci-al-ista* ‘existentialist’), but also to a wider range of formations also covered by the semantics of *-ismo*, and therefore *-ista*. The suffix *-ismo* can build nouns referring to entities characterised by containing the properties of an artistic movement, ideology or other types of taxonomies (*mediev-al-ismo* ‘medievalism’ ~ *mediev-al-ista* ‘medievalist’, *clas-ic-ismo* ‘classicism’ ~ *clas-ic-ista* ‘classicist’...).

Given this whole reasoning, then, there are no real sequences of affixes in formations moving from one nominal base to a single relational adjective, and therefore there is no reason to propose that the structure related to the relational adjective does not project as a head, contra Fábregas (2007b). Some affixes, such as *-ical*, are to be treated as single exponents in contemporary Spanish, even if it is possible that historically they are reanalyses of sequences of affixes.

Qualifying denominal adjectives I

Possessive and similitudinal adjectives

This chapter is dedicated to two classes of qualifying denominal adjectives. §1 introduces our analysis. It presents the main classes of qualifying adjectives and points out their main differences from relational adjectives, analysed in the previous chapter. We then focus on two classes whose properties are related to the point that in some theories they are treated as sharing structure and heads: possessive and similitudinal adjectives. §2 and §3 discuss the possessive class, presenting first its empirical properties and then its analysis; §4 and §5 discuss similitudinal adjectives. The remaining classes of qualifying denominal adjectives are presented and analysed in Chapter 5.

1. Overview of the analysis of qualifying denominal adjectives

As we did in the previous chapter, we introduce here our analysis of denominal qualifying adjectives in a summarised form. There are four classes of qualifying denominal adjectives: possessive adjectives (1), similitudinal adjectives (2), causative¹ adjectives (3) and dispositional² adjectives (4).

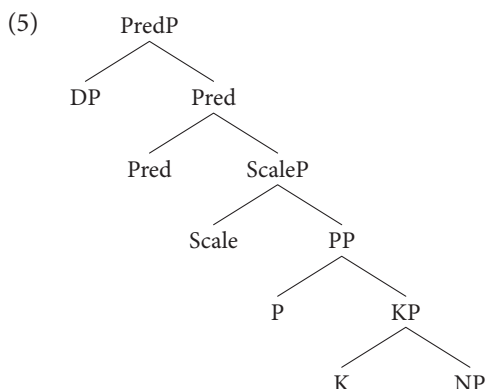
- (1) a. azucar-ado
sugar-ADO
'sugary'

1. Rainer (1999: 4632–4633) calls this class 'adjetivos de efecto' (effect-adjectives) because the base denotes the effect produced by the subject of the predication.

2. Rainer (1999: 4632) and Martín García (2014: 40) call this class 'dispositional', which they claim is affection-oriented: they show a positive disposition to the entity denoted by the base. In this sense, 'dispositional' might be a misnomer, because they do not express exactly the same relation as deverbal dispositional adjectives (cf. §8.1–§8.2). We will keep the term for terminological convenience.

- b. can-oso
white.hair-OSO
'gray-haired'
 - c. pel-udo
hair-UDO
'hairy'
- (2)
- a. cenic-iento
ash-IENTO
'ashen'
 - b. esponj-oso
sponge-OSO
'spongy'
 - c. lacay-uno
lackey-UNO
'servile'
- (3)
- a. angusti-oso
anguish-OSO
'distressing'
 - b. asquer-oso
disgust-OSO
'disgusting'
 - c. calor-ífico
heat-ÍFICO
'calorific'
- (4)
- a. embust-ero
lie-ERO
'liar'
 - b. marx-ista
Marx-ISTA
'Marxist'
 - c. chist-oso
joke-OSO
'with tendency to joke'

We propose a common analysis for these four classes, which are divided between this chapter and the following just for expository reasons. In this chapter we will concentrate on the first two classes, which are related to each other through several properties, and we will leave the cases in (3) and (4) for Chapter 5. (5) summarises our proposed maximal structure for a qualifying denominal adjective.



In contrast to a relational adjective, which is a projection of KP, the qualifying adjective projects additionally PP, ScaleP and PredP. This explains the main properties of qualifying denominal adjectives.

First of all, in general adjectives belonging to the four classes allow degree modification, which we saw is impossible in the case of relational adjectives.

- (6) a. un postre muy {azucarado / *nigeriano}
 a dessert very sugary / Nigerian
 b. un rostro muy {ceniciento / *albino}
 a face very ashen / albino
 c. un problema muy {angustioso / *biológico}
 a problem very distressing / biological

In our analysis, this is a consequence of the presence of ScaleP: if a scale is a set of ordered values, degree modification must necessarily build over that set of ordered values, and when the scale is absent there is no possibility of adding degree. The presence of ScaleP presupposes the presence of PP, in such a way that without PP there is no ScaleP. Remember that PP is a lexical projection that assigns a conceptual dimension to the relation expressed by KP. We have argued that PP should be viewed as the equivalent of PlaceP in the prepositional domain. As for ScaleP, a set of ordered values, we have argued that it is the equivalent of PathP, also an ordered set of points – this time in the spatial domain. In the same way that PathP cannot be projected unless PlaceP is projected (Svenonius 2010), ScaleP cannot be projected unless PP is present: in other words, it makes no sense to talk of a set of ordered values unless those values belong to a particular dimension. For this reason, Scale can only be present in adjectives that have PP.

Second, qualifying adjectives are predicates, that is, they introduce additional properties that can be truthfully predicated of a subject. This follows in our analysis if they are projections of recycled prepositional structures: PredP is the equivalent

of pP, the functional head that in the prepositional domain introduces the figure of the prepositional relation. The ‘figure’ in a qualifying adjective is the subject of predication.

Third, unlike relational adjectives, qualifying adjectives have a more stable semantics where one can associate each adjective to a particular type of dimension. Remember that, in contrast, relational adjectives leave the relation underspecified and it is largely the conceptual semantics of the head noun what determines how it should be interpreted. In the case of qualifying adjectives, in contrast, the conceptual dimension is specified. I argue that this is due to the presence of a PP layer that names the type of relation.

That said, in my view the distinction between the four specific classes of qualifying adjectives – possessive, similitudinal, causative and dispositional – is not to be represented through differences in their syntactic projection. The four classes correspond to the structure presented in (5). They are differentiated just by the type of PP layer that they contain, which is ultimately a matter of the flavour of P that is used in each case. As argued by Harley (1995) in the verbal domain, I propose that there are flavours of P that are distinguished by the type of semantic interpretation assigned to them. Unlike the flavours of little *v* in Harley (1995), I have not identified differences in the type of syntactic object that each one of the P flavours selects. I take this as a sign that the flavours of P are in fact closer to conceptual semantic distinctions than to pure structural semantics. Our claim about these flavours, as discussed in Chapter 5, §3, is that they reflect a particular organisation of the conceptual semantics component, specifically qualia structure (Pustejovsky 1995). Each class of qualifying denominal adjective reflects one of the four classes of quale within this theory, with possessive adjectives reflecting the constitutive quale, similitudinal adjectives reflecting the formal quale, causative adjectives reflecting the agentive quale and dispositional adjectives reflecting the telic quale.

- (7) a. $P_{\langle \text{constitutive} \rangle} = \text{Poss(essive)P}$, qualifying possessive adjectives
 b. $P_{\langle \text{formal} \rangle} = \text{Sim(ilitudinal)P}$, qualifying similitudinal adjectives
 c. $P_{\langle \text{agentive} \rangle} = \text{Caus(ative)P}$, qualifying causative adjectives
 d. $P_{\langle \text{telic} \rangle} = \text{Dis(ositional)P}$, qualifying dispositional adjectives

1.1 On the criteria to determine whether an adjective is qualifying

In Chapter 3, we saw a number of tests that differentiate relational and qualifying adjectives. Despite the claim made by some authors that the boundaries between relational adjectives and other classes of derived adjectives are fuzzy (cf. Bartos 1995; Rainer 1999: 4630–4635, 2013; Fradin 2008; Bisetto 2010), here we we have taken the tests presented in Chapter 3, §2 as a formal criterion to decide which

denominal adjectives are not covered by the analysis presented in the previous chapter. As Rainer (2013) notes, it is true that a semantic definition of ‘relation’ in a wide sense (as Downing 1977 and Levi 1978 do) is not enough to differentiate relational adjectives from possessive adjectives, given that ‘possession’, ‘similarity’ and ‘causation’ are among the possible interpretations of ‘relation’. The formal tests we have just mentioned, in contrast, provide grammatical criteria to split adjectives into the two classes.

Consider for instance the case of *vertebrado* ‘vertebrated’, which belongs to the well-documented set of denominal adjectives in *-ado* belonging to technical and scientific languages (cf. Clavería et al. 2013 for a detailed overview). A purely semantic definition of the adjective does not give a criterion to determine whether it should be considered a possessive adjective (roughly, ‘with vertebrae’) or a relational adjective defining a subclass of a particular kind through its relation with a particular anatomical system. Our tests, in contrast, show that the second option better captures its behaviour, and the adjective is relational: the adjective is not gradable (8a), does not allow prenominal position (8b) and it can be coordinated in singular with another relational adjective in an NP that appears in plural (8c).

- (8) a. una especie (*muy) vertebrada
 a species very vertebrate
 b. *un vertebrado anfibio
 a vertebrated amphibian
 c. los subtipos vertebrado e invertebrado de este animal alienígena
 the types vertebrated and invertebrated of this animal alien
 ‘the vertebrated and invertebrated subtypes of this alien animal’

This is in opposition to, for instance, *azucarado* ‘sugary’, which in combination with *postre* ‘dessert’ does not behave as a relational adjective. For this reason, we treat this adjective as qualifying, and specifically as a possessive qualifying adjective. Note that it allows degree modification (9a), prenominal position (9b) and cannot be coordinated with another adjective in the singular to modify a noun in the plural.

- (9) a. un postre muy azucarado
 a dessert very sugary
 b. su azucarado postre
 her sugary dessert
 c. *los postres azucarado y soso
 the desserts sugary and bland

With this background in place, let us move now to the specific classes of adjectives. In each case, we will first present their specific grammatical properties, and then provide an analysis.

2. Possessive adjectives: Empirical properties

Possessive adjectives have been studied in some detail in Spanish, although it is perhaps fair to say that, in contrast to relational adjectives, the literature is less abundant. Next to the general studies in Alemany Bolufer (1920), Sobejano (1970), Lang (1992), Rainer (1999), RAE & ASALE (2009) and Martín García (2014), there are quite detailed descriptions of the main affixes and patterns in Faitelson-Weiser (1993), Beniers (1997), Alsina & DeCesaris (2000), Clavería et al. (2013) and specially Gil Laforga (2014). The study of possessive adjectives in English is also relevant, given that in this language we see many of the properties that the Spanish class also displays; see for this language in particular Hirtle (1969), Hudson (1975), Ljung (1976), Beard (1976, 1993) and Bauer (2013: 303–307) on *-ful* and *-some*.

In this description, we will differentiate between the empirical properties that depend on the conceptual content of the affix or the root used as part of the base (§2.1, §2.2, §2.3, §2.4), and the structural properties that possessive adjectives have (§2.5, §2.6). Only the second are analysed within the syntactic structure that we will propose in §3.

2.1 What conceptual notions are expressed as possession?

Virtually all studies agree that possessive adjectives should be divided into two main classes through morphological and semantic criteria. The first class, which is less abundant, denotes pure possession; the second class denotes possession and some evaluation, generally – but not exclusively – relating to the size or quantity of the possessed entity. Pure possession is generally expressed through the suffixes *-oso*, *-ado* and *-(i)ento* (10a–c). Possession involving some valuation can incorporate different additional meanings to the possessive relation. The most frequent one is the entailment that the entity possessed appears in an excessive quantity – if it is mass, or interpreted as a group – or as unexpectedly big – if the possessum is a delimited entity. This is the typical interpretation of *-udo* and *-ón* (10d, 10e).

- (10) a. pec-oso ‘freckle-OSO, freckly’, angul-oso ‘angle-OSO, angular’, mugr-oso ‘filth-OSO, filthy’, nub-oso ‘cloud-OSO, cloudy’
 b. barb-ado ‘beard-ADO, bearded’, cafein-ado ‘caffeine-ADO, caffeinated’, esparrag-ado ‘asparagus-ADO, with asparagus’
 c. harap-iento ‘rag-IENTO, ragged’, mugr-iento ‘filth-IENTO, filthy’, pulgu-iento ‘flea-IENTO, with fleas’
 d. barrig-udo ‘belly-UDO, big-bellied’, bigot-udo ‘moustache-UDO, with a big moustache’, nalg-udo ‘buttock-UDO, big-bottomed’
 e. cabezón ‘head-ON, large-headed’, trip-ón ‘belly-ON, big-bellied’, narig-ón ‘nose-ON, with a big nose’

However, there are a few cases where the quantity in *-ón* is evaluated as insufficient:

- (11) a. pel-ón 'hair-ON, bald'
 b. rab-ón 'tail-ON, tailless'

Other suffixes involve a pejorative valuation. Even though it is not productive (cf. Wagner 1950), the suffix *-eto* is occasionally used in European and American Spanish, with bases denoting body parts, to convey the idea that the entity possessed is damaged or abnormal in some sense (12). Wagner (1950) reports that in some Latin American varieties, the suffix *-eco* has become specialised for this meaning (13), even though in most cases it is used as an appreciative morpheme that attaches to adjectives, not nominal bases. Other semi-productive suffixes that have this meaning in contemporary Spanish are *-azas* and *-ota* (14), even though they tend to obtain lexicalised meanings involving something more than possession.

- (12) a. una res corneta
 a beast horn-ETA
 'a cow with a damaged horn'
 b. una persona pateta
 a person leg-ETA
 'a person with a crooked leg'
 c. una persona maneta
 a person hand-ETA
 'a person with a damaged hand'

- (13) patuleco
 leg-ECO
 'with crooked legs'

- (14) a. manazas
 hand-AZAS
 'clumsy oaf'
 b. bocazas
 mouth-AZAS
 'blabbermouth'
 c. car-ota
 face-OTA
 'cheeky'
 d. cabez-ota
 head-OTA
 'pigheaded'

Descriptive and theoretical studies agree that determining which adjectives should belong to this class faces the descriptive problem of determining what counts as

possession. The notion of possession in the ‘proper’ sense would restrict the set of possessive adjectives to just those derived from nouns that denote physical entities, and for some authors (such as Hudson 1975; Gil Laforga 2014) specifically nouns that can be considered to establish an inalienable possession relation with the modified NP. However, if the notion of possession is taken in a wider sense, the set of adjectives belonging to the class quickly grows, with many different types of nouns being possible bases.

We will refer to this descriptive problem as the underspecification problem (Rigau 1999; Herslund & Baron 2001; Fábregas 2017a): possession can be taken to be a relatively underspecified type of relation which sometimes, but not always, corresponds to the notions of ‘ownership’ or ‘part-whole’. In Spanish, there are two syntactic contexts which in principle have been described as possession in this wide, underspecified sense. We will consider ‘possessive adjectives’ those adjectives whose base establishes relations that can otherwise be expressed in these syntactic contexts.

The first context is a stative verbal construction with the verb *tener* ‘to have’ (cf. also Den Dikken 1997). Beyond prototypical possession (15), the verb is used to express other relations that metaphorically can be assimilated to ‘possession’ in this wide sense (16), although not every stative relation can be expressed with this verb (for instance, location or identity, 17).

- (15) a. tener dos brazos
have two arms
b. tener un reloj
have a clock
- (16) a. tener mucha paciencia
have much patience
b. tener miedo
have fear
‘to be afraid’
c. tener gripe
have flu
- (17) a. #tener en la mesa
have on the table
Intended: ‘to be on the table’
b. #tener el profesor
have the teacher
Intended: ‘to be the teacher’

The second context is as a nominal complement introduced by the preposition *de* ‘of’. As we saw in Chapter 3, §3, this preposition is underspecified and not

surprisingly it can be used beyond possessive contexts: we will restrict the cases considered ‘possessive’ to those allowing substitution by a pronoun such as *su* ‘his/her/its/their’. Both prototypical and non-prototypical possession relations can be expressed like this (18), and again note that location in time or space (19) are not grammaticalised in the same way given that they cannot be substituted by the possessive pronoun.

- (18) a. la mano de Juan (su mano)
the hand of Juan his hand
b. el libro de Juan (su libro)
the book of Juan his book
c. la paciencia de Juan (su paciencia)
the patience of Juan his patience
d. la gripe de Juan (su gripe)
the flu of Juan his flu
e. el miedo de Juan (su miedo)
the fear of Juan his fear
- (19) a. el autobús de las tres (*su autobús)
the bus of the three its bus
‘the three-o’clock bus’
b. el libro de la esquina (*su libro)
the book of the corner its book
‘the book at the corner’

In this underspecified sense, the range of nouns that can act as bases of possessive adjectives is much wider; the following classes can be differentiated (cf. Beniers 1997 for a simpler, but related, classification).

2.2 Conceptual classes of roots in the base and inalienable possession

There are many different types of concepts that can be associated to possessive adjectives, as the entity that is possessed in the wide sense described above. Not all classes of concepts allow this, though: roots expressing events and animate beings are excluded, to the best of our knowledge.

A first group of roots consists of physical entities, with four subclasses:

a. Body parts

- (20) barrig-udo
belly-UDO
‘big-bellied’

b. Items of clothing

- (21) a. andraj-oso
rag-OSO
'ragged'
- b. tog-ado
toga-ADO
'with a toga'
- c. uniform-ado
uniform-ADO
'with a uniform'
- d. camis-udo
shirt-UDO
'with a wide shirt'

c. Substances, produced by the body or not

- (22) a. moc-oso
mucus-OSO
'snotty'
- b. sudor-oso
sweat-OSO
'sweaty'
- c. roñ-oso
filth-OSO
'filthy'
- d. gras-iento
fat-IENTO
'greasy'
- e. polvor-iento
dust-IENTO
'dusty'

d. Other physical entities that can accompany, modify or decorate an entity

- (23) a. almendr-ado
almond-ADO
'with almonds'
- b. estrell-ado
star-ADO
'with stars'

e. Structural parts within the internal constituency of an object

- (24) a. lobul-ado
lobe-ADO
'with lobes'

- b. portic-ado
arcade-ADO
'with a portico'
- c. tesel-ado
tessera-ADO
'with tessera'
- d. vall-ado
fence-ADO
'with a fence'

However, nouns denoting non physical entities can also be the base of possessive adjectives in this general sense. The following subclasses of nouns are typically found as well:

a. Nouns denoting capacities and abilities

- (25) a. poder-oso
power-OSO
'with power, powerful'
- b. memori-oso
memory-OSO
'with a good memory'
- c. judici-oso
judgement-OSO
'with a good judgement'

b. Nouns denoting moral qualities

- (26) a. avarici-oso
greed-OSO,
'greedy'
- b. concienz-udo
awareness-UDO
'thorough'
- c. pacienz-udo
patience-UDO
'with great patience'
- d. coraj-udo
courage-UDO
'brave'

c. Mental states

- (27) a. hambr-iento
hunger-IENTO
'hungry'

- b. mied-oso
fear-OSO
'fearful'
 - c. furi-oso
rage-OSO
'furious'
 - d. colér-ico
anger-ICO
'choleric'
- d. Diseases and ailments
- (28) a. alérg-ico
allergy-ICO
'allergy'
- b. aném-ico
anemia-ICO
'anemic'
 - c. got-oso
gout-OSO
'gouty'
 - d. grip-oso
flu-OSO
'fluey'
- e. Other types of properties which are used to describe the characteristics of an entity
- (29) a. rítm-ico
rhythm-ICO
'rhythmic'
- b. armón-ico
harmony-ICO
'harmonic'
 - c. defectu-oso
fault-OSO
'faulty'
 - d. exit-oso
success-OSO
'successfull'

How about the type of possession that these adjectives express? As we previously mentioned, some studies on possessive adjectives have claimed that they can only be built over nouns that express a part-whole relation with the modified noun; thus,

possessive adjectives would be restricted to the expression of inalienable possession relations. This is particularly central in the case of Hudson (1975) and Gil Laforga (2014), whose goal is to explain the (alleged) ungrammaticality of formations such as those in (30), where the base noun is not a constituent part of the subject of predication.

- (30) coch-ado ‘car-ADO, with a car’, novi-ado ‘sweetheart-ADO, with a partner’

Such restrictions are attested in morphological processes; in fact, Spanish has a productive compounding operation involving a noun and an adjective that is only grammatical when the noun expresses a body part (30) (García Lozano 1978; Bustos Gisbert 1986; Val Álvaro 1999; Sánchez López 2003; Fábregas 2004; Martín García 2014: 77–81).

- (31) a. pel-i-rrojo
hair-LE-red
‘red-haired’
b. man-i-largo
hand-LE-long
‘long-handed’
c. *coch-i-nuevo
car-LE-new
Intended: ‘with a new car’

The question is whether such restriction also applies in the case of derived adjectives. Studies about inalienable possession (Bally 1926; Guéron 1985, 1986; Nichols 1988; Chappell & McGregor 1996; Heine 1997; Dahl & Koptjevskaja-Tamm 1998; Koptjevskaja-Tamm 2003; Croft 2008) agree that, when a language has a grammatically relevant distinction between inalienable and alienable possession, the class that most naturally falls into the first category refers to body parts, followed by clothing (*abrigo* ‘coat’, *sombrero* ‘hat’...) and kinship terms (*amigo* ‘friend’, *hermano* ‘brother’, *jefe* ‘boss’...). One first problem for the proposal that possessive adjectives are restricted to inalienable possession is that this robust typological hierarchy is not followed. Granted, there are plenty of possessive adjectives built over body part nouns, and some that are built with items of clothing, but kinship terms are not used in Spanish as bases for this type of adjective. Instead, other conceptual classes are widely attested, as we have seen: illnesses, moral qualities and mental states. Calling these ‘inalienable possession’ forces a definition that is too general to be of any use in grammatical description.

Consider, as an illustration of this problem, the grammatical encoding of inalienable possession in Spanish. A well-described property of body part nouns in Spanish (and other Romance languages; cf. Vergnaud & Zubizarreta 1992) is that

they prefer a possessive dative + definite article construal over the more general possessive pronoun construction. (32b) and (33b), although not ungrammatical, are not compatible with the inalienable possession reading.

- (32) a. A María le operaron la pierna.
to María her operated.3PL the leg
'María had her leg operated'
- b. *Operaron su pierna.
operated.3PL her leg
- (33) a. Juan se rompió el dedo.
Juan SE broke the finger
'Juan broke his finger'
- b. *Juan (se) rompió su dedo.
Juan SE broke his finger

With items of clothing this construal avoiding the possessive pronoun is possible, but not forced (34); incidentally, the same pattern applies to entities of the personal sphere of someone, such as *coche* 'car' and *novia* 'girlfriend', whose alleged unavailability as bases of possessive adjectives is the whole motivation for Hudson's claim (35).

- (34) a. A Juan le robaron la camisa.
to Juan him stole.3PL the shirt
'Juan had his shirt stolen'
- b. A Juan le robaron su camisa.
to Juan him stole.3PL his shirt
'Juan had his shirt stolen'
- (35) a. A Juan le robaron el coche.
to Juan him stole.3PL the car
'Juan had his car stolen'
- b. A Juan le robaron su coche.
to Juan him stole.3PL his car
'Juan had his car stolen'

The pattern displayed by nouns not denoting body parts does not suggest that they are grammaticalised in Spanish in any way different from entities that are clearly not inalienably possessed, which makes the claim that only inalienable possession is expressed in possessive adjectives quite arbitrary.

There is a related problem that is also relevant within this discussion. A common observation in the literature on possessive adjectives and modification in general (Hudson 1975; Beard 1976, 1993; Varela 1990a; Martín García 2014) is that sequences such as (36) are not acceptable.

- (36) #un hombre dentado
 a man toothed
 ‘a man with teeth’

Generally, the explanation given to such incompatibilities relates to a pragmatic principle of what counts as an informative statement: (36) is anomalous for the same reason that *a built house* is weird, because the property described by the modifier is entailed by the lexical meaning of the noun. As soon as additional information is added (*a house built in 1994*), the combination is acceptable. In the case of possessive adjectives this involves, for instance, privation – that is, absence of possession, obtained through a negative prefix – (37a), evaluation of the possession (37b) or substituting the head noun with an entity not assumed to have teeth (37c).

- (37) a. un hombre des-dentado
 a man DES-toothed
 ‘a toothless man’
 b. un hombre dent-udo
 a man tooth-UDO
 ‘a man with big teeth’
 c. una sierra dentada
 a saw tooth-ed
 ‘a serrated saw’

For our purposes the question is to what extent one can say that the teeth count as holding a part-whole relation with the saw. Undoubtedly, once the saw has the ‘teeth’ (in a metaphorical sense), they count as an integral part of the saw, but this applies, essentially, to any notion expressed by a possessive adjective. The crucial problem is that teeth are not a part of a saw, to the same extent that almonds are not an integral part of an ice cream, but if we talk about *un helado almendrado* ‘an ice cream almond-ADO, an ice-cream with almonds’ it is clear that we imply that almonds are an integral part of that ice-cream.

The conclusion, then, is that once the possessive relation is grammaticalised through an adjective, the natural interpretation is that the entity modified has the base noun as an integral part of it, in a sense that there is a conceptually relevant subtype of the modified noun that is defined by possessing what the adjective expresses. This is an expected effect of the fact that the motivation to coin a new word is that the speaker feels the need to express a new distinction, concept or class, and – crucially – it is independent of whether the base noun naturally belongs to classes used to express inalienable possession. Perhaps the best candidates to produce adjectives that characterise entities by what they possess are those that can express part-whole relations, but the prediction is that if a speaker establishes a distinction between subclasses dependent on the possession of something, a new possessive

adjective will be coined, even when talking about cars, planes and trains. In fact, there are very clear examples of non part-whole relations that have a corresponding possessive adjective; we will start with two examples that are standardly accepted in Spanish, and then we will show a few occasional coinages, documented through Google, that further illustrate the point.

From the noun *dinero* ‘money’, all Spanish varieties use the adjective *adinerado* ‘wealthy’, with the form *dinerado* ‘wealthy’ also documented through Google – note that the former adjective is parasynthetic; see Chapter 5, §5. on parasynthetic adjectives. There is no plausible interpretation of the relation between money and a human that can count as a part-whole relation. Similarly, the adjectives *titulado* ‘graduate’ and *diplomado* ‘holder of a diploma’ come respectively from the nouns *título* ‘certificate’ and *diploma* ‘diploma’, which again are relevant notions in our society to talk about subtypes of professionals, but do not involve a part-whole relation.

Some occasional coinages show that even the classes that are explicitly claimed to be ungrammatical by Hudson (1975) can be used, provided their possession defines a contextually relevant subclass. The examples (38) and (39) refer, respectively, to a world that has internet and to a deliveryman that has a van:

- (38) En este mundo globalizado, interconectado, internet-ado y demás,
in this world globalised interconnected internet-ADO and so,
 ahora es posible usar los últimos avances
now is possible use the last innovations
 ‘In this globalised, interconnected world with internet and so on, it is now possible to use the very last innovations’
- (39) algún repartidor furgonet-ado al que empapela la Benemérita
some deliveryman van-ADOWhom fines the Civil-Guard with justice
 con justicia por adelantar en línea continua.
for pass at line continuous
 ‘...some deliveryman with a van that the Civil Guard fines because he passed another driver despite the white line’ [Google]

These formations may feel surprising, but what is crucial for us is that the form was produced with specifically the regular meaning expected from possessive adjectives.

Even a plague of insects is enough to grant the coinage of a possessive adjective, as the following example illustrates; this sentence appears in a discussion forum on gardening. Another user had just reported that cockroaches had ruined her coffee bush, and the speaker comments:

- (40) Y eso de café cucarach-ado como que no me sabe.
 and that of coffee cockroach-ADO as that not me tastes
 ‘And the prospect of coffee with cockroaches, well, that does not please me’

We conclude, thus, that there is no sense in which one can properly restrict possessive adjectives to just inalienable possession.

2.3 Possessive adjectives and other classes of denominal adjectives

Another issue that has been discussed in the literature (see Beard 1993; Rainer 1999) is the semantic relation between possessive adjectives and other classes of denominal adjectives, particularly similitudinal ones. The reason, as we will see, is that in many cases the same affixes produce both: for instance, *-oso* produces possessive adjectives (*armoni-oso* ‘harmonious’) and similitudinal ones (*algodon-oso* ‘cotton-like’).

There are two options: the first one is to propose that possessive adjectives and similitudinal adjectives are built through different structures – either involving distinct heads, or involving distinct configurations using the same heads. The second one is to propose that possessive and similitudinal adjectives are built using exactly the same structures and units, and deriving the differences between the two classes from contextual properties, specifically from the semantic interpretation of the base. For instance, bases denoting abstract entities deprived of physical properties that can be used as a comparison base would not trigger a similitudinal reading, and would only be used as bases in possessive construals.

- (41) *intencion-ado* ‘intention-ADO, with intention’, *cafein-ado* ‘caffeine-ADO, with caffeine’, *desparpaj-ado* ‘self-confidence-ADO, with self-confidence’

This proposal – where possessive and similitudinal are just two readings of the same structure – has some initial plausibility, such as the widely cited fact that many suffixes allow both readings (see Chapter 5, §4):

- (42) a. *achac-oso*
ailment-OSO
‘with ailments’
b. *chicl-oso*
gum-OSO
‘with the consistency of gum, like gum’
- (43) a. *renombr-ado*
renown-ADO
‘with renown’
b. *perl-ado*
pearl-ADO
‘with the shape of pearls, like pearls’

Some pieces of evidence, though, suggest that the first solution is initially more plausible, at least for Spanish. In the first place, Spanish does differentiate the two readings morphologically. The language has suffixes that are clearly specialised in a purely possessive meaning, and suffixes that can only be similitudinal. A clear case of the former is *-ón*, which never allows for similitudinal readings. Even in the non-compositional formation in (44b) a possessive gloss is more appropriate than a similitudinal one.

- (44) a. trip-ón
belly-ON
'with a big belly'
b. cabez-ón
head-ON
'with a big head, stubborn'

An example of a suffix that is specialised in a similitudinal reading when used qualifyingly is *-uno*, and we will see several others in the next section.

- (45) caball-uno 'horse-UNO, horse-like'; cerv-uno 'deer-UNO, deer-like'; chot-uno 'baby.goat-UNO, goat-like'; frail-uno 'friar, friar-like'; gat-uno 'cat-UNO, cat-like'; hombr-uno 'male-UNO, male-like'; mor-uno 'Moor-UNO, Moor-like'; perr-uno 'dog-UNO, dog-like'

Another problem for the theory that the reading depends solely on the nature of the base is that some adjectives allow both readings, while others only allow one of them, without any obvious systematic difference in terms of the meaning of the corresponding base nouns. (46) is an example of an adjective that allows both readings with the same base noun.

- (46) terr-oso
earth-OSO
'earth-like'

(47) gives one case of an adjective that must be possessive, and one case that must be similitudinal.

- (47) a. jug-oso
juice-OSO
'with juice'
b. sed-oso
silk-OSO
'like silk'

The same operation that allows speakers – according to the ‘two readings’-theory – to interpret *tierra* ‘earth’ both as something that can be possessed and as something whose properties can be used to describe other entities should also allow speakers to treat *seda* ‘silk’ as something that can be possessed, or *jugo* ‘juice’ as something whose most salient properties can be used to describe something else. The ‘two readings’-theory lacks an explicit account of how each base allows or blocks the relevant interpretations; for this reason, the theory has to treat cases such as those in (47) as instances of specialisation where the whole word is listed as carrying only one of the predicted meanings. This would imply giving up an account where the difference between similitudinal and possessive adjectives is derived from the meaning of the base noun, or the structure.

2.4 The readings of degree modifiers

Possessive adjectives are gradable, like other qualifying adjectives, but in their case the gradation is interpreted as affecting the quantity of the possessed entity. When the base noun is mass, the degree modifiers quantify over the accumulation of the substance expressed by the noun if the base noun denotes a physical entity.

- (48) a. *muy lan-udo*
 very wool-y
 ‘with a lot of wool’
 b. *un poco aren-oso*
 a bit sand-y
 ‘with a bit of sand’

If the base noun expresses a property, the degree modifier in fact quantifies over the degree of that property (49a), and if it expresses a state, it quantifies over the intensity of that state (49b).

- (49) a. *muy bullici-oso*
 very racket-OSO
 ‘with a big racket’
 b. *muy sed-iento*
 very thirst-y
 ‘with an intense thirst’

When the base noun receives a count noun default interpretation, the degree modification quantifies over the size of the unit, not its number. (50a), for instance, cannot be used to say that a particular animal has many humps, but just to indicate that the single hump is very big.

- (50) a. muy jorob-ado
 very hump-ADO
 ‘with a big hump’
 b. muy cej-udo
 very eyebrow-UDO
 ‘with very big eyebrows’

In some few cases, the base noun denotes an entity that typically appears in groups. Degree modification in this case measures the size of the group, namely how many members it contains.

- (51) a. un poco pec-oso
 a bit fleckle-OSO
 ‘with a few freckles’
 b. muy nub-oso
 very cloud-y
 ‘with a lot of clouds’

2.5 On the existence of privative adjectives

In Spanish, privative adjectives must be derived through prefixation from possessive adjectives. Spanish lacks a specialised privative morpheme (*-less* or *-free* in English, cf. *graceless*, *sugar-free*). Even though there are a few Ancient Greek loanwords that contain the so-called privative alpha *a-* (52), there is no productive rule that involves that morpheme in the expression of privation; the few more recent coinages take relational adjectives as their bases (53).

- (52) a-céfalo ‘without head’, a-morfo ‘without shape’, a-fónico ‘without voice’, á-tono ‘without stress’, a-nónimo ‘without name’
 (53) a-legal ‘not typified by legal rules’; a-confesional ‘not forcing any type of religious doctrine, secular’

Normally, privation is expressed adding the prefix *des-* to a possessive adjective without valuation. Those adjectives formed by suffixes such as *-udo*, *-ón* and *-azas* are excluded as bases for privative adjectives.

- (54) a. lengu(a) ‘tongue’ > lengu-ado ‘with a tongue’ > des-lengu-ado ‘without a tongue’
 b. dient(e) ‘tooth’ > dent-ado ‘with teeth’ > des-dent-ado ‘without teeth, or with few teeth’
 c. cerebr(o) ‘brain’ > cerebr-ado ‘with brain’ > des-cerebr-ado ‘without brain’
 (55) a. bigot-udo ‘with a big moustache’ > *des-bigot-udo
 b. cabez-ón ‘with a big head’ > *des-cabez-ón

The principle of pragmatic informativeness that we discussed in the case of *dentado* ‘toothed’ means that privative adjectives are always allowed in more contexts than the equivalent possessive adjectives, particularly whenever the base is a body part. *Cerebrado* ‘with a brain’ can be used to distinguish types of animals by the complexity of their nervous system; it is also used to name one type of alien in a famous videogame. *Descerebrado*, in contrast, can be applied to any human entity, in addition to other organisms to differentiate them from those that have a brain.

Interestingly, privative adjectives are formed mainly over bases that denote body parts, that is, over possessive adjectives that can denote inalienable possession. With bases denoting qualities, there are a few cases, and to the best of our knowledge there are no privative adjectives involving bases denoting states, illnesses or alienable physical entities.

- (56) a. des-a-fortun-ado
DES-A-luck-ADO
‘without luck’
b. in-armón-ico
IN-harmony-ICO
‘without harmony’
- (57) a. *in-hambr-iento, *des-hambr-iento...
IN-hunger-IENTO DES-hunger-IENTO
Intended: ‘without hunger’
b. *in-grip-oso, *des-grip-oso
IN-flu-OSO DES-flu-OSO
Intended: ‘without flu’
c. *in-pulg-oso *des-pulg-oso
IN-flea-OSO DES-flea-OSO
Intended: ‘without fleas’

The reasons for this are unclear. One could think that blocking is involved in such cases: the impossible privative adjectives have to do with two situations: cases where there is a deverbal result participle that codifies the intended meaning (58) and cases in which not possessing the entity is the expected situation given a normalcy standard.

- (58) a. des-pulg-a-do (from *despulsar* ‘to remove fleas’)
un-flea-ThV-Part
‘without fleas’
b. des-camis-a-do (from *descamisar* ‘to remove the shirt’)
un-shirt-ThV-Part
‘without shirt’

In other words: one could think that to express the privation of many entities there are already separative verbs (Gibert Sotelo 2017) built from the same bases, and their participles are regularly available, which in the mind of speakers can make the coinage of new privative adjectives unnecessary. In other cases, talking about the privation of something is not pragmatically informative (again, *#a built house* comes to mind) because that privation corresponds to the normalcy standard. Body parts avoid both situations because they are inalienably possessed: with them, privation is what is worth describing, and their conceptually basic nature favours that the verbs expressing removal of a body part are not built compositionally from the nouns (cf. *amputar* ‘amputate’, *decapitar* ‘decapitate’ vs. **des-braz-ar* ‘to remove arms’, **des-piern-ar* ‘to remove legs’, and *des-cabez-ar* ‘to overthrow’, with a non literal meaning).

However, there could be deeper grammatical reasons for this restriction on privative adjectives. We leave the matter here, although further research will be needed in the future.

2.6 On the relation between participles and possessive adjectives

A common observation in the literature is that across languages possessive adjectives frequently use at least one morpheme that is also used to build participles.

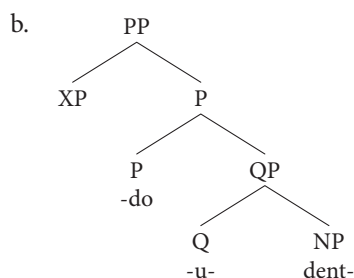
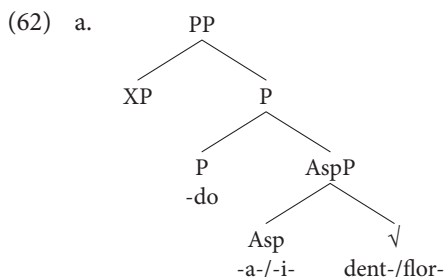
- (59) a. dent-ado [Spanish]
 tooth-ADO,
 ‘toothed’
 b. cans-a-do
 tire-ThV-Part,
 ‘tired’
- (60) a. one-ey-ed [English]
 b. clean-ed

Other languages where possessive adjectives share a participial form are Italian, French, Norwegian and Portuguese. That different languages have the same pattern suggests that this is not a case of accidental homophony, but that there is a deep connection between participles and morphemes expressing possession.

Even though the clearest connection in Spanish is the one between *-ado* and the participle, the valorative suffix *-udo* shows traces of the participle through the ending *-do*, even though *-u-* is never a theme vowel in front of participial morphology. There is, additionally, at least one possessive adjective that takes an ending that looks like the regular participle of the third conjugation (61).

- (61) flor-ido
 flower-IDO
 ‘with flowers’

In fact, Gil Laforga (2014: 235–237) divides all these possessive suffixes into two parts, explicitly claiming that the *-do* morpheme found here is the participial one and the vowel corresponds to an aspectual head or a quantifier.



Gil Laforga herself (footnote 122) notes some technical complications to this proposal, but we want to point out here a couple more descriptive problems. The main one has to do with the aspectual value of participles against the aspectual value of possessive adjectives. An adjectival participle in Spanish – when it contains aspect, see Chapter 9, §3 – must combine with the copulative verb *estar* (cf. for instance, Brucart 2012; Camacho 2012), which is generally interpreted as the stage-level copula (cf. Arche 2006).

- (63) a. {*estar* / **ser*} preocupado
 be^{estar} / be^{ser} worried
 b. {*estar* / **ser*} cansado
 be^{estar} / be^{ser} tired
 c. {*estar* / **ser*} aburrido
 be^{estar} / be^{ser} bored

In contrast, possessive adjectives typically combine with the copula *ser*, as they denote characteristic properties of their subjects.

- (64) ser {florido / dentado / alado / barrigudo}
 be^{ser} flower-ed / tooth-ed / wing-ed / big-belli-ed}

This means that if the morphosyntactic features of the participle are behind the morphemes used for possessive adjectives, at the very least the aspectual information associated to participles is not included in such cases.

Second, an additional problem is that the structure in (62a) involves a root normally categorised as a noun that is dominated by aspect, and carries a verbal theme vowel. This builds verbal structure on top of the root, but the roots cannot be used as verbs: the verbs in (65) do not exist.

- (65) *alar (Intended: 'to have / get wings'), *dentar (Intended: 'to have / get teeth'),
 *barbar (Intended: 'to have / grow a beard'), *florir (Intended: 'to have / produce flowers')

Thus, the proposed decomposition in Gil Laforga (2014) cannot be accepted for empirical reasons; we will return to the issue of how possessive adjectives and participles relate in the analysis.

3. Analysis of possessive adjectives

In conclusion, the main properties of possessive adjectives are the following:

- a. Conceptually, the bases are not restricted to inalienably possessed entities
- b. Privation can be expressed only in the case of possessive adjectives
- c. There is some connection to the participle, but the possessive adjective does not share aspectual information with participles

A complete analysis should account for all these properties; in what follows we will argue that such an analysis is possible. Our main claims can be summarised as follows:

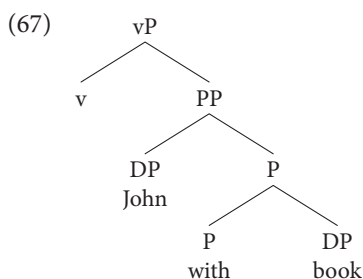
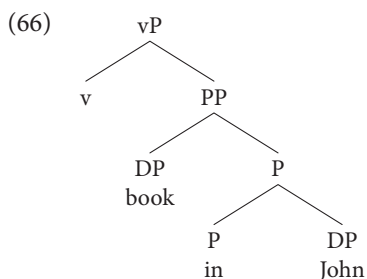
- a. Possessive adjectives and possessive constructions share a common structure, which is differentiated through the functional heads that dominate it.
- b. In possessive adjectives, in contrast to nominal genitival constructions, the prepositional head Poss does not project the possessor as an external argument; instead, this argument is introduced as the subject of a PredP head.
- c. The relation between participles and possessives is not one of structural decomposition, but one of semantic similarity, as possession is a stative non dynamic relation devoid of agent-related entailments.

- d. Conceptually, the interpretations of the different possessive adjectives are a function of the conceptual links that world knowledge establishes between the base and the subject, intermediated by the denotation of Poss.

3.1 Possessive adjectives and possessive structures

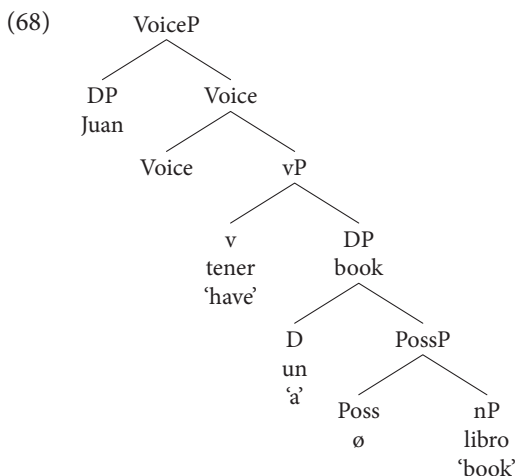
The morphosyntactic structure of possession in natural language has been studied from many different perspectives, but here we will focus on the tradition that reduces the possessive verb *tener* 'to have' to the combination of a light verb with a prepositional structure (Benveniste 1966; Freeze 1992; Kayne 1993, 2000; Hale & Keyser 1993; Den Dikken 1997; Ritter & Rosen 1997; Harley 1998, 2002; McIntyre 2005; Myler 2017).

There are two versions of this analysis. In the first one (Szabolcsi 1981; Freeze 1992; Hoekstra 1994), the prepositional structure involves a locative relation where the possessor is the complement ('X is in Y'; 66). In the second one the relation is one of contact ('Y is with X'; 67) and the possessed entity is in the complement position (Harley 1998; McIntyre 2005; Myler 2017).

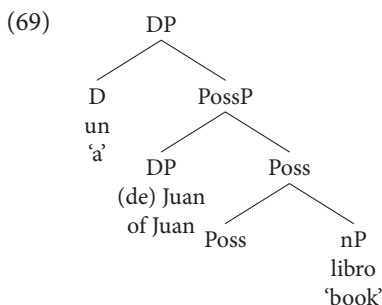


Myler (2017) elaborates on the second structure, and shows that it has distinct advantages over the first. For one, the basic relation 'Y with X', where the possessor is the specifier, allows for a unified treatment of *tener*-structures and genitive

possessor structures: both are cases where the ‘head’ noun is the possessed entity. Myler’s specific structure is presented in (68), with irrelevant details omitted.



The phrase *tener un libro* is built combining two structures: a DP structure that contains a Possessive head between the noun and the determiner, and a light verbal layer. *Tener* ‘have’ is the spell out of the same light verb *ser* ‘be’ in the context where *v* is dominated by transitive VoiceP. This VoiceP introduces the possessor in its specifier. In contrast, when the structure is not dominated by a transitive VoiceP, the possessor is introduced as the specifier of PossP (Ritter & Rosen 1997), which produces – *pace* noun movement and case assignment – the structure of a genitival possessor.



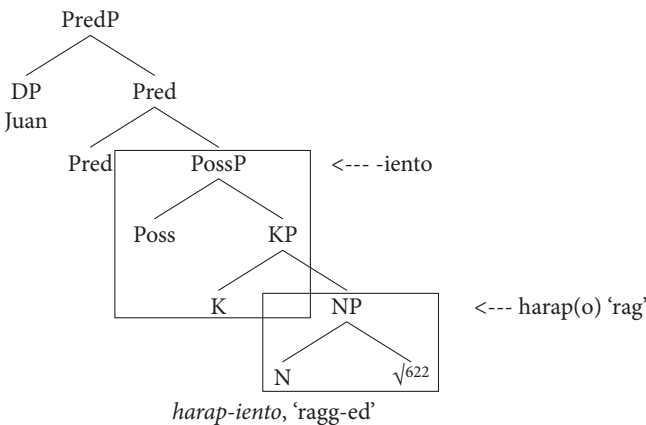
Poss is, in Myler’s analysis, the head that expresses the relation both in inalienable and alienable possession. It denotes a triplet, a relation between two individuals and an eventuality, such as that the two individuals are in a possession relation with respect to an eventuality ‘e’.

$$(70) \quad [[\text{Poss}]] = \lambda P \lambda y \lambda x \lambda e. P(x) \ \& \ \text{Poss}(y, x, e)$$

Our claim is that the structure of a possessive adjective involves the nominal base and the possessive head in (69), without further functional structure (such as number, quantifiers or DPs). We will introduce two related differences with respect to Myler (2017) – we believe that neither of them changes the spirit of his analysis. The first one is that we will not use an argument ‘e’ for eventuality. In Myler’s proposal, eventuality is a place-holder used to establish a relation between the two arguments x and y: specifically a non-dynamic relation. In our account, the same role is performed by R(elation), introduced by KP. The second one is that, given the facts discussed in the previous chapter, we will add this R as the denotation of KP, therefore treating Poss as the specific head used in the lexical PP area. KP introduces R, and PossP, as a subcase of PP, takes R as an argument and specifies it as Possession.

(71) a. $[[\text{Poss}]] = \lambda P \lambda y \lambda x \lambda R [P(x) \ \& \ \text{Possession}(y, x, R)]$

b.



The structure produces the denotation in (72): it denotes that an entity y (the subject of predication of the adjective) is in possessive relation with rags – or in other words, that the entity y has rags. The Poss head specifies the R relation introduced by K as possessive:

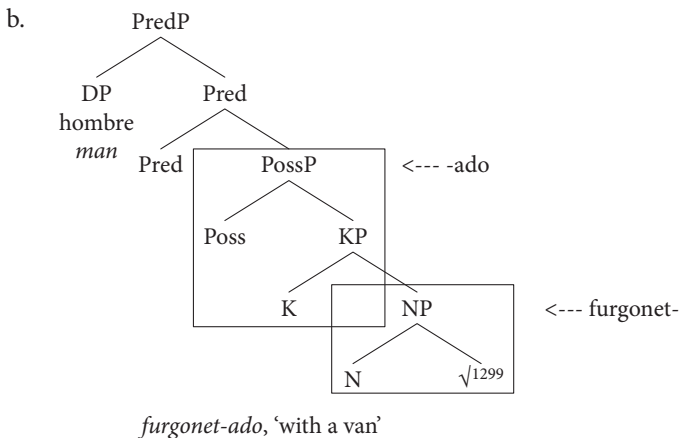
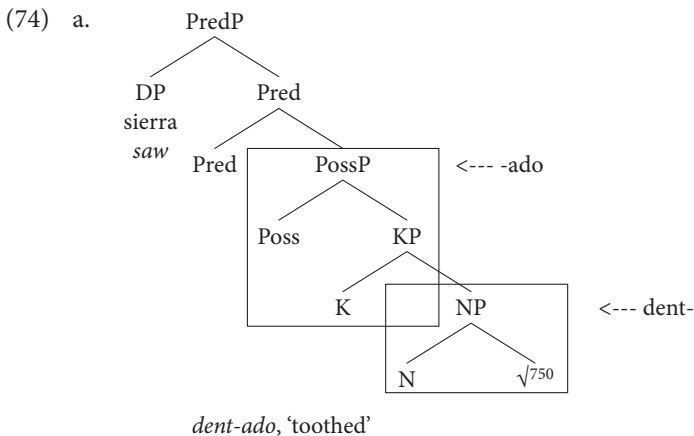
(72) $[[\text{PossP}]] = \lambda y \lambda x \lambda R [\text{harapo}'(x) \ \& \ \text{Possession}(y, x)]$

PredP then passes up the denotation that there is a possessive relation between the rags and an entity x, which is identified with the subject of predication. The role of PredP in this context is essentially the same that Ritter and Rosen (1997), Schäfer (2008) and Myler (2017) associate with a VoiceP / FP unable to assign a theta-role by itself: it simply passes up the theta-role related to the denotation of its complement, in this case the unsatisfied Poss relation. We assume – in parallel with Myler (2017: 260) that at PredP level the internal argument is existentially bound, producing (73) as the denotation of the whole structure.

(73) $[[\text{PredP}]] = \exists R[\text{harapo}'(x) \ \& \ \text{Possession}(\text{Juan}, x)]$

This is the basic idea. In what follows we will elaborate on it through the explanation of how the different properties of possessive adjectives follow from (71) and (72).

Poss is, in this analysis, the head responsible for establishing a possessive relation in verbal structures with *tener* 'have', genitive-marked nouns and possessive adjectives. The head is necessary to obtain the right relation irrespective of whether the base noun x expresses a part-whole relation or not. The prediction is that in structural terms there will be no way to ensure that possessive adjectives are restricted to inalienable possession, a welcome result given the pattern of data that we saw: the end result is that the subject of predication possesses the entity in the base, be it originally an inalienable noun or not. The principle of informativeness will determine in each case whether the predication is significant or not:



3.2 The relation with the participle

In (71) and (72) the denotation of the Poss head involves establishing a non-dynamic relation between a possessor and the base noun such that there are no agent-related entailments with the subject. Possession, and, as we will also see, similitude, cannot be conceived of as agentive relations, unlike causative and dispositional denominal adjectives. This makes the connection with participial morphology expected.

Even though the denotation of participles in Spanish is a complex issue (cf. Chapter 9, and also Wasow 1977; Kratzer 2000; Embick 2000, 2004; Bosque 2014; Gehrke 2015, among many others), one basic observation is that participles tend to denote – in the absence of other modifiers – states, either naming the state of a non-dynamic verb or providing the result state of a telic dynamic verb (75). In Spanish, participles are used to express perfect aspect, which highlights the state following the termination of an event even in the case of atelic predicates (76).

- (75) a. amado ‘loved’ (state)
 b. odiado ‘hated’ (state)
 c. construido ‘built’ (result state)
 d. escrito ‘written’ (result state)
- (76) a. He conducido ese coche.
 have.1SG driven that car
 ‘I have driven that car’
- b. He vivido en este barrio.
 have.1SG lived in this neighbourhood
 ‘I have lived in this neighbourhood’

Moreover, and again with exceptions that require additional modifiers, the participial morphology in *-do* tends to relate to non-agentive interpretations of the subject – in other words, participles are generally passive.

The relation between participles and possessive suffixes, we claim, is due to the tendency of both to express stative relations where the subject lacks agent implications. Our contention is that the connection, at least for Spanish, is historical but not synchronic. In other words: the participle and the possessive affix are similar in Spanish because of a historical connection which is motivated by the semantic relation between possession and these types of states, but contemporary speakers of Spanish do not analyse possessive affixes as participles. This is enough to explain why possessive *-ado* combines with bases that cannot be assigned to a verbal conjugation class – because, in that suffix, /a/ is a segment, but not a morpheme – (77). It also explains why possessive adjectives do not combine with *estar*, as is generally expected of adjectival participles (78), and it avoids the problem of proposing a

theme vowel *-u-* which only appears in *-udo* formations and is never used outside that particular evaluative possessive affix.

- (77) a. dentado ‘toothed’ - *dentar ‘to have / grow teeth’
 b. intencionado ‘intended’ - *intencionar ‘to have an intention’
- (78) a. {ser / *estar} dentado
 be^{ser} / be^{estar} toothed
 b. {*ser / estar} agotado
 be^{ser} / be^{estar} exhausted

The semantic similarity between adjectival states and possession justifies the surface similarity without a synchronic decomposition that derives both from the same units. The correlation already existed in Latin, which according to Leumann (1977) inherited the relation between participles and possessives from Indoeuropean. Pharies (2002: 43) notes that Latin already used forms in *-atus* to derive possessive adjectives (79), and differentiates these formations from those denoting event or result deverbal nouns (*limpiado* ‘cleaning’). With respect to *-udo*, Pharies (2002: 513–514) relates *-u:tus* with the vowel *u:*, characteristic of the fourth declension – therefore not a verbal affix, and the ending *-tus*, which he treats as a possessive affix (80).

- (79) a. ans-a:tus
 handle-ATUS
 ‘with a handle’
 b. al-a:tus
 wing-ATUs
 ‘winged’
- (80) a. can-u:tus
 grey.hair-UTUS
 ‘with grey hair’
 b. corn-u:tus
 horn-UTUS
 ‘with horns’.

Thus, in our proposal *-ado* and *-udo* in Spanish are not decomposed by native speakers, and the similarity relation is due to a historical evolution based on the semantic similarity between states and possession. That is the reason why different languages have similar connections, because – presumably – the semantics of possession is interpreted as a stative relation without agent-related entailments in every language. If the language has participles that are also used to express states and that prefer non-agentive subjects, then the similarity is expected beyond a mere accidental homophony.

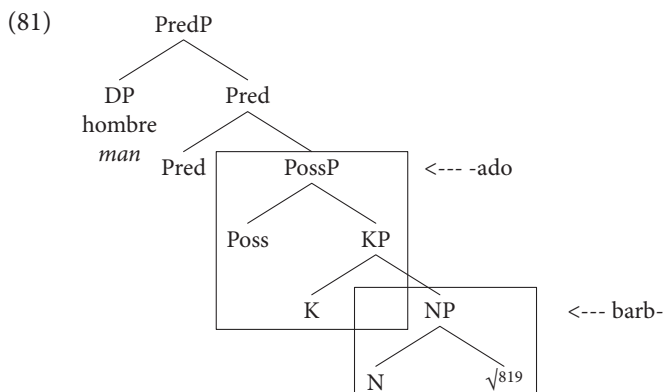
3.3 Underspecification: How it is solved

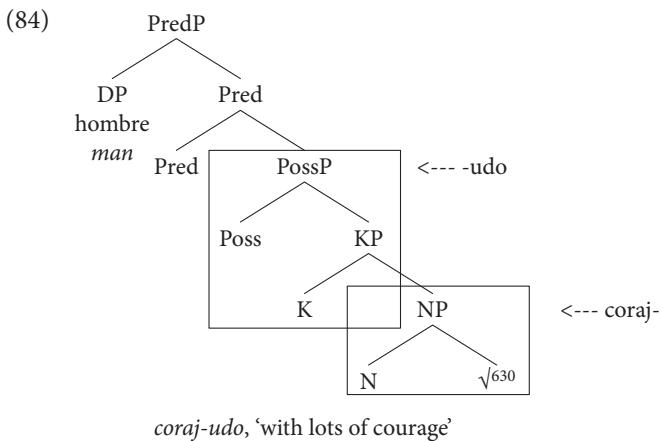
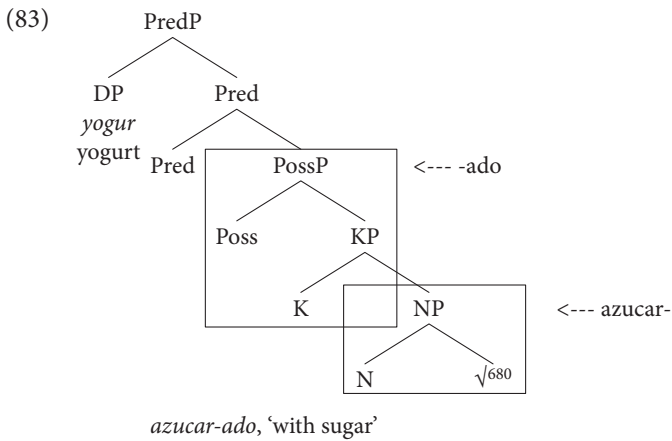
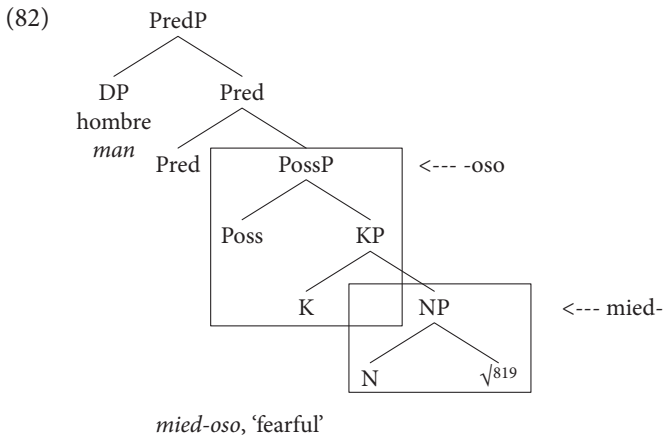
Let us now consider the question of how the underspecified possessive relation is established. We have followed a long tradition in the claim that possession in the verbal domain is expressed through a light verb in combination with a relational structure that, ultimately, is responsible for the argument interpretation of the subject and object. In the particular implementation assumed here, KP introduces a relation whose conceptual meaning is specified by PossP. The base names the first member of the relation, and PredP introduces the second member as its subject.

The particular ways in which the possessive interpretation is then determined among the conceivable relations that can be established between the subject of PredP and the base noun are not completely open – contra an analysis of possession as a totally underspecified relation R that is pragmatically specified; specifically, we have seen that for instance locative structures are not expressed through possessive affixes, in the same way that they cannot be expressed with the verb *tener*. The reason is that PredP takes PossP as its complement, and PossP already restricts the kinds of relation that the subject of PredP can establish.

The consequence of this is that PossP is a necessary member inside the structure, one that blocks the expression of all types of relation with suffixes like *-udo*, and ultimately derives the difference between similitudinal and possessive adjectives, to which we will return in §5.

That said, world knowledge – or, in other words, conceptual semantics as expressed by the items used to spell out the syntactic structure – plays an important role in this process. Whether the possession is interpreted as a part-whole relation (81), the experiencing of a psychological state (82), alienable possession (83) or the possession of specific qualities (80) depends on world knowledge, specifically on the conceptual information associated to the base and the subject.





If the base noun, for the subject, counts as something that – in our world knowledge – is grown by an internal process of the subject, or belongs to the internal structure of an inert subject, then we will interpret the relation naturally as an inalienable possession relation. Note, however, that the same structure in (81) would be interpreted as alienable possession if the subject was a statue: then we would naturally read the adjective as meaning that someone put a fake beard on the statue. With respect to yogurt, sugar is something that it can have or not, but something that is added to the yogurt externally; hence (83) will naturally be interpreted as alienable possession, just by our world knowledge.

If the base does not denote a physical entity, then the literal possession meaning is excluded, and depending on the conceptual meaning of the base it can be interpreted as a state that holds of a subject – as in (80) – or as a quality that a subject displays – as in (84). In both cases, the crucial property is that Spanish uses *tener* ‘have’ as a light verb for both, so the structure itself does not choose one above the other.

3.4 Degree readings

Given that possession is itself non-gradable, the degree quantifies over the quantity or number of entities expressed by the base noun, as we saw above: being ‘very bearded’ would be ‘to have a big beard’. As mentioned earlier, we place Degree Phrase immediately above ScaleP – the PathP equivalent. DegP is below PredP – triggering, correctly, the interpretation that the property P in a particular degree is predicated of subject X, not that the property P is predicated in a particular degree of subject X.

(85) [PredP [DegP [ScaleP [PP [KP [NP...]]]]]]

Remember that degree modification gets different readings depending in part on the prototypical mass or count interpretation of the base noun. Specifically, we saw that count nouns tend to license the interpretation of degree modification as quantifying the size of the entity possessed – *muy barbado* ‘very bearded’ > ‘with a big beard’, while mass nouns license a ‘quantity of portion of substance’ reading – *muy aguado* ‘very watery’ > ‘with a lot of water’. Our claim is that these two distinct interpretations mean that inside the NP structure, the distinction between mass and count nouns is kept at the conceptual semantics level, but it is not syntactically represented. This is in accordance with the proposal made in Chapter 3, §3, where we argued that within relational adjectives the functional structure is severely impoverished, and cannot contain NumP.

Note that the reading of a quantifier with a mass or count noun is not always identical to the interpretation we get with possessive adjectives, and specifically the correlation breaks in the case of count nouns not interpreted as groups. The quantifier *mucho* ‘much’ with mass nouns does give a similar result (86):

- (86) a. tener [mucho [miedo]]
 have much fear
 b. muy [miedoso]
 very fear-ful

This correlation is captured in our structure assuming that the degree modifier is placed above the lexical PP layer, using the structure that Myler (2017) proposes, where the difference is whether PredP or vP dominate the degree + possessive constituent – leaving aside the difference in the category of the modifier, which depends on whether the noun stays as such or is recategorised.

- (87) a. [vP tener [QP mucho ... [PossP \emptyset [miedo]]]
 b. [PredP \emptyset [DegP muy... [PossP -oso [mied-]]]

The interpretation of quantifying over the possessive relation is that the possession is performed in a particular degree. Given that possession itself is not gradable – because it involves the binary opposition between having and not having, the degree is reinterpreted as involving a bigger or smaller amount of the substance expressed by the base, or the intensity of the state.

4. Similitudinal adjectives: Empirical properties

Let us now move to the second class of qualifying denominal adjectives, similitudinal adjectives. In contrast to possessive adjectives, similitudinal adjectives have been far less studied, for Spanish and otherwise. Beyond the general descriptive works mentioned also for the case of possessive adjectives, the study of similitudinal adjectives either involves comparing the class with relational and possessive adjectives (Malkiel 1959; Beard 1993; Faitelson-Weiser 1993; Díaz-García & Martín-Velasco 2013; Lieber 2015) or discussing the group within the context of the analysis of comparative structures – that is, without a specific focus on adjectival derivation – (Nicolaeva & Spencer 2008; Spencer 2008; van der Auwera & Sahoo 2015; Ylikoski 2017; Treis 2017). A possible exception is the description and analysis of similitude in the particular case of nominal bases related to animals and human proper names (Lisyová 2005, 2007; Malá 2014; Soliván de Acosta 2014), Bauer (1983), or Lorente (2000), although even in such works a considerable part of the discussion is devoted to how the relational and similitudinal readings relate to each other. Specifically for English, the study of the suffix *-ish* has been relatively extensive (Morris 2009;

Suguwara 2012; Bochnak & Csapak 2014; Duncan 2015; Oltra-Massuet 2017). Even though Oltra-Massuet & Castroviejo (2013, 2014) concentrate on verbal derivation, their contribution to the expression of manner and prototypicality in morphology is also relevant to understanding the general notion of similitude.

4.1 Conceptual properties

Similitudinal adjectives are less frequent than possessive ones, according to different studies. In Faitelson-Weiser (1993: 33), through the study of the lexicographic definition of different denominal adjectives, she shows that in her sample, 14% of the adjectives are defined as possessive, while only 7,69% are defined as similitudinal, with glosses such as ‘that looks like N’. For the specific case of *-oso*, which allows both possessive and similitudinal readings (Martín García 2008), Díaz García and Martín Velasco (2013) estimate that almost half of the adjectives documented in their sample are possessive, while only 11,39% are similitudinal. Even though they are clearly less frequent than possessive adjectives, they are still widely represented in the lexicon of Spanish. This section reviews their main empirical properties, before we move to the analysis in §3.

Similitudinal adjectives are always formed above nouns, and both proper names and common nouns can be used as bases.

- (88) Dante > dant-esco ‘Dantesque’; Cervantes > cervant-ino ‘Cervantes-like’; Quijote > quijot-esco ‘Quixotesque’; Hitler > hitler-iano ‘Hitlerian’; Aristóteles > aristotél-ico ‘Aristotelian’; Epicuro > epicúr-eo ‘Epicurean’; Versalles > versall-esco ‘Versaillesque, very refined’
- (89) perr-o ‘dog’ > perr-uno ‘dog-like’; zorr-o ‘fox’ > zorr-uno ‘fox-like’; joven ‘youngster’ > juven-il ‘juvenile’; siervo ‘serf’ > serv-il ‘servile’; príncip-e ‘prince’ > princip-esco ‘prince-like’; simio ‘monkey’ > simi-esco ‘monkey-like’; burdel ‘brothel’ > burdel-esco ‘characteristic of a brothel’

There is a certain controversy among scholars with respect to whether or not adjectives derived from proper names – deonomastic adjectives – are relational. Bosque (1993) is clear that examples such as those in (88) are qualifying adjectives, although it has to be taken into account that some of them can be used both as relational and as qualifying. Take for instance (90):

- (90) la producción cervant-ina
the production Cervantes-INO

This allows two readings; in the first one the adjective is indeed relational, and the phrase means ‘the works produced by Cervantes’, where the relation picked for R is ‘agent-of’. In the second interpretation, the reading is similitudinal, ‘works

produced that have some prototypical properties of Cervantes's works'. Only in this second reading does the adjective allow degree modification, *una producción muy cervantina* 'a very Cervantine production'. We are concerned here with just the second reading.

Most similitudinal adjectives derived from proper names come from anthroponyms (91), but they can derive also from toponyms (92). It is plausible that the preference for proper names of people has to do with the relative ease with which we can associate typical characteristics to individual humans – in physical appearance, style or behaviour, whereas places are only related to prototypical characteristics such as climate or height in some well-established cases.

- (91) James Bond > jamesbond-iano 'JamesBond-IANO, characteristic of James Bond'; Kant > kant-iano 'Kantian'; Góngora > gongor-ino 'Gongora-INO, intricate'; Berlanga > berlanga-iano 'Berlanga-IANO, surrealistic'
- (92) Versailles 'Versailles' > versall-esco 'Versailles-ESCO, gallant'; Siberia > siberi-ano 'Siberia-ANO, extremely cold'; Sáhara > sahar-iano 'Sahara-IANO, extremely dry'

With respect to common nouns, the most common classes are:

- a. Names of animals, particularly animals that are stereotypically related to moral or physical qualities:
- (93) a. águil-a 'eagle' > águil-eño 'eagle-EÑO, aquiline'
 b. leon 'lion' > leon-ado 'lion-ADO, tawny'
 c. caball-o 'horse' > caball-uno 'horse-UNO, similar to a horse'
 d. ratón 'mouse' > raton-il 'mouse-IL, mouse-like'
- b. Names of substances, fruits and other natural entities with salient physical properties:
- (94) a. sed-a 'silk' > sed-oso 'silk-OSO, silky'
 b. ceniz-a 'ash' > cenic-iento 'ash-IENTO, with the colour of ash'
 c. plom-o 'lead' > plom-izo 'lead-IZO, with the weight of lead'
 d. algodón 'cotton' > algodón-oso 'cotton-OSO, fluffy'
 e. cristal 'glass' > cristal-ino 'glass-INO, crystal-clear'
- c. Social roles, specially names of professions or those related to the status of humans:
- (95) a. fraile 'friar' > frail-uno 'typical of friars'
 b. dictador 'dictator' > dictador-ial 'typical of dictators'
 c. gángster 'gangster' > gangster-il 'typical of gangsters'
 d. soldad-o 'soldier' > soldad-esco 'typical of soldiers'

d. Names of places where typical behaviour is exhibited, or that are inhabited by social groups with stereotypical properties:

- (96) a. tabern-a ‘tavern’ > tabern-ario ‘characteristic of a tavern’
 b. cárcel ‘jail’ > carcel-ario ‘which can be expected in a jail’
 c. provinci-a ‘province’ > provinci-ano ‘not cosmopolitan’
 d. arrabal ‘slums’ > arrabal-esco ‘which one can expect in the slums’

These are not the only classes, but the most relevant ones; depending on the specific property highlighted, more specific groups can be defined. For instance, Rainer (1999: 4628) highlights the group of nouns referring to geometric objects, which always produce similitudinal adjectives expressing shapes (97a–d). Finally, other nouns are difficult to classify in one specific class with many other members (97e–h); however, the classes mentioned are arguably the most general and frequent ones.

- (97) a. con-o ‘cone’ > cón-ico ‘conical’
 b. cilindr-o ‘cylinder’ > cilíndr-ico ‘cylindrical’
 c. triángulo ‘triangle’ > triangul-ar ‘triangular’
 d. cub-o ‘cube’ > cúb-ico ‘cubic’
 e. cadáver ‘corpse’ > cadavér-ico ‘cadaverous’
 f. apocalipsis ‘apocalypse’ > apocalípt-ico ‘apocalyptic’
 g. varón ‘male’ > varon-il ‘virile’
 h. torrent-e ‘torrent’ > torrenc-ial ‘torrential’

In terms of which suffixes are used, the most usual ones are *-esco*, *-uno*, *-izo*, *-il*, *-(i)ano*, *-ero*, *-ario*, *-ado*, *-ico*, *-iento*, *-oso* and *-ino*.

- (98) a. bufón ‘buffoon’ > bufon-esco ‘buffoon-like’; caricatur-a ‘caricature’ > caricatur-esco ‘in the style of a caricature’
 b. hombr-e ‘man’ > hombr-uno ‘manly’; lob-o ‘wolf’ > lob-uno ‘wolf-like’
 c. cobr-e ‘copper’ > cobr-izo ‘like copper’
 d. corder-o ‘lamb’ > corder-il ‘like a lamb’; ratón ‘mouse’ > raton-il ‘mouse-like’
 e. maratón ‘marathon’ > maratón-iano ‘marathon-like’; Bécquer > becquer-iano ‘in the style of Bécquer’
 f. cuartel ‘barracks’ > cuartel-ero ‘vulgar’
 g. patíbulo ‘scaffold’ > patíbul-ario ‘sinister’
 h. león ‘lion’ > leon-ado ‘like a lion’
 i. cataclism-o ‘cataclysm’ > cataclísm-ico ‘like a cataclysm’
 j. ceniz-a ‘ash’ > cenic-iento ‘ashen’
 k. barr-o ‘mud’ > barr-oso ‘like mud’; crem-a ‘cream’ > crem-oso ‘creamy’
 l. alabastr-o ‘alabaster’ > alabastr-ino ‘like alabaster’; león ‘lion’ > leon-ino ‘leonine’

In the same way that ‘possession’ is interpreted in a loose sense in possessive adjectives, similitudinal adjectives allow different interpretations of the resemblance relation; here, they also correspond to the interpretations that in a phrase can be expressed with the scheme in (99):

- (99) Y es como X
Y is like X

The first and main interpretation is one where the resemblance is interpreted as Y sharing some salient property that characterises nouns of the class Y. Which specific property is picked in each case is generally also underspecified; however, there are some adjectives whose use has been almost completely fixed to express one particular property.

For instance, colour is a frequent property used in similitudinal contexts:

- (100) a. paj-a ‘straw’ > paj-izo ‘with the colour of straw’
b. ceniz-a ‘ash’ > cenic-iento ‘with the colour of ash’
c. cobr-e ‘copper’ > cobr-izo ‘with the colour of copper’
d. cadáver ‘corpse’ > cadavér-ico ‘pale as a corpse’

Other adjectives most naturally receive a shape interpretation:

- (101) a. cub-o ‘cube’ > cúb-ico ‘with the shape of a cube’
b. campan-a ‘bell’ > (a-)campan-ado ‘with the shape of a bell’
c. ataúd ‘coffin’ > ataud-ado ‘with the shape of a coffin’
d. arpón ‘harpoon’ > arpon-ado ‘with the shape of a harpoon’

Interestingly, Spanish has one adjectival neoclassical suffix that specifically triggers the similitudinal shape reading (see Chapter 5, §3.1 for other suffixes with hyper-specific conceptual meaning):

- (102) campan-a ‘bell’ campan-iforme ‘with the shape of a bell’; cuern-o ‘horn’ > corn-iforme ‘with the shape of a horn’; esponj-a ‘sponge’ > esponj-iforme ‘with the shape of a sponge’; pájar-o ‘bird’ > paser-iforme ‘shaped like the claws of a bird’; pez ‘fish’ > pisc-iforme ‘with the shape of a fish’

Note that many of the bases show allomorphs in combination with the suffix; not by chance, given the Neoclassical nature of *-iforme*, the allomorph shows closest similarity to the Latinate origin of the word (cf. Lat. *passer* ‘sparrow’ > *paser-iforme* ‘in the shape of the claws of a bird’).

Other adjectives highlight the texture of the base:

- (103) a. gelatin-a ‘gelatine’ > gelatin-oso ‘gelatinous, with the texture of gelatine’
b. harina ‘flour’ > harin-oso ‘with a texture that reminds of flour’
c. esponj-a ‘sponge’ > esponj-oso ‘fluffy, spongy’

Other less frequent qualities that can be picked include size (104a), flavour (104b) and smell (104c, 104d).

- (104) a. *gigant-e* ‘giant’ > *gigant-esco* ‘gigantic’
 b. *vin-o* ‘wine’ > *vin-oso* ‘with a wine aftertaste, with a taste that reminds of wine’
 c. *frut-a* ‘fruit’ > *a-frut-ado* ‘with the smell of fruit’
 d. *sobac-o* ‘armpit’ > *sobac-uno* ‘with the smell of (sweaty) armpits’

Importantly, the examples we have just given are typically fixed in denoting one specific property, but the same similitudinal adjective can frequently highlight different properties depending on the subject it combines with. In fact, most of the time dictionaries define similitudinal adjectives as ‘that looks like’, leaving the specific property underspecified.

We will give three examples to illustrate this. First, *mármol* ‘marmor’ has at least two salient properties: its strength as a material (98a), and its elegant greyish colour (98b). Each one of these two properties can be highlighted in different contexts:

- (105) a. *abdominales marmóreos*
 abs marmor-EOs
 ‘abs like marmor, with the strength of marmor’
 b. *palidez marmórea*
 paleness marmor-EOs
 ‘paleness of marmor, with the colour of marmor’

Another example is *perlado* ‘like a pearl’, from *perla* ‘pearl’. In some cases, the property is the shape (106a), while in other cases it is the colour (106b).

- (106) a. *azúcar perlada*
 sugar pearl-ADO
 ‘sugar like pearls, in the shape of pearls’
 b. *satén perlado*
 satin pearl-ADO
 ‘satin like pearl, with the colour of pearl’

A final example is *plom-o* ‘lead’ > *plom-izo* ‘like lead’, where in different contexts the salient property might be the weight (107a) or the colour (107b).

- (107) a. *soledad plomiza*
 loneliness lead-IZO
 ‘loneliness like lead, as heavy as lead’
 b. *nubes plomizas*
 clouds lead-IZO
 ‘clouds like lead, with the colour of lead’

Up to now, all the examples we have seen involve a situation where one extracts one physical property of the base noun and extends it to another entity. However, when the base noun denotes a human or other animate being, the property tends to be related to the abilities, moral qualities or typical behavioural characteristics of the base (108). If the noun in the base is a common noun expressing a social status or an occupation, the typical behaviour reading is almost compulsory (109); if the base is an animal, generally both behavioural and physical characteristics are available (110).

- (108) a. acciones picar-escas
actions rascal-ESCO
'actions typical of a rascal'
- b. charla maruj-il
talk housewife-IL
'discussion typical of a (vulgar) housewife'
- c. merienda obrer-il
snack labourer-IL
'snack typical of a labourer'
- d. respuesta infant-il
answer child-IL
'answer typical of a child'
- (109) a. madre dictator-ial
mother dictator-IAL
'mother like a dictator, mother that acts like a dictator'
- b. profesora monj-il
teacher nun-IL
'teacher like a nun, teacher that acts like a nun'
- (110) a. cabeza serpent-ina
head snake-INO
'head like a snake, head with the shape of a snake's head'
- b. lengua serpent-ina
tongue snake-INO
'tongue like a snake, tongue that is sneaky as a snake'

Whether proper names denote sets of properties or not is a very controversial issue (see Cumming 2013 for an overview). Interestingly for this theory, whenever the base is a proper name, the interpretation obtained is one where the similarity is established through a typical style normally associated to the referent of the proper name, rather than moral or physical properties. For instance: someone with a standard cultural knowledge in Spain will know that Cervantes had one salient physical property (he only had one usable arm) and one salient moral property (he

was brave, as a soldier). The adjective in (111), then, could in principle have been used to highlight one of these two properties, but it does not. Instead, it forcefully means ‘that has the style typical of Cervantes’, where style is not meant to refer only to how something is executed, but also to the choice of topics and the general impression the observer gets.

- (111) un escritor cervantino
 a writer Cervantes-INO
 ‘a writer similar in style to Cervantes’

This reading ‘in the style typical of’ is systematic to all similitudinal adjectives derived from human proper names (112); when the proper name refers to a referent also known by his or her actions – for instance, in the case of fictional characters – the behaviour reading is preferred (113).

- (112) a. un retrato velazqu-eño
 a portrait Velazquez-EÑO
 ‘a portrait in the style of Velazquez’
 b. un relato hitchcock-iano
 a story Hitchcock-IANO
 ‘a story in the style of Hitchcock’
 c. una sinfonía beethoven-iana
 a symphony Beethoven-IANO
 ‘a symphony in the style of Beethoven’
- (113) a. un lingüista sherlock-iano
 a linguist Sherlock-IANO
 ‘a linguist that acts like / in the style of Sherlock Holmes’
 b. una abuela celestin-esca
 a granma Celestina-ESCO
 ‘a grandma that acts like / in the style of Celestina’
 c. un tutor lector-iano
 a tutor Lecter-IANO
 ‘a tutor that acts like / in the style of Hannibal Lecter’

Finally, the reading of similitudinal adjectives with place names as bases is more complex. In only a few cases is the ‘pick a quality of the base noun’ reading available (114).

- (114) a. frío siberi-ano
 cold Siberia-ANO
 ‘cold like Siberia, as cold as Siberia’
 b. calor sahar-iano
 heat Sahara-IANO
 ‘heat like the Sahara, heat with the temperature of the Sahara’

It is in fact more frequent to find a reading where the quality highlighted is related to the typical actions or typical inhabitants of the place in question (115). For instance, in (115a) the meaning of the similitudinal adjective involves comparing something to the style or habits of the prototypical inhabitants of Versailles; (115b) refers to the qualities characteristic of the typical people that would spend most of their time in a tavern, and (115c) denotes qualities of the prototypical soldiers that live inside the barracks.

- (115) a. discurso versall-esco
 speech Versailles-ESCO
 ‘speech in the gallant style of Versailles’
 b. chiste tabern-ario
 joke tavern-ARIO
 ‘joke that one would expect in a tavern’
 c. comentario cuartel-ario
 comment barracks-ARIO
 ‘comment in the style of soldiers in the barracks’

To summarise this section, note that all but the last interpretation mentioned can be equally obtained with structures involving *parecer* ‘to seem’ or *ser como* ‘to be like’:

- a. Similarity through a physical property from those characteristics of a noun

- (116) a. Esto parece harina.
 this seems flour
 b. Esto es como harina.
 this is like flour

- b. Similarity through the typical behaviour of an animate entity

- (117) a. Parecen niños.
 seem.3PL children
 ‘They seem children’
 b. Son como niños.
 are.3PL like children
 ‘They are like children’

- c. Similarity through the typical style of an individual

- (118) a. Parece Hitchcock.
 seems Hitchcock
 ‘He seems Hitchcock’
 b. Es como Hitchcock.
 is like Hitchcock

d. Similarity through the typical behaviour or style of people in a place.

- (119) a. #Parece Versailles.
 seems Versailles
 ‘It seems Versailles’
 (not ‘It resembles the style of people from Versailles’)
- b. #Es como Versailles.
 is like Versailles
 ‘It is like Versailles’
 (not ‘It resembles the style of people from Versailles’)

There are two distinct readings that can be obtained from degree modification in the presence of similitudinal adjectives.

- (120) Juan es muy gatuno.
 Juan is very cat-UNO
 ‘Juan is very cat-like’

The (high) degree in the similarity can be interpreted in two ways. One of them is to pick one single property that relates Juan with cats, and interpreting *muy* ‘very’ as taking that property to a high degree. The second one is interpreting the high degree as meaning that Juan and cats share many properties, and not just one, not necessarily implying that the qualities shared by both are exhibited in a high degree.

The most natural interpretation of similitudinal adjectives derived from proper names is the second: that the style or the behaviour characteristic of someone or some place are represented by different properties. For instance, it is more natural to interpret (121) as the movie having many ingredients that are typical of Tarantino’s style than as meaning that it has just one (for instance, violence) and is taken to a very high value.

- (121) una película muy tarantiniana
 a movie very Tarantino-IANO
 ‘a very Tarantino-style movie’

4.2 Structural properties: Incapacity to combine with negative prefixes

The main structural property that in Spanish differentiates possessive and similitudinal adjectives is that similitudinal adjectives never combine with negative prefixes. Gil Laforga (2014: 123–124) notes that no similitudinal adjective takes a privative form to express dissimilitude, while possessive adjectives can. To the extent that (122b) is acceptable, it must be interpreted as stating that some entity has lost the pearls it had – thus, the base is possessive.

- (122) a. des-dent-ado
 DES-tooth-ADO
 ‘toothless’
 b. #des-perl-ado
 DES-pearl-ADO
 Intended: ‘without any property of pearls’

This goes beyond the conceptual dimension, because it is a systematic inability to combine with a particular class of morphemes. Remember that possessive adjectives are able to combine with negative prefixes, in which case they produce privative adjectives. In contrast, there is no class of ‘dissimilitudinal’ adjectives.

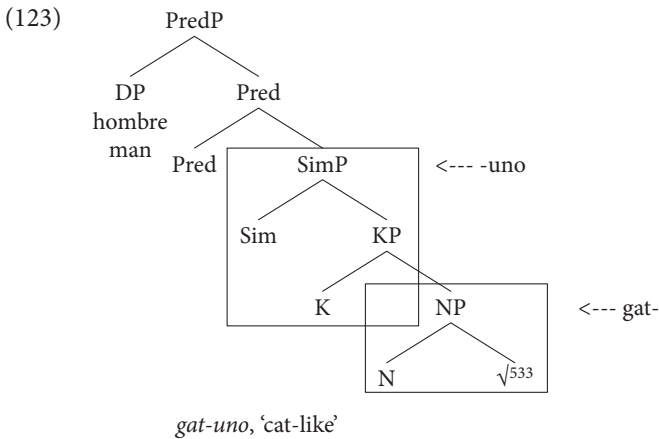
5. Analysis of similitudinal adjectives

In this section we will present our analysis of similitudinal adjectives; first, we will highlight the main properties:

- a. Conceptually, similitudinal adjectives express different types of relations, sometimes picking a property of the base and sometimes picking properties or characteristics not directly expressed by the base – cf. proper names, some place names.
- b. Similitudinal adjectives never combine with morphological negation.

We will argue for a structure that has basically the same configuration as possessive adjectives (123), but where PossP is substituted by Sim(ilitude)P.³

3. Ultra-Massuet (2017) analyses the English suffix *-ish* and argues that it is a preposition, along the general lines presented in this monograph, but with an independent proposal. Her view is that the *p* is non-selective with respect to the complement, given that English *-ish* can attach to a wide variety of bases (adjectives, as in *blue-ish*; nouns as in *child-ish*; verbs as in *skitter-ish*; numerals as in *forty-ish* or adverbs as in *down-ish*), and even appear as a free morpheme used as a discourse marker to express approximate values.



SimP restricts the kinds of relations that the adjectives of this class can express in the same way that PossP does it: it is restricted to relations where properties are shared in some way between the subject and the base. However, a fair deal of underspecification is involved in this case; let us see why and how. We propose that the denotation of Sim, the functional head that introduces the similitudinal adjective, as in (124). Remember that similarity determines the type of relation introduced by K.

$$(124) \quad [[\text{Sim}]] = \lambda P \lambda y \lambda x [P(x) \ \& \ \text{R-Similarity}(y, x)]$$

That is, Sim is a head that expresses a stative relation between y and x , the base, and defines them as being similar to each other. The head does not specify at all what kind of similarity is established, but defines it as a stative relation between two entities where the subject does not have agent-related entailments. It is plausible, in our opinion, that the morphological relation between similitudinal affixes and participles – the fact that affixes that are historically related to the participle are used for these adjectives – is related to the nature of this semantic relation. Sim expresses a stative where the subject is not interpreted as an agent. Given that this is very similar to what a typical participle denotes, this relation plausibly favours – as was the case with possessive adjectives – that affixes historically related to participles can be used to express similitudinal notions.

How this similarity interpretation is specifically implemented is left to world knowledge, and is not dependent on the lexical denotation of the base. Speakers simply judge using their world knowledge and the information they have about the stereotypes within their culture what type of similarity relation can be established between, say, John and Hitchcock, a lion or Siberia. There is no need, then, that the base noun carries with it a set of properties it denotes; even for proper names, where this set is presumably missing, speakers will have in their encyclopedic list information about the referents in the real world, and will derive from those representations

the kind of qualities that subject and base can presumably share. In the case of suffixes that force one of the properties to be picked (125), we assume that this is codified not through a different configuration, but rather as part of the conceptual meaning with which the affix is listed.

(125) $[-iforme] = \lambda P \lambda y \lambda x \lambda R [P(x) \ \& \ R\text{-Similarity-in-shape}(y, x)]$

However, what does ‘similar’ mean exactly, that is, what kind of relation is restricted by SimP? In the next subsection we will develop the contribution of SimP and specifically, we will argue that it should be viewed as a function that produces a vague predicate from a sharp predicate (in Kamp & Partee’s 1995 sense). The vague nature of this head is what ultimately prevents the combination of negation with similitudinal adjectives.

5.1 SimP as a vagueness function.

The analysis of vagueness has attracted the attention of semanticists for a long time, and is arguably one of the most controversial issues in contemporary semantic theorisation (cf. Kamp 1975; Stalnaker 1975; Sorensen 1988; Landman 1991; Williamson 1994; Kamp & Partee 1995; Barker 2002; Soames 1999, 2002, 2003; Hampton 2007; Kennedy 2007; Égré & Klinedinst 2011; Sassoon 2013). In a nutshell, cases of vagueness involve situations where whether or not an entity belongs to the extension of a predicate is not a matter of black or white. Vagueness is opposed, then, to sharp predicates in the sense of Kamp (1975), which are typically nouns – although see Kamp and Sassoon (2017) for a more nuanced approach. In (126), we have a sharp predicate: a speaker that knows the characteristics of a rose is in principle able to classify all entities of the world in two groups: those within the extension of *rosa* ‘rose’ (the positive denotation of the sharp predicate) and those outside it (the negative denotation of the same predicate).

(126) X es una rosa.
X is a rose

A prototypical example of a vague predicate is a relative adjective such as *alto* ‘tall’, which depends on context at least to specify what value counts as a minimal tallness value in each particular case. To give well-known examples, what counts as tall when predicated of children is not the same size that one counts as tall when talking of adults, buildings or mountains.

(127) X es alto.
X is tall

Importantly for our purposes, nouns can denote vague predicates if they are combined with the right elements. Combination with the privative modifier *falso* ‘fake’ (128) is one such example (Kamp & Partee 1995).

- (128) una pistola falsa
 a gun fake

Note that what *falso* ‘fake’ does is not to simply invert the positive and negative denotation of the noun; a glass or a dog is not a fake gun, for instance. In Kamp and Partee’s (1995) analysis, the modifier turns the sharp predicate into a vague predicate by defining a grey area of entities which do not fall within the positive or negative denotation of *pistola* ‘gun’. There is now a class of objects, which *pistola falsa* picks, which share some relevant properties with *pistola* but are not *pistolas*. In other words: we have objects that are not guns, and at the same time are not simply ‘not guns’ – or, in a different theory, objects that at the same time are and are not guns. The group of entities picked out by this phrase will intuitively be composed of objects that share some relevant property with guns.

Structures like (129) show that the preposition *como* ‘like’ and the light verb *parecer* ‘seem’ have essentially the same role as heads inducing vagueness on the complement.

- (129) a. Esta sustancia es *como* seda.
 this substance is like silk
 b. Esta sustancia *parece* seda.
 this substance seems silk

(129), in opposition to *Esta sustancia es seda* ‘This substance is silk’ is used in situations where the substance cannot properly be categorised as belonging to the positive denotation of *seda* ‘silk’. In intuitive terms, there is a sense in which the substance is ‘silk’ because it shares some relevant property with it, but there are other senses in which it is not ‘silk’. Interestingly, just like all similitudinal adjectives, Spanish lacks a negative version of *como* ‘as’ or *parecer* ‘seem’ (**des-parecer*, **im-parecer*, etc.)

5.2 Similitudinal adjectives as vague predicates

Our claim is that SimP performs the same role as the elements highlighted in (129). In what follows we will go through the typical properties of vague predicates and show that similitudinal adjectives also have them, justifying our proposal to consider SimP a vagueness inductor.⁴

Kamp and Sassoon (2017) show that some properties are typical to vague predicates. The first one of them is that the truth value of predications involving vague predicates is context-dependent. Take as an illustration so-called relative adjectives, such as *tall*. It cannot be said outside of context whether a building measuring three meters in height is tall or not; context, and specifically the comparison class used to determine in each specific case the value that counts as minimal for tallness, is necessary to define whether ‘This building is tall’ is true or not. If we talk about objects in general, the sentence is probably true, but if we talk of blocks of apartments, three meters might not count as ‘tall’.

Similitudinal adjectives display exactly this property. Take, for instance, *leonado* as a colour adjective, ‘with the colour typical of lions’. How similar exactly the colour has to be to the lion-standard will depend on the context, and the same degree of similarity does not apply if we are discussing the representation of a lion done by a painter, the tone of brown among six tones that compose the catalogue of curtain colours, or the drawing of a small child. In the same way, if we take *esponjoso* ‘spongy’ to refer to the consistency of a substance, it is equally clear that the same type of consistency cannot be considered spongy if we talk of cakes, soufflés, the surface of a sofa, or a mattress. In contrast, whether the yogurt has sugar or not (*azucar-ado* ‘with sugar’) is less subject to contextual influence.

Secondly, even when the comparison class is fixed for a vague predicate, vagueness involves a subjective component. Different individuals may have a different personal understanding of what is the normal height of a building, in such a way that their judgement of whether a building is tall or not can differ. Similarly, this happens with similitudinal adjectives: to say that an aubergine has a *plomizo* ‘lead-like’ colour depends in part on the understanding of each individual about

4. An additional argument that we will not develop here, given that it involves affixation of some similitudinal affixes to bases that are arguably already (non-derived) adjectives, is that the suffixes *-izo* and *-(i)ento* can also add up to the vagueness of colour adjectives. *Roj-izo* ‘red-ish’ and *amarill-ento* ‘yellow-ish’ differ from the bases without the suffixes in that they denote values of the colour that are slightly below the standard value relative to the subject they apply to. See Suguwara (2012) and Bochnak and Csipak (2014). This is expected if ‘similarity’ is to be understood as vagueness.

what should count as a colour similar to lead when applied to the normal colour of aubergines. About the same apple, two different speakers might disagree on whether its consistency is *harinosa* ‘flour-like’ or not. Two individuals, similarly, can discuss whether the same movie is *Hitchcockiana* ‘Hitchcockian’ or not. It is difficult to imagine a similar discussion involving whether a yogurt is *azucar-ado* ‘with sugar’ or not.

Third, whenever there is vagueness, there are borderline cases which are difficult to classify, even for a single speaker, inside or outside. If a building of three meters can be said to be tall, probably a building of 2 meters and 99 cms is also tall, but removing centimeter by centimeter we will arrive at some point at a case where that speaker doubts whether the building is tall or short. This is also typical of similitudinal adjectives: we can all imagine instances of behaviour that would be *infantil* ‘childish’, and instances of behaviours that we would never consider *infantil* – we would certainly not agree in all cases, but at least some core cases would feel prototypical for all of us. However, we can also imagine situations where we would ourselves doubt whether the behaviour is childish or not; perhaps it is childish in one sense, but not in the other, which is a central property of vagueness. The grey area is much less clear when we evaluate yogurts as *azucar-ados* ‘with sugar’ or not.

A fourth property of vagueness is the informative use of contradictions and tautologies of the forms ‘X and not X’ and ‘X or not X’, respectively. With a sharp predicate the second one is not informative (*This is a chair or this is not a chair*), and the first one is always false (*This is a chair and this is not a chair*). With vague predicates, both are informative, simply because there is one perspective in which one can say that the property predicates of the subject, and another way in which it does not: *John is tall and John is not tall, it depends on what you need him to do* is perfectly informative, because it could mean that John is tall enough to reach the upper shelf, but not to play in the NBA.

Exactly in the same way, to say that someone is *monjil* ‘nun-like’ is to say that there are some properties shared with nuns, and other properties according to which that person is definitely not a nun. Systematically, statements of the form ‘This is X and this is not X’ are informative with similitudinal adjectives, simply because as vague predicates there will be dimensions where the entity differs from the base, and dimensions where they are similar enough. Note that, in contrast, to say that the yogurt is at the same time *azucar-ado* and not *azucar-ado* feels more like a contradiction.

Finally, and as a side note, it is interesting to observe that the vast majority of similitudinal adjectives behave as relative adjectives. Relative adjectives, as opposed to absolute adjectives that have a maximal or minimal standard (Kennedy 1999; Kennedy & McNally 2005; Toledo & Sassoon 2011; McNally 2011; see also

Chapter 2, §5), reject modifiers such as *completamente* ‘completely’, *perfectamente* ‘perfectly’ or *ligeramente* ‘slightly’, at least without contextual accommodation. (139) shows that these modifiers are possible with absolute adjectives, the first two with those that have a maximal degree and the last one with those that have a minimal degree.

- (130) a. *completamente* {*borracho* / *limpio*}
 completely drunk clean
 b. *perfectamente* {*claro* / *recto*}
 perfectly clear straight
 c. *ligeramente* {*sucio* / *doblado*}
 slightly dirty bent

Relative adjectives are clearer instances of vague predicates than absolute ones, if only because absolute adjectives do not always need a comparison class to fix the standard value used to determine the truth value of the predication. To the best of our knowledge, all similitudinal adjectives reject the modifiers that pick the maximal value of the scale.

- (131) a. #*completamente* *gatuno*
 completely cat-like
 b. #*perfectamente* *tarantiniano*
 perfectly Tarantino-style
 c. #*totalmente* *arenoso*
 totally sand-like

When they accept a modifier, there is either a contextual accommodation implying ‘enough A for this purpose’ (cf. Kamp & Sassoon 2017: 392–393) or the modifier receives an extensional reading, something like ‘the property applies to the noun in all its extension’, as in (132), which is interpreted as ‘with the colour of copper in all its surface’ rather than ‘with a maximal degree of the colour of copper’.

- (132) *un vestido completamente cobrizo*
 a dress completely copper-like

In contrast, some of them do allow modifiers picking up a minimal value.

- (133) a. *un vestido ligeramente cobrizo*
 a dress slightly copper-like
 b. *un comportamiento ligeramente infantil*
 a behaviour slightly childish

This minimal value, intuitively, is vaguer than the one displayed by adjectives such as *clean* or *bent*. In the latter – even though contextual accommodation is always possible – we feel that there is a specific and relatively objective measure of this minimal value (does it have any dirt on it? does it have any curve to it?), which is not the case in the adjectives in (133).

Still, the compatibility with a minimal standard value made obvious by these modifiers tells us something about the notion of similarity: being similar to an entity X is defined through minimal, not maximal requirements. Sharing only one relevant property among the set of properties associated to X is enough to license the claim that something looks like X in some way. For this reason, we expect that there is no maximal requirement in the similarity, and therefore that the maximality modifiers are rejected systematically with similitudinal adjectives.

5.3 The absence of negative similitudinal adjectives

It was noted above that one strong reason to propose that possessive and similitudinal adjectives do not share the same structure is that the first can have privative forms, while the second never has negative forms meaning ‘not similar to X in any sense’. In this section we will explain why, in our account, this difference exists.

Our minimal difference between the two classes of adjectives depends on the head that introduces the nominal base; in the first case it is PossP, which establishes a possessive relation interpreted as a state; in the second case, it is SimP, establishing a similarity relation also interpreted as a state. However, only in the second case do we have a vagueness function that takes the sharp predicate denoted by the noun and turns it into a vague predicate picking an underspecified property or set of properties to establish the similarity.

- (134) a. [PossP Poss [KP [NP...]]]
 b. [SimP Sim [K [NP...]]]

Vagueness is what we argue explains why there are no similitudinal negative adjectives. Leaving technical differences aside, all approaches to vagueness propose that in some way there is a grey area between ‘being X’ and ‘not being X’ which a vague predicate picks: to say it clearly, being *infantil* ‘child-like’ means being a child in one sense and not being a child in another sense.

So what would be the meaning of *un-X*, where X is a similitudinal adjective? Given that the similitudinal adjective already picks the grey area, the negation would denote exactly the same grey area as the positive version: if the positive denotation of a vague predicate is ‘being X and not being X’, its negation (‘not being X and being X’) would mean exactly the same. Plain and simple, adding the negation

would not involve any change in the meaning of the adjective. Our claim is that similitudinal negative adjectives do not exist because in all cases their denotation would not be different from the equivalent positive adjectives. This derives from the reasonable principle in (135):

(135) Every structure-building operation must be interpretable at semantics (LF)

Thus, adding the negative prefix to a similitudinal adjective is a conceivable operation from a syntactic perspective, but it does not provide a new interpretation at LF with respect to what the same adjective meant without the prefix. Therefore, the structure is not valid for semantics.

In the case of possessive adjectives, there is no vagueness per se involved, as possession itself is a sharp predicate: either one has X or one does not have X. In such cases, negation is informative because it expresses the contrary property of having X, namely lacking X.

With this, we finish this chapter and move to the next one, where we will center our attention of causative denominal adjectives, whose properties are very different from the two classes analysed here.

Qualifying denominal adjectives II

Causative and dispositional denominal adjectives

In this chapter we will examine the remaining classes of denominal adjectives in Spanish, specifically causative (1) and dispositional (2).

- (1) a. ruid-oso
noise-OSO
'noisy'
- b. calor-ífico
 heat-IFICO,
 'heating'
- (2) a. ceremoni-oso
 ceremony-OSO
 'ceremonious'
- b. chocolat-ero
 chocolate-ERO
 'chocolate-fan'

Each one of these classes will be discussed in its own section: §1 is dedicated to causative adjectives, and §2 to dispositional denominal adjectives.

This chapter also deals with how the four classes of qualifying adjectives – possessive, similitudinal, causative and dispositional – are related to each other, and not least why they are precisely these four (§3). We will argue that the four classes are precisely these because they reflect a particular organisation of the conceptual semantic component, specifically Qualia Structure in the sense of Pustejovsky (1995). This will take us to the problem of how one captures the fact that some affixes are severely underspecified in their readings (§4), where we will discuss the specific case of *-oso* and *-ero*, the two most underspecified suffixes, and will point out directions to analyse the other relations. The chapter ends with a few remarks on adjectival parasynthesis in §5, even though we will not provide an analysis of this type of morphological structure.

1. Causative adjectives

Causative adjectives, also known as effect adjectives ('adjetivos de efecto', Rainer 1999: 4632–4633; Martín García 2008, 2014: 40–41), are those where the base is interpreted as the entity that is produced or triggered by the noun taken as the subject. In this interpretation, the productive suffixes are *-oso*, which we also found in possessive and similitudinal adjectives, and the less productive neoclassical suffixes *-ígeno/-ógeno* and *-ífico*.

- (3) *apetit-oso* 'appetite-OSO, appetising', *bochorn-oso* 'shame-OSO, embarrassing', *dañ-oso* 'harm-OSO, harmful', *trabaj-oso* 'work-OSO, laborious'
- (4) *cancer-ígeno* 'cancer-IGENO, carcinogenic', *lacrim-ógeno* 'tear-OGENO, tear-producing'¹
- (5) *odor-ífico* 'smell-IFICO, odor-producing', *sudor-ífico* 'sweat-IFICO, sudorific', *terror-ífico* 'terror-IFICO, terror-inducing'

The two last suffixes are typical from technical language, and tend to combine with latinate allomorphs of their bases. In (4) above we find *lacrim-* instead of *lágrim(a)* 'tear' – see also *tus-* instead of *tos* 'cough' in the relational adjectives *tus-ígeno* 'cough-ÍGENO, cough-inducing', and *pat(o)* 'illness' in *pat-ógeno* 'sick-ÓGENO, sickness-inducing'. In (5) we find *odor* instead of *olor* 'smell'.

1.1 Empirical properties

The bases interpreted as the produced entity can refer to physical objects (6), or eventualities (8). Within eventualities, we differentiate between (psychological) states (7a, by far the most frequent class), or events and processes (7b).

- (6) *mel-ífico* 'honey-IFICO, honey-producing', *pir-ógeno* 'fire-OGENO, fire-producing'
- (7)
 - a. *angusti-oso* 'stress-OSO, stressfull', *asombr-oso* 'amazement-OSO, amazing', *asquer-oso* 'disgust-OSO, disgusting', *deleit-oso* 'delight-OSO, delightful', *vergonz-oso* 'shame-OSO, shameful', *frigor-ífico* 'cold-IFICO, cold-inducing'
 - b. *li-oso* 'mess-OSO, convoluted', *trabaj-oso* 'work-OSO, laborious', *contagi-oso* 'contagion-OSO, contagious', *alucin-ógeno* 'hallucination-OSO, hallucinogenic'

1. Note that even though these adjectives can be used as relational, they also allow qualifying readings: *una película muy lacrimógena* 'a very weepy movie'.

With very few exceptions (Martín García 2008: 259), the adjectives receive a causative reading independently of the nature of the subject they are predicated from. This is always the case with adjectives using the suffixes *-ígeno* and *-ífico*,² as witnessed by the interpretation in (8) and (9), where in both cases the subject is interpreted as an entity that causes terror and cancer, respectively, independently of how conceptually unlikely that reading is in (9b).

- (8) a. un libro terrorífico
 a book terror-inducing
 ‘a terror-inducing book’
 b. una profesora terrorífica
 a teacher terror-inducing
 ‘a terror-inducing teacher’
- (9) a. un alimento cancerígeno
 a food carcinogenic
 ‘a carcinogenic food’
 b. #una profesora cancerígena
 a teacher carcinogenic
 ‘a carcinogenic teacher’

However, the interpretation varies depending on the conceptual class of the subject with a few adjectives in *-oso*: in (10a), the adjective is interpreted as possessive, while the same adjective receives a causative reading in (10b). Some adjectives whose base is a mental state allow a possessive interpretation if the subject is animate (11a), because then that subject is interpreted as the experiencer of the state, something obviously unavailable if the subject is non-animate (11b).

2. Notice that *-ígeno* sometimes appears as the allomorph *-ógeno*. It is tempting to treat the morpheme as segmentable itself: *-geno* could be a neoclassical stem (cf. Varela 1990b), forming a compound, and *-i-* or *-o-* could be the linking elements of the compound, as it is the case in (i):

- (i) music-ó-filo
 music-LE-lover
 ‘music-lover’

However, it does not seem that a form *-geno* could be treated in contemporary Spanish as a neoclassical stem; unlike neoclassical stems – *filo* in (i) – this element would be unable to produce words in combination with an affix.

- (ii) fil-ia
 love-IA
 ‘predilection’

Moreover, we are not aware of cases where *-geno* is used as the first member in a complex word. All points out to the conclusion that in Contemporary Spanish this morpheme is a suffix, even if historically it relates to the combination of a linking element with a neoclassical stem.

- (10) a. un análisis lioso
 an analysis messy
 'a messy analysis'
 b. un hombre lioso
 a man messy
 'a man that makes things messy'
- (11) a. un estudiante vergonzoso
 a student bashful
 'a bashful student'
 b. un análisis vergonzoso
 an analysis shameful
 'an embarrassing analysis'

The asymmetry between *-oso*, on the one hand, and *-ígeno / -ógeno* and *-ífico* on the other is plausibly related to the fact that *-oso* can produce other readings in addition to the causative one – possessive, similitudinal and, as we will see in §2, dispositional, while the other two are virtually restricted to producing causative adjectives. In the case of *-ífico*, there are just a few formations without this meaning (12).

- (12) a. beat-ífico
 devout-IFICO
 'beatific'
 b. cient-ífico
 science-IFICOI
 'scientific'
 c. espec-ífico
 species-IFICO
 'specific'
 d. honor-ífico
 honour-IFIVO
 'honorific'
 e. magn-ífico
 huge-IFICO
 'great'
 f. pac-ífico
 peace-IFICO
 'peaceful'

Here, there is one dispositional adjective expressing the propensity towards a particular state (12f); three forms (12a, 12c, 12e) are presumably lexicalised, and two others (12b, 12d) have a purely relational meaning. Outside these forms, the suffix has a clear causative meaning. In the case of *-ígeno / -ógeno*, Rainer (1999: 4634) documents two forms where the suffix has a source rather than a causative meaning (13).

- (13) a. alien-ígeno
alien-IGENO
'from outer space'
b. terr-ígeno
earth-IGENO
'earth-born'

We will treat the non-causative examples of this suffix and *-ígeno* as instances of lexicalisation where the meaning of the whole word is stored as an idiom. In the productive, non-lexicalised cases, the affixes are directly related to a head whose semantics expresses the causative meaning.

In this respect, note that these two suffixes are able to express a causative meaning with nominal bases denoting different types of entity: count objects such as *lágrima* 'tear' or *cáncer* 'cancer', mass objects such as *miel* 'honey' and *sudor* 'sweat', states such as *terror* 'terror' or *calor* 'heat', or even processes and events such as *to* 'cough'.

In contrast, the causative adjectives with *-oso* involve a much more restricted type of nominal bases. In fact, we will argue in the following paragraphs that they are all instances of psychological state nouns.

Some of the bases straightforwardly refer to psychological states (*angustia* 'stress', *asombro* 'amazement', *asco* 'disgust', *deleite* 'delight', *empalago* 'cloying', *vergüenza* 'shame'). In the case of *contagio* 'contagion', the base can refer to the process of transmitting a disease or to the state of having acquired the disease. Although it is possible to use it in the plural with quantifiers, as a count noun, this noun can also be used as mass (*mucho contagio* 'much contagion'), and we claim that this is the use that is related to the causative adjective reading ('that can cause the state of being infected').

When the base noun can be interpreted as a psychological state or as something else, the meaning selected in the adjective is the state one. This is the case with *trabajo* 'work', which means 'task' or 'job' as a count noun (14a), but rather 'effort' as a mass noun (14b), with the second meaning being the one selected in the adjective (14c).

- (14) a. Tiene tres trabajos.
she.has three jobs
b. Esto requiere mucho trabajo.
this implies much effort
c. trabaj-oso
work-OSO
'arduous'

The same happens with *lío*, with means 'mess' only in the mass reading (15b), as in the adjective (15c), and with *daño*, 'harm' as a mass noun (16b).

- (15) a. Tiene tres líos.
he.has three affairs
- b. Tiene mucho lío.
he.has much mess
- c. li-oso
mess-OSO
'messy'
- (16) a. Hubo numerosos daños.
there.were many damages
- b. Me hizo mucho daño.
me caused much harm
- c. dañ-oso
harm-OSO
'harmful'

Note that in all these cases the mass interpretation is related to the state reading.

A final empirical property of these adjectives is that they do not express causation in the same way that a causative verb does. In a verb that contains a causative component, the entailment is that the subject produces the effect (17), but in the case of the causative adjectives the predication is truthful even if the effect never takes place (18): it is enough to predicate that the internal properties of the entity are such that they can produce the effect.

- (17) Juan ensució la ventana, #pero la ventana no quedó sucia.
Juan made.dirty the window, but the window not got dirty
'Juan made the window dirty, #but the window didn't get dirty'
- (18) a. La película es asombrosa, pero no sintieron asombro.
the movie is amazing, but not felt amazement
'The movie is amazing, but they didn't feel amazement'
- b. El producto es cancerígeno, pero no les dio cáncer.
the product is carcinogenic, but not them gave cancer
'The product is carcinogenic, but it didn't make them have cancer'
- c. El medicamento es sudorífico, pero no hizo sudar al paciente.
the medicine is sweat-inducing, but not made sweat the patient
'The medicine is sweat-inducing, but it didn't make the patient sweat'

Thus, the cause in causative adjectives does not necessarily produce the notion denoted in the base: it is rather that the subject is characterised by the property of being able to produce it. This property is common to adjectives as a class, as we will see in the next chapter of this book when examining deverbal adjectives: these systematically trigger non-episodic readings where they do not entail actual participation in an event at a specific time period.

Consider now the interpretation of degree with these adjectives: the gradation always applies to the scale of causation, that is, adding *muy* ‘very’ is systematically interpreted as a higher degree of the capacity to cause the notion expressed in the base.

- (19) a. *muy angusti-oso*
 very stress-OSO
 ‘that causes stress to a high degree’
 b. *muy terror-ífico*
 very terror-ÍFICI
 ‘that causes terror to a high degree’
 c. *muy lacrim-ógeno*
 very tear-ÓGENO
 ‘that causes terror to a high degree’

To complete the empirical description of causative adjectives, a note is in order to relate them with a particular reading that some underived adjectives denoting mental states allow when predicated from non-animate entities. Consider the examples in (20a) and (21a) in contrast to their use with experiencer subjects in the second member of the pair:

- (20) a. *La película es triste.*
 the movie is^{ser} sad
 ‘The movie is sad’
 b. *Juan está triste por la película.*
 Juan is^{estar} sad due.to the movie
 ‘Juan is sad because of the movie’
 (21) a. *La película fue alegre.*
 the movie was^{ser} cheerful
 ‘The movie was cheerful’
 b. *Juan está alegre.*
 Juan is^{estar} cheerful
 ‘Juan is cheerful’

Notice that, unlike the examples in (22), analysed by Pesetsky (1995: 6, 64–67) as involving a morpheme SUG contributing a meaning ‘suggestive of a particular type of mental state’, (20a) and (21a) modify nouns that do not denote inanimate entities related to the behaviour of humans.

- (22) a. *Su comportamiento era alegre.*
 her behaviour was^{ser} cheerful
 ‘Her behaviour was cheerful’

- b. Su expresión era triste.
 her expression was^{ser} sad
 ‘Her expression was sad’

(20a) denotes that the movie, due to its internal properties, might cause sadness in someone who reads it, and (21a) predicates from the movie that it has such properties that it can trigger happiness. In these cases, an adjective whose basic meaning³ is to denote a mental state is used to express causation of the same mental state. The copula used in each case is different, as the glosses show: when the adjective implies a mental state, as expected *estar* is used. This is the copula systematically used in Spanish with states (cf. Bosque 1990; Camacho 2012). When the causative component is present, the copula is *ser*, because then the adjective denotes the property of being able to trigger a state, not the state itself.

With this background in mind, let us now move to the analysis. In this analysis, we will focus on the formations involving *-ígeno* or *-ífico*. We will treat the ones in *-oso* in §4.1, given that this suffix is highly underspecified, and in order to explain why it can only obtain causative meanings with state-denoting bases we must introduce other objects in the analysis.

1.2 Analysis

The core of our analysis is that causative adjectives in *-oso* should be treated differently from those containing *-ígeno/-ógeno* or *-ífico*. We have seen that there are three empirical distinctions between them:

- a. the bases that allow a causative meaning with *-oso* belong to the class of mass nouns denoting mental states, a class identical to the one that allows two readings when they are underived (cf. 20, 21); with the other two suffixes, the range of bases is much wider
- b. to some extent, the availability of the causative reading with *-oso* depends on the nature of the noun modified (cf. 10, 11); the other two suffixes impose a causative reading with whatever subject they have
- c. finally, remember that *-oso* has other meanings beyond the causative one – such as the possessive and the similitive studied in the previous chapter, while the vast majority of the words formed with the other two suffixes have a causative meaning.

3. Evidence that the mental state meaning is the basic one comes from nominalisations (Fábregas 2016a: 242–250): this is the only meaning that is preserved within the nominalisation.

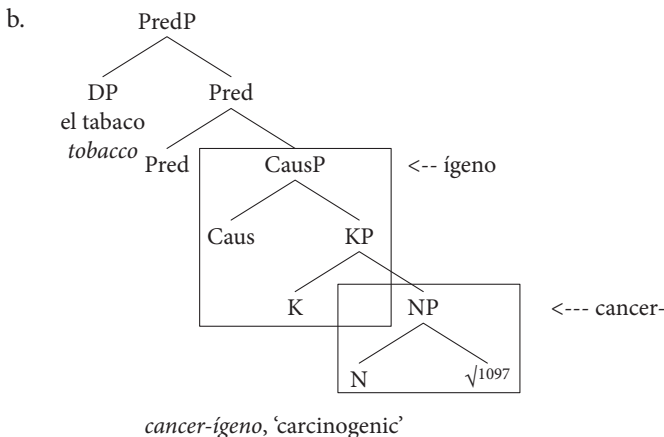
- (i) la tristeza {de Juan / *del libro}
 the sadness of Juan / of-the book

Thus, in this section we will restrict ourselves to the analysis of the affixes that are specifically causative. In a nutshell, we will propose that *-ígeno* and *-ífico* spell out a constituent that contains a Causative head with the denotation in (23), which we illustrate for the adjective *cancer-ígeno* ‘carcinogenic’. The head names the relation R that K introduced, as in the other classes.

$$(23) \quad [[\text{CausP}]] = \lambda y \lambda x [\text{cancer}'(x) \ \& \ \text{R-Causation} (y, x)]$$

The denotation of *el tabaco (es) cancerígeno* ‘tobacco is carcinogenic’ is represented in (24a): K defines the set of entities denoted by ‘cancer’ into the first member of an R relation that Caus names as ‘causation’. PredP, equivalent to pP, introduces the figure of the relation, ‘tobacco’. The tree diagram corresponding to the whole is presented in (24b).

(24) a. **cancer'**(x) & Causation(**tobacco**, x)



If these suffixes are the spell out of a Caus head, then we explain that they impose a causative reading irrespective of the type of noun base they combine with, or the interpretation of the subject they take. The weirdness of a structure such as *Juan es cancerígeno* ‘Juan is carcinogenic’ follows from the proposal that the suffix imposes a causative reading and it is difficult to conceive in the literal sense how Juan can be associated to internal properties that cause cancer in others.

The Caus head represents here a stative relation which defines the property of ‘be the cause of’, with the state triggered or the resulting object defined as its complement. The head is different in semantic terms from the verbal head that expresses causation, because of the fact that the verbal causative head implies effective causation – unless it is under the scope of a negative head. This also ensures that the Caus head does not have a verbal nature, from which it naturally follows that a structure labeled as CausP cannot combine with heads expressing aspect, mood or tense.

2. Dispositional denominal adjectives

A class of denominal adjectives that is decidedly understudied is the one illustrated in (25), where the adjective denotes the property of having a propensity or tendency towards a particular behaviour; the behaviour is defined in its relation to the entity denoted by the noun on the base (Rainer 1999: 4632).

2.1 Empirical properties

The suffixes *-oso* (25a), *-ero* (25b) and *-ista* (25c) are the three that most typically produce these readings. The last one is specialised in readings that involve the propensity and inclination toward a particular entity, or an ideological affinity. In this second set of cases – such as the productive subclass of adjectives denoting ideological affiliations – it does not need to be accompanied by a particular type of behaviour (25d).

- (25) a. *chism-oso* ‘gossip-OSO; gossipy’, *chist-oso* ‘joke-OSO; witty’, *ceremoni-oso* ‘ceremony-OSO; ceremonious’, *dadiv-oso* ‘gift-OSO; generous’, *achac-oso* ‘ailment-OSO, sickly’, *calamit-oso* ‘calamity-OSO, calamitous’, *catarr-oso* ‘cold-OSO, prone to catching colds’, *litigi-oso* ‘litigation-OSO; litigious’, *mentir-oso* ‘lie-OSO, lying’, *pamplin-oso* ‘chickweed-OSO, idiotic’, *quej-oso* ‘complaint-OSO, whiny’, *revolt-oso* ‘revolt-OSO, rebellious’
- b. *chocolat-ero* ‘chocolate-ERO; chocolate-lover’, *dulc-ero* ‘sweet-ERO; candy-lover’, *patat-ero* ‘potato-ERO; potato-lover’, *aventur-ero* ‘adventure-ERO; adventurous’, *cas-ero* ‘house-ERO, home-loving’, *chapuc-ero* ‘botch-ERO, shoddy’, *discotequ-ero* ‘disco-ERO, night club-lover’, *embustero* ‘lie-ERO, lying’, *futbol-ero* ‘soccer-ERO, soccer-lover’, *peset-ero* ‘peseta-ERO, money-grubbing’
- c. *brom-ista* ‘joke-ISTA, joking’, *cuent-ista* ‘tale-ISTA, lying’, *rigor-ista* ‘rigour-ISTA, disciplinarian’, *juergu-ista* ‘binge-ISTA, fun-loving’, *alarm-ista* ‘alarm-ISTA, alarmist’, *dialogu-ista* ‘dialogue-ISTA, dialogist’, *mach-ista* ‘macho-ISTA, male chauvinist’
- d. *marx-ista* ‘Marx-ISTA, Marxist’, *calvin-ista* ‘Calvino-ISTA, Calvinist’, *erasm-ista* ‘Erasmus-ISTA, Erasmist’, *aznar-ista* ‘Aznar-ISTA, Aznarist’, *zapater-ista* ‘Zapatero-ISTA, Zapaterist’, *esclav-ista* ‘slave-ISTA, pro-slavery’

There is also a very small number of formations in *-iego* (*mujer-iego* ‘woman-IEGO, that is a womaniser’, *nochern-iego* ‘night-IEGO, that likes doing things during the night’), but this suffix cannot be considered productive.

Let us concentrate first on the bases that produce this reading with *-oso*. A first property that catches the eye, in particular when we compare the bases to the

causative formations, is that the nouns involved in this construction are typically count (*dos chismes* ‘two pieces of gossip’, *tres chistes* ‘three jokes’, *cuatro achaques* ‘four ailments’, *seis dádivas* ‘six gifts’, *ocho catarros* ‘eight colds...’). Assuming a nominal source for the adjectives *revoltoso* ‘rebellious’ and *quejoso* ‘whiny’ involves relating the meaning of these adjectives with the count nouns *revuelta* (*tres revueltas* ‘three revolts’) and *queja* (*cinco quejas* ‘five complaints’).

Within the class of count nouns, the preferred bases either designate in themselves actions (*revuelta* ‘revolt’) or are nouns tightly related to events, because they can be interpreted as the result of a (speech) event (*mentira* ‘lie’, *pamplina* ‘chickweed’, *chisme* ‘gossip’, *chiste* ‘joke’, *litigio* ‘litigation’, *queja* ‘complaint’) or the entity that results from a transference event (*dádiva* ‘gift’), or the result of a change of state process (*catarro* ‘cold’).

Importantly, it is easy to relate all these noun bases to different types of eventualities: events of talking, acquiring properties or giving away things. Sometimes, the event has to be inferred from the noun, as in *catarro* ‘cold’, which is something that is acquired, and sometimes the noun itself denotes the event. However, in all the cases the dispositional adjective is interpreted as the disposition to participate in the event associated with the noun base: someone *catarroso* is prone to catching a cold, not simply someone who has a positive attitude towards colds.

For these reasons, the adjective as a whole is frequently interpreted as designating a particular kind of behaviour – because behaviours are evaluated through typical actions, cf. Bosque (1989), Stowell (1991), Oshima (2009), Kertz (2010), Landau (2010). It is more difficult to extend the notion of behaviour – which tends to be interpreted as agentive – to the bases that involve a result of sorts, but in a loose definition of ‘behaviour’ adjectives such as *achacoso* ‘prone to having ailments’ and *catarroso* ‘prone to catching colds’ also define a tendency towards a type of eventuality that is characteristic of the subject.⁴

The same observation – that the base is interpreted as an eventuality related to the noun – can be made in the case of *-ero* and *-ista*. When the base does not denote an event itself (*fiest-ero* ‘party-ERO, party-lover’; *brom-ista* ‘joke-ISTA, prone to jokes’), an eventuality is inferred from that base. Someone that is *semanasant-ero* ‘Easter-ERO, Easter-lover’ is someone who tends or likes to participate in the Easter celebrations; someone *chocolat-ero* ‘chocolate-ERO, chocolate-lover’ is someone

4. However, it is also conceivable that (contra Rainer 1999: 4632 and Martín García 2007: 270) these adjectives should be classified rather as possessive, given the preferred interpretation of *un niño catarroso* as ‘a child that has a cold’ or *un hombre achacoso* ‘a man that has ailments’. The dispositional reading of the first could be related to the notion that a cold is not something whose length can characterise someone, forcing a habitual interpretation where what is characteristic is having colds.

who tends or likes to eat chocolate, etc. One immediate question is how this eventuality-related interpretation is obtained. In the case of *-ista*, which tends to denote ideologies, the eventuality is inferred from the knowledge that the speaker has about the behaviour that characterises people that follow that ideology, based on the political views, religious options, etc.

Because dispositions are judged by speakers based on typical behaviours, dispositional denominal adjectives tend to presuppose that the subject characterised by a particular property typically participates on events of a particular kind. If Juan is *chistoso*, we state that he would typically tell jokes; if María is *mentirosa* ‘lying’, it should be typical of her to tell lies. This typical behaviour seems also necessary for the truth conditions of the adjectives in *-ero* (cf. *embustero* ‘lying’, or *futbolero* ‘soccer-lover’). This is generally not the case with all adjectives in *-ista*, some of which seem to have a purely dispositional interpretation without any ‘typical behaviour’ reading, even if in some individual cases – such as *alarmista* ‘alarmist’ – the typical behaviour interpretation is clearly present. A person described as *esclavista* ‘pro-slavery’, for instance, does not need to make use of slaves as his or her typical behaviour.

Consider, finally, gradation: as in the case of causative adjectives, degree operates on the meaning introduced by the lexical PP layer, graduating the propensity or disposition towards the eventuality related to the base.

- (26) muy chocolat-ero
 very chocolate-ERO
 ‘very prone to chocolate’

Let us now move to the analysis. Here we will first introduce the notion of qualia structure (§2.1.), which is how we propose that the eventuality-related reading is obtained, and then we will analyse the suffix *-ista*, specialised in this qualifying reading of disposition. Both *-oso* and *-ero* will be analysed in §4, within the context of the problem of underspecified affixes.

2.2 Qualia structure is involved (at least) in dispositional denominal adjectives

Qualia structure (Pustejovsky 1995) was proposed as a way to structure the conceptual meaning contribution of lexical items. Its empirical motivations are many, but the phenomenon in (27) can be singled out as one cornerstone that motivates the analysis.

- (27) Juan empezó el libro.
 Juan began the book
 ‘Juan started {reading / writing} the book’.

The relevant property of (27) is that *empezar* ‘begin’ is a verb with aspectual meaning that picks the starting point of an eventuality (García Fernández et al. 2006: 130–133), but *el libro* ‘the book’ – in theory – does not introduce an eventuality, because it denotes an entity. Pustejovsky’s (1995) proposal is that this noun introduces eventualities through its qualia structure. Specifically, ‘book’ relates to two eventualities: it is an artifact produced through an event of writing, and it is a tool that is meant to be used in reading. These two eventualities are part of the conceptualisation of what a book is, and as such they must be represented in the entry of the noun. Other nouns, referring to natural objects, lack information about the eventuality that produced them and the eventualities they can be used for, and as such produce ungrammatical results in the context of (27) because the phase verb does not have its selectional requisites satisfied.

- (28) #Juan empezó el agua.
 Juan began the water
 Intended: ‘Juan started {drinking / producing} the water’

Note that world knowledge could tell us that water is for drinking, but this is not enough to license (28): the interpretation in (27), then, has to be caused by something grammatically codified. The standard answer is that it is codified in the lexical information associated to the lexical exponent, the nouns *agua* ‘water’ or *libro* ‘book’.

Qualia structure is the way in which the conceptual interpretation of words is organised as information contained in the lexical entry of the exponents – not the syntactic structure that those exponents spell out. It codifies the set of minimal characteristics that capture our understanding of the meaning of different nouns or verbs. Importantly, qualia represents four types of information (Pustejovsky 1995: 85–86):

- a. Formal quale: that which distinguishes the object within a larger domain (including its shape, dimensionality, colour, magnitude, orientation...)
- b. Constitutive quale: the relationship between an object and its constituents, or proper parts (material, parts and component elements...)
- c. Agentive quale: factors involved in the origin or ‘bringing about’ of an object
- d. Telic quale: purpose and function of an object (purpose that an agent has in performing an act, or built-in function or aim which specifies certain activities).

A book, then, contains – in addition to its formal quale and constitutive quale properties – an agentive quale specified as the writing event that originated it, and a telic quale which expresses that the book is related to the purpose of reading.

Qualia structure will be very relevant for both understanding why there are precisely these classes of qualifying adjectives and how affixes match the specific types of qualifying adjectives, as we will argue in §3. However, the immediate relevance

of this way of structuring the conceptual meaning of nouns is the fact that dispositional denominal adjectives are interpreted as propensities to eventualities related to the base nouns. The main idea that we will argue for here and in the next section is that dispositional denominal adjectives involve activating the telic quale of the nouns they are derived from. A disposition characterises the subject by the propensity to be involved in typical eventualities that the base noun is used as a tool for.

Someone *dadiv-oso* ‘present-OSO, generous’ has a propensity to use *dádivas* ‘presents’ when interacting with others – specifically, giving them; someone *brom-ista* ‘joke-ISTA’ has a propensity to use jokes – telling them, and someone *chocolat-ero* ‘chocolate-ERO’ has a propensity to use chocolate – specifically, eating it.

But before showing how this is implemented, a few theoretical remarks are in order. The use of qualia structure in morphological analysis is not new. For Spanish, examples of it are De Miguel (2012), Batiukova (2015), Gibert Sotelo and Pujol (2015) or Gibert Sotelo (2017). Some of these works are lexicalist-oriented, while others are neo-constructionist. However, they agree in one claim that we will also assume here: qualia structure is independent of the syntax. If an event is interpreted because of qualia structure, this event is not represented through syntactic structures – that is, there will not be a VP structure that denotes the event. Rather, the event interpretation will emerge in the conceptual semantics associated to the individual exponents used: if the affix is able to identify the telic quale, and the base carries information about the telic quale, the event will be interpreted.

We are talking about exponents rather than about words, and there is a reason for this: the accessibility of qualia structure does not always depend on the presence of one single word. Empirically, one can find situations where the qualia structure is associated to a combination of exponents that does not necessarily correspond to a lexical word, a compound or otherwise. Consider the example in (29). As we saw in (28), natural objects like water, sand or air do not contain telic or agentive qualia, and fail to combine with *empezar*. *Espuma* ‘foam’ is one such example.

- (29) *Empecé la espuma.
began the foam

However, the noun phrases *espuma de fresa* ‘surf of strawberry, strawberry-mousse’ and *espuma de limón* ‘surf of lemon, lemon-surf’ are artifacts cooked by humans and used as desserts, and they can satisfy the context in (27) because they contain agentive quale and telic quale.

- (30) Empecé la espuma de fresa y la espuma de limón.
began the surf of strawberry and the surf of lemon
‘I started the strawberry-mousse and the lemon-mousse’

It can be shown that these are phrases and not compounds: it is possible to elide the noun in the second element.

- (31) Empecé la espuma_i de fresa y la e_i de limón.
 began the surf of strawberry and the e of lemon
 ‘I started the strawberry mousse and the lemon one’

So a single noun can lack the telic quale in its lexical entry, while a combination of the same noun with other exponents might have it.

In our proposal, adjectives in Spanish are built with prepositional phrases. If we are going to use qualia structure to explain the readings – starting from dispositional adjectives – we have to show that prepositions can identify different types of quale. Interestingly, Johnston and Busa (1999) provide evidence that prepositions like *da* and *a* in Italian are used to define the quale that is accessed in the case of their NP complement. *Da* (32) is used to access the telic quale, and *a* (33) identifies the constitutive quale.

- (32) a. coltello da pane
 knife DA bread
 ‘bread knife’
 b. bicchiere da vino (rosso)
 glass DA wine red
 ‘(red) wine glass’
- (33) a. porta a vetri (rossi)
 door A glass
 ‘(red) glass door’
 b. seni al silicone
 breasts A-the silicon
 ‘silicon breasts’

Spanish behaves in a comparable way. In Chapter 3, §2. we discussed in some detail the bare noun structures introduced by the preposition *de* ‘of’, which we argued is the spell out of KP. We also showed that other prepositions can be used in this construction, but in those cases the relation used to establish the sub-kind of the head noun is not entirely underspecified. The preposition *a* ‘at, to’ is used to introduce the agentive quale, specifying the entity that makes the head noun function.

- (34) a. barco a vapor
 boat at steam
 ‘steamroller’
 b. televisión a pilas
 television at batteries
 ‘battery-operated tv’

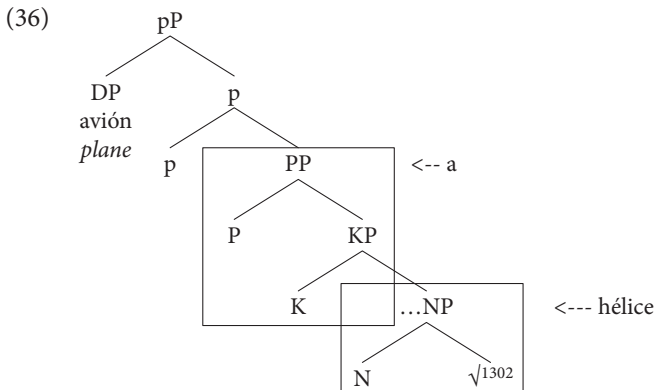
- c. coche a pedales
car at pedals
'pedal-operated car'
- d. avión a hélice
plane at airscrew
'airscrew-operated plane'

Con 'with' and sometimes *en* 'in' select the constitutive quale.

- (35) a. té con teína
tea with theine
- b. abrigo con capucha
coat with hood
- c. estatua en mármol
statue in marmor

Of course, in all these cases *de* 'of' can also be used, but this is simply because *de* does not specify any specific relation, and is compatible with all of the relations.

Collectively, what this suggests is that the specific quale that is identified in one construction can be determined at the level of PP, the lexical layer of prepositions. If *de* 'of' is KP, adding the PP layer specifies the relation, picking for instance the constitutive (cQ) or agentive quale (aQ).



(36), translated to the language of a qualifying adjective, implies that the PP+KP structure of the qualifying adjective will be responsible for determining which quale is picked in the interpretation of the derived adjective. We will argue in §3 that the four classes of qualifying adjective are precisely the ones that they are because each one of them reflects one of the qualia at the level of conceptual semantics. However, we will start the argumentation by studying the specific case of dispositional adjectives.

In the next section, we will apply this idea to the analysis of the suffix *-ista*. We will base the analysis in Fábregas (2014).

2.3 Analysis: The suffix *-ista*

Beyond determining how the telic quale of the base noun is accessed, there are two complications in the analysis of *-ista*. The first one is that *-ista* can be used to form nouns expressing jobs and typical activities (37), sometimes without an adjectival counterpart.

- (37) a. ten-ista
 tennis-ISTA
 'tennis player'
 b. futbol-ista
 soccer-ISTA
 'soccer player'
 c. anal-ista
 analysis-ISTA
 'analyst'

The second one is that, when it produces adjectives, these adjectives are typically related in meaning to nouns with *-ismo*.

- (38) a. marx-ista ~ marx-ismo
 Marx-ist Marx-ism
 b. reform-ista ~ reform-ismo
 reform-ist reform-ism
 c. colonial-ista ~ colonial-ismo
 colonial-ist colonial-ism

A Marxist is not a supporter of Marx, but a supporter of Marxism; similarly, a colonialist is a supporter of colonialism, not of colonies, etc. This, therefore, looks on the surface like a case of haplology, the morphological situation where a morphological unit whose presence can be diagnosed on the basis of meaning or structure is cancelled when followed by another morpheme. It seems that *-ista* forces haplology of *-ismo*, when a pair with *-ismo* can be established.

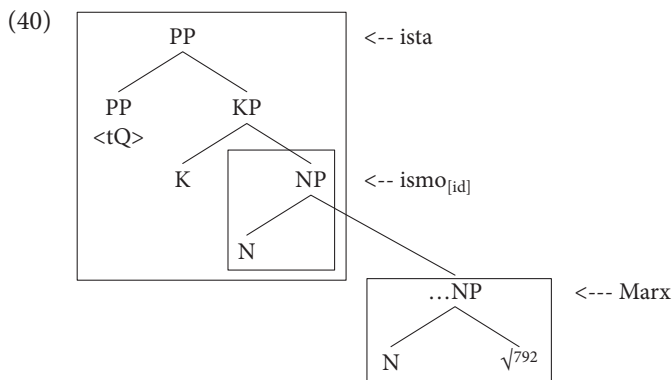
These are the cases that we listed in (25d), where the meaning associated to *-ista* is 'that sympathises with a particular ideology'. Most of the cases in (25c) lack a correspondence with *-ismo*.

- (39) a. juergu-ista ~ *juergu-ismo
 party-ISTA binge-ISMO
 'party-lover'

- b. brom-ista ~ *brom-ismo
 joke-ISTA joke-ISMO
 ‘joking’

Thus, each case should be differentiated in the analysis. Let’s proceed.

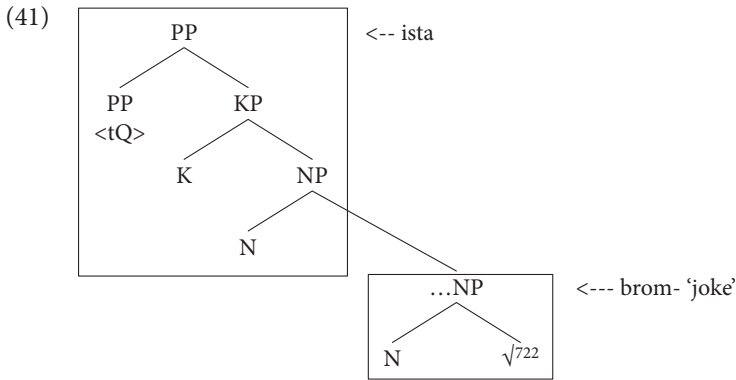
We propose to explain the apparent haplology of *-ismo* under *-ista* in the following way: while *-ismo* is the spell out of the higher NP, *-ista* spells out the same projections as *-ismo*, only with, in addition to them, KP and PP (40).



In (40) *-ismo* introduces an NP layer. As a lexical item, *-ismo* contains conceptual information stating that it introduces a system of thought or set of rules and beliefs related to the notion expressed by the base (this is marked in the entry as [id] for ‘ideology’). Thus, when *-ismo* is added to another noun, the resulting noun is interpreted as naming the ideology related to that noun. Note, in any case, that the ‘ideology’ concept should be interpreted in a broad sense. As noted by Isabel Oltra-Massuet (p.c.), there is a small set of adjectives such as *alarmista* ‘alarmist’ – related to *alarmismo*, ‘alarmism’ – where no ideology in the strict sense is present. However, an alarmist person is characterised by a particular world view, and in this broad sense it would count as an ideology.

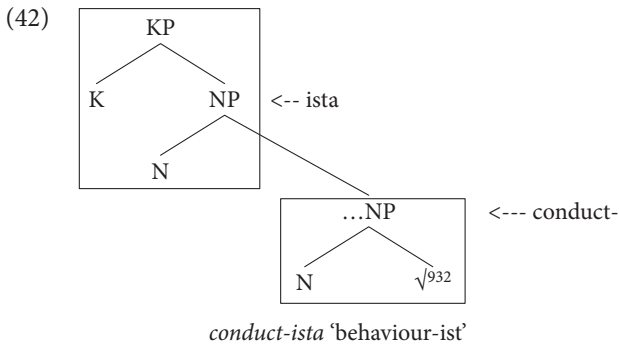
As in the other cases, the adjective is built from the noun by adding KP and PP. At that point, by the Exhaustive Lexicalisation Principle, *-ista* must be used. This lexical item is not marked as conceptually relating to an ideology, but its PP layer carries the information that it restricts the relations expressed by KP to those related to the telic quale, which we represent as <tQ> annotated in the P head.

Thus, we expect three situations. When the whole structure is projected, we obtain qualifying adjectives, which include a PP layer that restricts the set of R relations to those involving the telic quale.

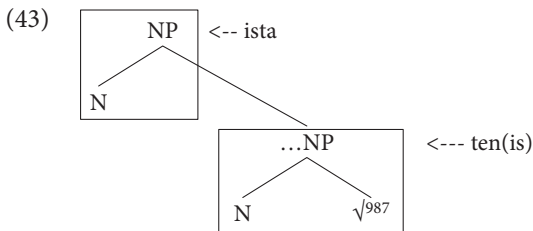


The telic quale selects the purpose of function of the base noun. The whole structure, when predicated from a subject, is interpreted as the characteristic property of using the base noun for a repeated eventuality that is directly related to that noun.

By the Superset Principle, *-ista* can also be used without the PP layer, in which case we obtain the relational adjective uses of *-ista*.



But notice that *-ista* also contains an NP layer at the bottom of its lexical entry, so it can also produce nouns unrelated to adjectives, such as *deport-ista* 'sport-ISTA, sportsman' or *ten-ista* 'tennis player'.



In this last case, there are two subclasses of nouns: those that have a pair with *-ismo* are those where the base can be interpreted as related to a system of thought (*comun-ista* ‘commun-ist’ vs. *comun-ismo* ‘commun-ism’), simply because this is the concept related to *-ismo* as a lexical exponent. In such cases, *-ista* is read as the person that adheres to that system of thought – we suggest that this is obtained by mere lexical opposition between the two nominalisers, which can only alternate in the same when they express a related opposition of meanings. The second subclass are the cases, like *deport-ista* ‘sport-ISTA, sportsman’, where there is no straightforward system of thought related to the base noun. In such cases, the opposition with *-ismo* is impossible, and the reading that emerges is that the entity described performs a role in the concept denoted by the base.⁵

Having a noun at its bottom also explains that *-ista* can appear to derive, on the surface, adjectives from adjectives, something that in fact – once the lexical entry is examined in detail – is not right because the adjective becomes nominalised before being turned into a derived adjective:

- (44) a. real-ista (cf. real-ismo ‘realism’)
 real-ist
 b. comun-ista (cf. comun-ismo ‘communism’)
 common-ISTA,
 ‘communist’
 c. buen-ista (cf. buen-ismo ‘property of being sanctimonious’)
 good-ISTA
 ‘sanctimonious’

However, leaving these other uses behind, and going back to the qualifying adjectives in *-ista*, the proposal is that they contain as adjectivalisers a PP layer which picks the telic quale as the relation expressed to characterise the subject, because otherwise it is impossible to extract a related eventuality from a noun denoting an entity.

5. Admittedly, the interpretation that *-ista* somehow comes to express as a noun the entity whose job or main activity relates to an eventuality of the base is not straightforwardly captured in this proposal. In other words: given the structure, all that we expect is that *-ista* should denote an entity that is somehow built over the notion expressed by the base. Importantly, however, one cannot claim that the NP layer in (43) is the one that carries the information that the telic quale is accessed, because of the existence of formations where the noun does not denote an occupation through the main purpose of the noun expressed by the base: *accion-ista* ‘share-holder’, *repcion-ista* ‘reception-ist’, *medall-ista* ‘medal-ist’, *mileur-ista* ‘thousand.euros-ISTA, person that only earns one thousand euros per month’, or *sol-ista* ‘solo-ist’ are instances of nouns formed with *-ista* where the telic interpretation of the base would not give the correct meaning. At this point, the best suggestion we can offer is that this preferred occupation-related reading of *-ista* nouns is a surface effect that comes from the numerous qualifying adjectives in *-ista* that do pick the telic quale.

We have seen, then, that qualia structure is required to explain at least one class of qualifying adjectives. Is it useful for the others? The next section will argue that the answer is yes.

3. Why only four conceptual classes of qualifying denominal adjectives?

At this point, when we have discussed the four classes of qualifying denominal adjectives, we are in a position to introduce a deeper question: why are the classes of qualifying adjectives precisely these four ones? The question immediately relates to a well-known problem in morphology: why are there affixes that can be used for some types of adjective, but not others? Why is it not the case that each affix can only produce one type of qualifying adjective?

In this section we will argue that qualia structure lies at the core of the existence of these four classes, or in other words, that there are four classes because the flavours of P involved in qualifying adjectives are ultimately differentiated by which quale they use to name the relation between the base and the subject.

There are two logical possibilities to differentiate the four classes: the differences are either represented in the syntactic tree in a systematic way, or they are left to extra-syntactic properties. In the first case, we would expect that the four classes would display differences in their distribution that reflect grammatical properties – for instance, different sensitivity to degree modifiers, different positional restrictions, different behaviour under agreement, etc. While qualifying adjectives coming from nouns do differ from relational adjectives in precisely these respects, the four subclasses of qualifying adjectives do not contrast in any of these grammatical properties – we will see, in fact, that the same can be said for the subclasses of deverbal adjectives. The only contrast that we have identified that suggests a distinction among the P layers was discussed in Chapter 4, §4, namely that similitudinal adjectives reject negative prefixes, but we argued there that the reason for this was semantic in nature: vagueness makes the negation of the property semantically vacuous. This situation, as we will argue, is expected if the distinction between the four classes originates in conceptual semantics, specifically in terms of qualia structure. Moreover, we will see that adopting this view provides an elegant account of the vague meaning of individual affixes (§4). We will first present our account, and then we will show why a syntactic account would not capture the facts, and make the wrong predictions.

We have already seen that the telic quale is necessary to activate the eventuality reading needed for dispositional denominal adjectives. That telic quale extracts a relation based on the eventualities that the base noun can typically be used for.

Interestingly, possessive adjectives are easily related to the constitutive quale. What the possessive adjective does is characterise the subject through a salient entity that is a constitutive part of it. This, in fact, explains directly why any noun used in this context triggers an inalienable possession reading when used inside the possessive adjective. The PP layer activates in such cases the constitutive quale, and thus the base noun is interpreted as a component of the subject.

Similitudinal adjectives relate to the formal quale, because in them the similarity relation takes any of the properties that differentiate the base noun from other entities in the same domain: shape, size, colour, texture, etc.

Finally, causative adjectives activate the agentive quale: the subject is interpreted as the entity that is responsible for the bringing about of the notion in the base.

So the reason why there are four classes of qualifying adjectives is as simple as (45):

- (45) The PP layer of denominal adjectives defines the specific quale that the relation R is about

There are only four classes because there are only four types of quale. Specifically, we propose that the four classes of qualifying adjectives are delimited by the four classes of qualia precisely because the adjective is not a primitive category in natural languages. Because the adjective is built by recycling other structures, specifically prepositional structures in Spanish, the morphosyntactic possibilities available are restricted from the very beginning – in short, as ‘adjective’ is not a primitive category, it cannot be the case that the grammar of a language defines different subclasses of the adjectival head. In the absence of morphosyntactic resources to distinguish any relevant subclasses, Spanish relies on a structure outside of morphosyntax: qualia structure, which affects conceptual semantics (as has been proposed for the interpretations of some prefixes; see in particular Gibert Sotelo & Pujol 2015; Gibert Sotelo 2017: 29–61).

To be concrete, the four different classes of qualifying adjectives are defined at the level of PP, as lexical prepositions that are specialised to identify each one of the qualia. We have already seen that dispositional adjectives are related to a PP layer specified as telic quale (46a). What we have represented as CausP in §1.2 should now be seen as (46b), a P head that is specialised in activating the agentive quale. PossP (Chapter 4, §3) and SimP (Chapter 4, §5) are, respectively, (46c) – a P that picks the constitutive quale – and (46d) – one that selected the formal quale, respectively.

- (46) a. [PP P_{<tQ>} [KP...]] *Dispositional adjectives*
 b. [PP P_{<aQ>} [KP...]] *Causative adjectives*
 c. [PP P_{<cQ>} [KP...]] *Possessive adjectives*
 d. [PP P_{<fQ>} [KP...]] *Similitudinal adjectives*

In (46) we are being consciously vague about whether the different qualia should be represented as a grammatical feature that differentiates between types of lexical Ps or should be seen as a conceptual semantic property that is not relevant for syntax.

In the first analysis, qualia structure would have been partially grammaticalised to define different types of lexical P heads. This would go against the orthodox interpretation where syntax does not directly communicate with qualia structure. We would then expect that each head would have distinct grammatical properties, perhaps selecting (as is the case with different little *v* heads in Harley 1995) different types of complement. A base would be coerced by each specific P into denoting a possessed entity, a caused entity, etc. In the second analysis, with qualia being just conceptual semantics, syntax defines only one head, P, and the distinction between the classes is only relevant at conceptual semantics. Specific affixes would be compatible with one or the other reading depending on their conceptual semantic entry as lexical items, and ultimately determining whether a base can produce a possessive, causative, similitudinal or dispositional adjective would depend on its semantic flexibility.

We have repeatedly seen that there are no substantial grammatical differences between the four classes of qualifying adjectives: the only difference – that similitudinal adjectives cannot be denied through prefixes – was ultimately explained through (structural) semantics. In the absence of clear evidence of distinct syntactic properties for each subclass of qualifying adjectives, we are inclined to adopt the more orthodox view of qualia as conceptual semantics, although the abstract representation of qualia must be part of the structural information at LF.

Note on this respect that, empirically, the choice between the four qualia cannot be entirely left to the nature of the exponent that spells out P, as one would expect of pure conceptual semantics. It is true that we have seen several cases of affixes that straightforwardly correspond to each one of the four semantic types of P, in the sense that they can only be used to produce qualifying adjectives of one type. (47) illustrates some of these.

- (47) a. P_{<tQ>}: -ista
 b. P_{<aQ>}: -ífico, -ígeno
 c. P_{<cQ>}: -udo, -eco, -eta, -ón...
 d. P_{<fQ>}: -uno, -esco, -áceo, -il, -oide...

3.1 Hyper-specific denominal adjectivalisers as evidence for a conceptual distinction

If this explanation is on the right track and the distinction between the four classes is ultimately based on the qualia structure that each P head specifies, we make a clear prediction: in some cases, the affix used will go beyond the specification of a single quale and will define in its conceptual entry also a concrete concept. To say it in an even clearer way: if the distinction between the flavours of P in qualifying adjectives is ultimately based on the conceptual semantics provided by qualia structure, we expect in fact that some of the adjectivalisers will further specify the qualia by specifying a concrete and fully defined concept within the adjective structure.

For instance, we expect that in the case of dispositional adjectives some affixes will conceptually specify a particular event that the qualifying adjective must be related to. In this context, the following denominal adjectives, involving suffixes of neoclassical origin, become relevant.⁶

- (48) a. *-icida*: *hom-icida* ‘man-ICIDA, that kills men’, *rat-icida* ‘rat-ICIDA, that kills rats’, *femin-icida* ‘woman-ICIDA, that can kill women’...
- b. *-ícola*: *arbor-ícola* ‘tree-ICOLA, that tends to live in trees’, *terr-ícola* ‘earth-ÍCOLA, that lives on earth’, *urban-ícola* ‘city-ICOLA, that likes living in the city’...
- c. *-ígrado*: *digit-ígrado* ‘finger-IGRADO, that uses the paws to walk’, *plant-ígrado* ‘sole-IGRADO, that uses the sole to walk’
- d. *-ólatra*: *demon-ólatra* ‘devil-OLATRA, that worships the devil’, *zo-ólatra* ‘animal-OLATRA, that worships animals’...

All these affixes have several properties in common. One is that they are historically related in a very obvious way to Latin or Greek verbs: *-icida* relates to Latin *caedere* ‘to kill’; *-ícola*, to Latin *colere* ‘to inhabit’; *-ígrado*, to Latin *gradi* ‘to walk’; *-ólatra*, to Greek *latreia* ‘adoration’. This neoclassical origin explains that they tend to combine with bases that are also of neoclassical origin (for instance, *hom-* instead of *hombr(e)*, ‘man’; *digit-* instead of *ded(o)* ‘finger’).

There are clear agent-like interpretations assigned to the subject of the adjectives in *-icida* and *-ólatra*. The base is not interpreted as the entity that is produced, but as the entity towards which an event is oriented, and the subject is the causer

6. Some of the adjectivalisers proposed in Rainer (1999) have a surface similarity to this hyper-specific class, but in fact should be classified as neoclassical stems. For instance, Rainer (1999) proposes the suffix *-ifero*, which can be possessive or causative, but the existence of an adjective derived from *-fero* (*fer-az* ‘fertile’) suggests that it should rather be treated as part of a compound. Similarly, *-ifugo* relates to *fug-az* ‘fleeing’, and *-ilocuo* to *locu-az* ‘talkative’. Similar tests also exclude his proposed adjectivalisers *-ófilo*, *-ófobo* and *-ófago*, all of which behave like neoclassical stems with a linking element.

or agent of that event. For this reason, these two adjectivalisers should be analysed as affixes that identify the P head that activates the agentive quale. However, they add conceptually specifically which type of eventuality should be associated to the base: in the case of the first, (48a), it is ‘kill’; in (48d), ‘worship’.

- (49) a. *-icida*_{<a: kill>}
 b. *-ólatra*_{<a: worship>}

Given their meaning, it is clear that *-ícola* and *-ígrado* are subcases of telic quale: the base is used for some function, which in the first case is specified in the lexical entry as ‘inhabit’, and in the second, ‘walk’.

- (50) a. *-ícola*_{<t: inhabit>}
 b. *-ígrado*_{<t: walk>}

In essence, the existence of these affixes makes it necessary to accept that the denominal adjectivalisers have conceptual entries that relate to qualia. Once that this is shown to be necessary, it becomes more parsimonious to propose that the distinction between the four classes is also related to that. However, there is also independent evidence against a syntactic approach to limit the number of classes of qualifying adjectives to four. Let us see them in the next section.

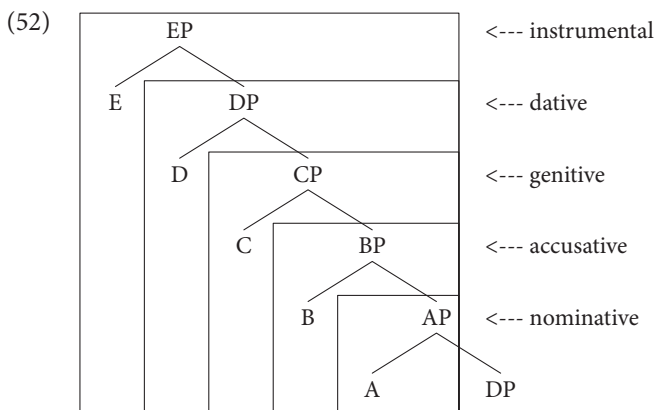
3.2 Against a syntactic decomposition approach

One first alternative way to explain why there are only four classes of qualifying denominal adjectives is to propose that the four readings are precisely those because syntax defines a specific space through a series of heads, and the adjectives are formed inside that space.

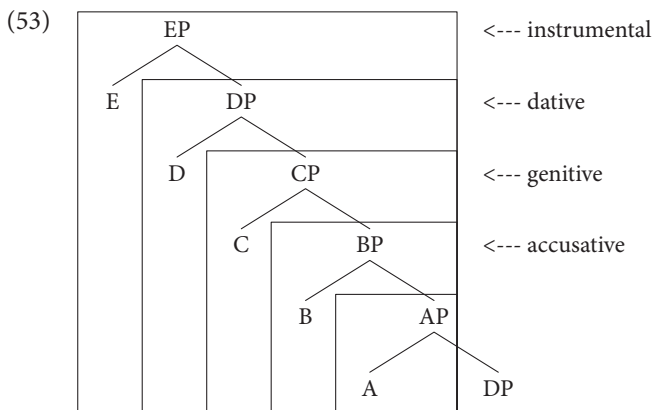
This idea relates to Caha’s (2009) work on case: in his system, the different cases – nominative, accusative, genitive, dative, etc. – are defined within a syntactic space, the case area, which has the shape of a rigid functional sequence as in (51).

- (51) [EP E [DP D [CP C [BP B [AP A [DP]]]]]]]

How many cases a language differentiates depends on this functional sequence; that is, cases are distinguished by distinct syntactic heads: in (51), the heads A to E define five case. Second, one case contains the other; that is, if AP corresponds to what we label ‘nominative’, BP would correspond to accusative and crucially AP is contained inside BP. Third, this containment relation, where each new case involves the addition of a new head, accounts for the fact that one exponent can express both accusative and nominative, by the Superset Principle. (52) represents a situation where there are different exponents for the five case distinctions that the language makes.



In this case, the language would contain five exponents for case, each of them specifically used for each one of the configurations; instrumental would structurally contain dative, dative would contain genitive, etc., but morphologically each one of the structures is distinguished. (53) shows a situation where there is one exponent for accusative but no designated exponent for nominative. In this situation, given the Exhaustive Lexicalisation Principle and the Superset Principle, the language would use the accusative exponent to mark nominative as well.



As we explained in Chapter 1, §3.1, we have not assumed Caha's theory of case because it does not allow us to distinguish between inherent and structural case. We have treated inherent case as a single undecomposed KP establishing a relation – while the structural cases lack any case projection above DP. However, we have used the combination of the Superset Principle and the Exhaustive Lexicalisation Principle to explain the relation between qualifying and relational adjectives. The cases of affixes that can be used to produce both relational and qualifying adjectives have been analysed as situations where the same exponent identifies both PP and

KP, and because PP contains KP, the affix can spell out a structure that contains only KP or a structure that contains both KP and PP.

Thus, the containment relation explains why relational adjectives and qualifying adjectives can be produced by essentially the same affixes. But do we have the same containment relation between the four classes of qualifying adjectives? Is there any meaningful way in which one class can be said to contain the other?

The four classes, as we have seen, are (i) possessive, (ii) similitudinal, (iii) causative and (iv) dispositional. If one contains the other, we expect to identify a feature that can be added to the more basic class and which can explain its differences with respect to the more complex class. This happens between relational adjectives and qualifying adjectives, where adding the PP layer means – among other things – that the relation becomes specified, that a scale can be associated to the adjective and that the adjective can be used as a predicate. However, we see no way in which the same result can be obtained with the four notions expressed by qualifying adjectives. Assume that possession is the most basic notion because of its general interpretation, which includes possession of physical objects as well as possession of psychological states. If a containment analysis could be performed, then we should be able to identify a feature that, when added to possession, produces similarity, causation or disposition towards an event. I cannot imagine a feature with this type of grammatical behaviour.

Moreover, the containment relation is intended to explain why some pieces are more flexible than others. The theoretical assumptions of Caha (2009) with respect to exponents – which we have assumed – is that exponents can only spell out syntactic constituents. Given the ordering in (52), then, the heads E and B do not form a syntactic constituent to the exclusion of D and C; therefore, it would be unexpected that one exponent will be able to spell out E and B, but not D and C at the same time – that is, that an exponent would be used for instrumental and accusative, but not for dative and genitive.

Is there any way in which the four classes of qualifying adjectives can be ordered so that the flexibility of each individual affix is always compatible with the assumption that only syntactic constituents are spelled out? Let us examine a few facts.

The suffix *-oso* can produce adjectives belonging to the four classes: possessive, similitudinal, causative and dispositional. This does not tell us anything about its ordering, then. As for *-ado*, it produces possessive and similitudinal adjectives, but not causative or dispositional. This would suggest that possessive and similitudinal adjectives are adjacent in a hierarchy like (52). There is a suffix *-eño* that produces both similitudinal adjectives (*aguil-eño* ‘eagle-EÑO, like an eagle’) and dispositional adjectives (*hogar-eño* ‘home-EÑO, that likes to be home’). This would mean that dispositional adjectives are ordered adjacent to similitudinal adjectives, and therefore possessive and dispositional adjectives would not be adjacent to each other.

This would produce a hierarchy like (54), where – assuming that possession is less semantically specified than disposition – relational adjectives would be adjacent to possessive qualifying adjectives, but not to similitudinal ones.

- (54) [Disposition [Similarity [Possession [KP...]]]]

An immediate prediction, then, is that no affix will be able to produce similitudinal adjectives and relational adjectives without also producing possessive adjectives. The reason is that Similarity and KP do not form a constituent to the exclusion of Possession. However, it is easy to find counterexamples: *-eño* produces for instance the demonym *madril-eño* ‘from Madrid’ and several similitudinal adjectives, but no possessive adjectives.

It is easy to find counterexamples for any other ordering proposed where the four qualifying readings of denominal adjectives are in a containment relation. The real generalisation is that there are causative, dispositional, similitudinal and possessive affixes that produce relational adjectives (55).

- (55) a. *-ífico* honor-ífico ‘honor-ific’ [Causative affix]
 b. *-ista* conduct-ista ‘behaviour-ist’ [Dispositional affix]
 c. *-eño* madril-eño ‘from Madrid’ [Similitudinal affix]
 d. *-eco* yucat-eco ‘from Yucatán’ [Possessive affix]

This forces the conclusion that KP must be equally adjacent to the four classes, therefore imposing a structure like (56) where the four readings are located in PP, at the same height. That is, the four readings are structurally equally complex, all different flavours of P as we have argued above.

- (56) [PP [KP...]]

3.3 Against an account based on scalar properties

If containment does not apply to the PP that introduces the four classes of adjectives, then it might apply to a higher head within the prepositional area. We have proposed that Spanish adjectives activate in the lexical PP layer both Place and Path, with Place corresponding to the notions of possession, similarity, etc., and Path corresponding to a ScaleP. One possibility to explain the differences between the affixes would be that the ScaleP that each one of the classes of adjectives introduces is different.

Up to now we have largely ignored the scalar properties of the four classes of qualifying adjectives. There is a good reason for that: the grammatical behaviour of this property is extremely boring.

The scalar properties of the four classes are the same, and they are precisely those that one expects from the types of relations that they express. In the case of similitudinal adjectives, we saw that the scale allows for a minimal value – as witnessed by compatibility with *ligeramente* ‘slightly’ (57). This is expected, we argued, because the notion of similarity is established as soon as two entities share one single property, a minimal amount.

- (57) *ligeramente* *aguil-eño*
 slightly eagle-EÑO
 ‘slightly aquiline’

Similarly, the scales of dispositional adjectives, possessive adjectives and causative adjectives lack maximal values. Having sand is satisfied by a minimal amount of sand, and having a big belly is satisfied as soon as the belly minimally exceeds a particular value (58). Having a disposition to eating chocolate does not have an upper bound, but can be satisfied as soon as the normal inclination towards chocolate is exceeded by a minimal amount (59). Causing stress, again, can be a characteristic property as soon as something causes stress slightly more than what is normal, but there is no upper boundary (60).

- (58) {*ligeramente* / #*completamente*} {*aren-oso* / *barrig-ón*}
 slightly completely sand-OSO belly-ÓN
 ‘slightly sandy / with a slightly big belly’
- (59) {*ligeramente* / #*completamente*} *chocolat-ero*
 slightly completely chocolate-ERO
 ‘slightly inclined to chocolate’
- (60) {*ligeramente* / #*completamente*} *angusti-oso*
 slightly completely stress-OSO
 ‘slightly stressful’

Then, the four classes of adjectives do not differ significantly in their scalar properties: they all accept *slightly* and reject *completely*. The same ScaleP can dominate them all, as represented in (61). This will not give us a difference between the classes or individual affixes, either.

- (61)
-
- ```

 graph TD
 ScaleP --> Scale
 ScaleP --> PP
 PP --> P
 PP --> KP["KP..."]

```

Thus, we conclude that the account based on qualia structure is better at explaining why there are only four classes, correctly predicts that there should be affixes that hyper-specify the concept used to name the relation, and better captures the fact that the four classes display a largely homogeneous grammatical behaviour. In particular, the syncretism relations between affixes that can produce adjectives of two or more classes are not the ones predicted in a syntactic decomposition analysis, given nanosyntactic assumptions. The following section, in fact, is devoted to showing how our account captures the case of affixes that produce adjectives of two or more classes.

#### 4. Affixes that produce adjectives of two or more classes

In our proposal, where the adjectivalisers are related to different flavours of the P layer of adjectives, the suffixes that can produce members of two or more classes of qualifying adjectives are conceptually underspecified. Let us see how this works.

Many affixes can produce both possessive and similitudinal adjectives without extending to causative or dispositional ones. (62) provides a partial list:

- (62) a. -ado (*perl-ado* ‘pearl-ADO, with pearls or like a pearl’)  
 b. -(i)ento (*gras-iento* ‘fat-IENTO, with fat’ or *cenic-iento* ‘ash-IENTO, like ashes’)  
 c. -ario (*deficit-ario* ‘deficit-ARIO, with deficit’ or *carcel-ario* ‘jail-ARIO, like what one does in jails’)  
 d. -ino (*sietemes-ino* ‘seven.month-INO, with seven months of age’ or *crystal-ino* ‘glass-INO, like glass’)  
 e. -izo (*paj-izo* ‘straw-IZO, straw-like’ or *cal-izo* ‘lime-IZO, with lime’)

These exponents are compatible with two types of semantic P: the one that identifies the constitutive quale, and the one that identifies the formal quale. There is an intuitive sense in which the constitutive and formal qualia differ from the other two: they lack any kind of entailment that the subject of the adjective acts as an agent of any type. The agentive quale – in an obvious sense – imposes an interpretation where the subject is agent-like. The telic quale is also related to this type of interpretation, both because the interpretation is that the subject uses the object in the base for a typical eventuality, and because this use implies a purpose that the subject has in using that entity. Thus, in a sense the constitutive and the formal qualia form a natural class, because they are the two types that exclude any possible agent-like entailment in the subject.

Interestingly, a similar type of connection between the constitutive and the formal qualia can be identified in the prepositional domain. *De* ‘of’ can be used

to introduce both possession (63a) and qualities (63b), but this should not be surprising given the extremely underspecified nature of this preposition. It is more significant, given that its semantics is stronger, that *con* ‘with’ (64), whose main meaning is constitutive (64a), can also be used to introduce properties of the head noun that would be identified with the formal quale (64b).<sup>7</sup> As in the case of qualifying adjectives, it would ultimately be the conceptual semantics of the object introduced by the preposition, and its plausible relation to the head noun, what would determine which one of the two readings prevails.

- (63) a. el coche de Pedro  
           the car of Pedro  
           ‘Pedro’s car’  
       b. el policía de ojos verdes  
           the policeman of eyes green  
           ‘the policeman with green eyes’
- (64) a. un café con leche  
           a coffee with milk  
       b. un reloj con forma de pera  
           a clock with shape of pear  
           ‘a pear-shaped clock’

Other attested relations between the readings are more difficult to account for, and in such cases the temptation is to claim that some of the attested readings emerge through lexical listing. The suffix *-eño* is very productive with similitudinal adjectives – thus, it activates the formal quale – (65a), but there are a small number of formations where the reading is dispositional (65b).

- (65) a. abril-eño ‘April-EÑO, April-like’, aguil-eño ‘eagle-EÑO, aquiline’, agost-eño ‘August-EÑO, August-like’, marc-eño ‘March-eño, March-like’, frail-eño ‘friar-EÑO, friar-like’, trigo-eño ‘wheat-EÑO, wheat-like’...
- b. halag-üeño ‘flatter-EÑO, flattering’, hogar-eño ‘home-EÑO, that likes to be home’

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7. Note, in this respect, that the verb *tener* ‘have’ can also take as its object nouns expressing properties of the formal qualia of the subject: *tener forma de pera* ‘to have shape of pear’. What this suggests is that, rather than saying that *tener* ‘have’ or *con* ‘with’ are underspecified so that they can take both the constitutive and the formal quale, one should adopt the position that the properties of an object – which belong to the formal quale – can be reinterpreted as entities that are part of the internal constitution of the object – therefore as part of the constitutive quale. While the two qualia are distinct, this merely would say that particular types of concepts can be both interpreted as possessed entities or characterising qualities. This might also favour that possessive and similitudinal adjectives are so closely related to each other.



We believe that one has to resist the temptation to propose that there is some property that makes the telic and the formal quale a natural class to the exclusion of the other two. That would be a slippery slope where the level of generality necessary to identify resemblances between the two qualia would remove any potential prediction. We believe that it is more likely that the formations in (62b) are stored as idioms – thus, lexical exceptions. In the prepositional domain, perhaps significantly, there are no prepositions that express both the formal and the telic quale, to the exclusion of the other two.

#### 4.1 *-oso* and *-ero*

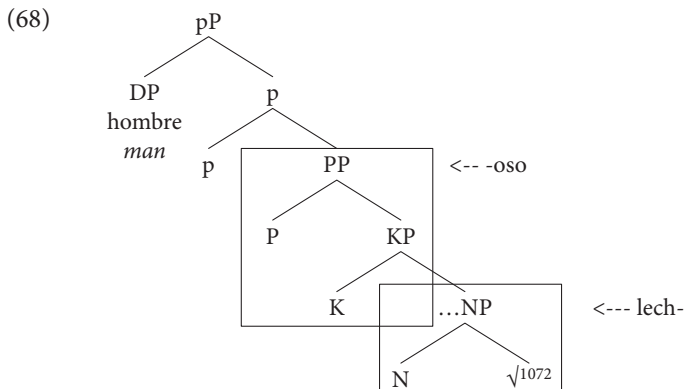
There are two denominal affixes that show an extreme level of underspecification. These are *-oso* (studied in detail in Martín García 2008) and *-ero*. The following set of examples illustrates their four uses.

- |         |                                        |               |
|---------|----------------------------------------|---------------|
| (66) a. | pulg-oso                               | Possessive    |
|         | ‘flea-OSO, with fleas’                 |               |
| b.      | sed-oso                                | Similitudinal |
|         | ‘silk-OSO, like silk’                  |               |
| c.      | angusti-oso                            | Causative     |
|         | ‘stress-OSO, stressful’                |               |
| d.      | litigi-oso                             | Dispositional |
|         | ‘litigation-OSO, contentious’          |               |
| (67) a. | quinceañ-ero                           | Possessive    |
|         | ‘fifteen.years-ERO, of 15 years’       |               |
| b.      | barriobaj-ero                          | Similitudinal |
|         | ‘slum-ERO, like people from the slums’ |               |
| c.      | placent-ero                            | Causative     |
|         | ‘pleasure-ERO, pleasant’               |               |
| d.      | peset-ero                              | Dispositional |
|         | ‘peseta-ERO, money-grubbing’           |               |

Of course, not all these readings are equally productive: *-ero* is more productive with dispositional adjectives than with the other classes. The possessive reading is relatively well-documented (*terr-ero* ‘mud-ERO, made with mud’, and the whole series of adjectives expressing ages, such as *catorceañ-ero* ‘of 14 years’, *doceañ-ero* ‘of 12 years’, etc.). In contrast, there are very few causative formations (Rainer 1999: 4632 only mentions *lastim-ero* ‘pity-ERO, that causes pity’ as an example) and the similitudinal examples are not abundant either. In the case of *-oso*, the dispositional and causative examples are few in comparison with the more abundant possessive and similitudinal classes.

So how can this flexibility be accounted for? Our proposal is that, as exponents, these affixes are completely underspecified and are therefore able to activate any of the four qualia, depending on the conceptual semantic properties of the base.

Remember that *-oso* and *-ero* are to a great extent dependent on the concept expressed by the base, and sometimes also the subject of the construction, to determine their interpretation. (68) is impossible in the causative interpretation because neither the subject nor the base make reference in their conceptual structure to any specific event, as they are both natural entities.



#lech-oso, 'milk-OSO', intended as 'that produces milk'

In the case of *-oso* we saw that possessive and similitudinal adjectives almost always relate to bases that denote physical entities – with a few exceptions, like *mied-oso* 'fear-OSO, fearful'. The difference between the two types of adjective depends on several factors. The first is whether the base is conceptually categorised as an entity with a salient formal quale property (69a); if not, the possessive reading is preferred (69b).

- (69) a. chicl-oso  
chewing.gum-OSO  
'like chewing gum'
- b. carn-oso  
flesh-OSO  
'fleshy'

Second, sometimes the conceptual semantics of the subject might distinguish between the two readings. This is for instance the case of *cavern-oso* 'cave-OSO, cavernous'. In (70a) it is interpreted as possessive 'that has caves', because the subject is a geographical object; in (70b), it is a similitudinal adjective 'that sounds deep like a cave', because the subject relates to sound.

- (70) a. una región muy cavernosa  
 a region very cavernous  
 ‘a region with many caves’  
 b. una voz muy cavernosa  
 a voice very cavernous  
 ‘a very deep voice’

Third, still there are cases where both readings are available, and context will have to decide. If we say that a particular land is *pantan-oso* ‘swamp-OSO’, we could mean that it has a lot of swamps or that it resembles a swamp in some sense.

We have also seen that the suffix *-oso* gets causative readings only with psychological states, but remember that this is not a bi-conditional statement: with other psychological states, *-oso* gets possessive readings (cf. *mied-oso* ‘fear-ful’). In any case, the agent-like reading in the first case, and the experiencer-like reading in the second are the two main relations that one expects a psychological state to establish. Finally, the dispositional readings with *-oso* are singled out because they always involve a count noun that has a prominent event interpretation.

The general conclusion is this: even though there are a few exceptions that could be lexically listed, the different interpretations of *-oso* correlate with differences in the type of base that it combines with.

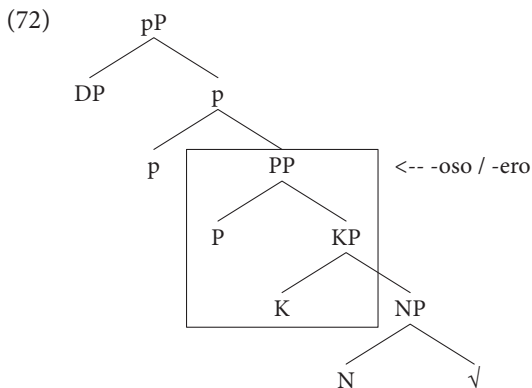
Similarly, for the case of *-ero* one can establish very clear conceptual semantic tendencies related to the base. The similitudinal reading is almost always related to nouns expressing time periods in the calendar (*agost-eño* ‘August-like’, *abril-eño* ‘April-like’, *marc-eño* ‘March-like’, *navid-eño* ‘Christmas-like’...). The possessive reading is almost exclusively related to bases denoting the age, in years (*quinceañ-ero* ‘of 15 years’). The suffix gets a default reading as dispositional, but even in such cases there are situations where the adjective can be interpreted in more than one sense (71).

- (71) a. un hombre choric-ero Dispositional  
 a man chorizo-ERO  
 ‘a man that likes eating chorizo a lot’  
 b. un arroz choric-ero Possessive  
 a paella chorizo-ERO  
 ‘a paella with chorizo’

An exclusively causative reading is exceptional, and the strong allomorphy displayed by the base (*placer* ‘pleasure’ ~ *placent-ero* ‘pleas-ant’) suggests that these cases should be lexically stored anyways.

For all these reasons, we propose that *-oso* and *-ero* have this underspecified status because they are not specialised as lexical items in any of the four qualia. They

are compatible with the four semantic types of P layer. To be clear: when interpreting adjectives that carry these morphological exponents, speakers are forced to rely a lot on the conceptual semantics of both base and subject in order to determine the specific readings that novel adjectives coined with these affixes have. However, from the perspective of spell out, what we claim is merely that the lexical entry of these suffixes is underspecified about the type of quale, and therefore they allow insertion in phrases containing P of any of the four flavours.



Other factors that can be involved in determining the specific readings in adjectives that contain these affixes include the following:

- a. The existence of an adjective formed from the same base, but with a suffix that specifies the quale. For instance, *-eño* selects the formal quale. The existence of *aguil-eño* ‘eagle-like’ would favour that if some speaker produces the adjectives *aguil-oso* or *aguil-ero* these would be interpreted rather as possessive (‘that has eagles’). The same type of competition, which is close to Aronoff’s (1976) notion of blocking, might be behind the fact that *mied-oso* ‘fear-ful’ is interpreted as possessive: the existence of the unambiguously causative *terror-ífico* ‘terror-IFICO, terror-inducing’ could explain that, exceptionally, this state-denoting base is interpreted as the experienced state with *-oso*.
- b. The possibility that some of the formations are directly stored in the lexicon as idioms, where the conceptual interpretation is specified – this is tempting in the case of the causative formations in *-ero*.

With this, we leave the discussion of the suffixes that carry underspecific meanings, and will discuss briefly those that are hyper-specific in the next section.

## 5. A brief note on parasynthesis

Before we conclude the chapters dedicated to denominal adjectives and move to deverbal formations, it is necessary to make a few remarks about the so-called parasynthetic adjectives, a few of which are illustrated in (73).

- (73) a. a-fortun-ado  
 A-luck-ADO  
 ‘lucky’  
 b. a-diner-ado  
 A-money-ADO  
 ‘rich’  
 c. a-mendig-ado  
 A-beggar-ADO  
 ‘similar to a beggar’  
 d. a-limon-ado  
 A-lemon-ADO  
 ‘similar to a lemon’

The goal of this section is not to provide a full-fledged analysis of parasynthesis, a phenomenon that is much more common in verbalisations than in adjectivalisations, and that greatly exceeds the empirical boundaries of this book. It is impossible to discuss parasynthesis in one single section, so we will limit ourselves to describing the properties of parasynthetic adjectives, and showing the potential implications that these properties have for the theories pursued in this book.

Parasynthesis is a complex phenomenon that poses several problems for traditional approaches to morphology, as it involves situations where a category change requires addition of both a prefix and a suffix (see Todaro 2017 for a detailed overview of the history of the term in modern linguistics, and a discussion of the other senses in which it has been used in some approaches, such as Darmesteter 1890, 1894). Thus, in (73a) for instance, speakers that have this adjective and relate it compositionally to the noun *fortuna* ‘luck’ lack the derived words containing just the suffix (*\*fortun-ado*) or just the prefix (*\*afortuna*). This has been interpreted, descriptively, as a counterexample to the Binary Branching Hypothesis, to the extent that a parasynthetic formation seems to involve the simultaneous addition of a prefix and a suffix (Scalise 1994). Several analyses have been proposed of this operation, including treating prefix and suffix as a single discontinuous morpheme (Crocco Galèas & Jacobini 1993), treating the suffix as an inflectional marker (Corbin 1987) and treating the whole process as a standard case of derivation where a prefix is added for idiomatic reasons in a further step (Scalise 1983,

1994). See, also, Elliott (1884), Thorn (1907), Malkiel (1941), Reinheimer-Ripeanu (1974), Alcoba (1993), Di Sciullo (1996), Fradin (2003), Iacobini (2004, 2010), Montermini (2008), Lindner (2011) and Serrano Dolader (2015) on the properties and analyses of (verbal) parasynthesis.

Concentrating now on parasynthetic adjectives in Spanish, the most exhaustive description of the phenomenon to date is still Serrano Dolader (1995: 155–184). We take his work as our starting point.

Serrano-Dolader (1995) considers parasynthetic in actuality three distinct situations, of which only the first satisfies a narrow definition of parasynthetic formation – the one we will adopt here: (i) cases where the word without the prefix or without the suffix is felt as ungrammatical by the speakers (as those in 73); (ii) cases where there is a bracketing paradox such as (74) and (iii) cases where the presence of a prefix allows what would otherwise be a noun to act as a modifier of other nouns (75).

- (74) a. sub-mar-ino  
under-sea-INO  
'submarine'
- b. endo-ven-oso  
inside-vein-OSO  
'that is administered inside the veins'
- (75) a. anti-guerrilla  
anti-guerrilla  
'that opposes guerrilla'
- b. multi-color  
many-colour  
'multicoloured'

For Serrano Dolader (1995) the reason to consider (74) as parasynthesis is that in them the prefix seems to operate semantically over the base noun – not the adjective which it formally combines with, given the ungrammaticality of *\*sub-mar* 'under-sea'. A submarine is an entity that can be under the sea, not something marine that is below, or that is below some standard of what counts as marine. For this author this is enough to show that – albeit at different components of grammar – both prefix and suffix must combine first with the base. However, the formations in (74) lack the main properties of parasynthesis, because the adjectives already exist without the prefix (*marino* 'marine', *venoso* 'venous'). Interesting as these cases are, treating them as parasynthesis blurs the distinction between this phenomenon and plain derivation.

In the case of (75), the main property that makes them parasynthetic for Serrano-Dolader (1995) is that only when combined with the prefix can these formations act as modifiers of nouns (76), which in some cases such as (76b) prompts an analysis where there is a zero suffix that adjectivalises the base noun, following a structure like (77) – while in (76a) one possibility is treating the formation as a syntactic construction where *anti-* is a prepositional head.

- (76) a. ataque \*(anti-)guerrilla  
 attack anti-guerrilla  
 ‘a paella with chorizo’  
 b. banderas \*(multi-)color  
 flags many-colour  
 ‘multicoloured flags’

- (77) [ multi [color]<sub>N</sub> ∅ ]<sub>A</sub>

However, the parasynthetic analysis is not granted even for a case like (76b), given the possibility – explored for instance by Gibert Sotelo (2017) in her discussion of the prefix *in-* – that the prefix is responsible for the category change.

We will then consider only the class in (73) as the one that contains derived adjectives that are parasynthetic in the proper sense. If we concentrate on this class, the first striking fact is that they all involve the same ending, *-ado*, which is surface identical to the participial form of a first conjugation verb like *cantar* ‘sing’ (*cant-a-do*). The first question is whether this ending should be the *-ado* that we have identified in our discussion of possessive and similitudinal adjectives in the previous chapter, or whether it should be considered a deverbal participial form (therefore, bimorphemic as in *-a-do*). Serrano Dolader (1995) already argues that the first option is the correct one at least for the purely adjectival uses; here we will provide three arguments that in all cases of real adjectival parasynthesis the adjectival suffix *-ado* is involved.

Our first argument is that speakers who use these adjectives do not always have the alleged corresponding verbs that they would come from if they were participial forms. There is some intra-speaker variation in this property, but I list in (78) a series of adjectives where the speakers consulted, and myself, feel that the alleged verb is impossible.

- (78) a-fortun-ado ‘A-luck-ADO, lucky’, a-diner-ado ‘A-money-ADO, rich’, a-chabol-ado ‘A-shack-ADO, similar to a shack’, a-mostach-ado ‘A-moustache-ADO, with a moustache’, a-pepin-ado ‘A-cucumber-ADO, like a cucumber’, a-nub-ado ‘A-cloud-ADO, cloudy’, des-vergonz-ado ‘DES-shame-ADO, shameless’, des-mesur-ado ‘DES-measure-ADO, disproportionate’, des-alm-ado ‘DES-sould-ADO, heartless’

A second argument is that, as we showed in Chapter 4, we expect adjectival participles to combine in Spanish with the copular *estar*, not *ser*. Plenty of these adjectives allow combination with *ser*, something unexpected if they were to be analysed as participles coming from verbs.

- (79) a. Juan es adinerado.  
Juan is rich  
b. Pedro es afortunado.  
Pedro is lucky  
c. Esta vivienda es            achabolada.  
this house is similar to a shack  
d. Luis es            aniñado.  
Luis is similar to a child  
e. Tu jersey es anaranjado.  
your sweater is orange-coloured  
f. Luis es despiadado.  
Luis is ruthless

The third argument is that all parasynthetic formations end in *-ado*, and none end in *-ido* (cf. *flor-ido* ‘flower-IDO, with flowers’), which would correspond to the participial form of second or third conjugation verbs. Serrano Dolader (1995: 162) mentions some cases in *-ido* – such as (80), but he immediately adds that he classifies them as parasynthetic just because they are the equivalent participial forms of verbs that he has classified – correctly – as parasynthetic.

- (80) a. em-bell-ec-i-do  
EN-pretty-EC-ThV-ed  
‘embellished’  
b. en-vil-ec-i-do  
EN-vile-EC-ThV-ed  
‘debased’  
c. en-call-ec-i-do  
EN-callus-EC-ThV-ed  
‘callous’

These formations clearly lack the properties of parasynthetic adjectives: there are verbal forms they derive from (*embellecer* ‘embellish’, *envilecer* ‘debase’, *encallecer* ‘make callous’) and, as expected from real participles, they reject combination with *ser* (\**es* {*embellecido* / *envilecido* / *encallecido*}).

With respect to the type of adjectives that they express, interestingly they only allow two classes – which not surprisingly correspond to the two classes that *-ado* formations can produce: similitive and possessive. There are no causative or dispositional denominal parasynthetic adjectives in Spanish.



With respect to the prefixes involved in the structure, only two are attested: *a-* with both similitudinal and possessive formations, and *des-* with possessive formations (remember that similitudinal adjectives reject negation).

The standing question is, of course, why these adjectives are parasynthetic and what the structure of parasyntesis is. We do not have a full analysis of parasyntesis that would allow extrapolation to the verbal cases, where it is most active, but we will make a few remarks before finishing.

An important fact in this respect is the observation that the combination of the prefix *a-* and the suffix *-ado* produces the same meaning as ‘stronger’ suffixes such as *-izo* or *-udo*. The original observation is due to Serrano Dolader (1995: 161–162):

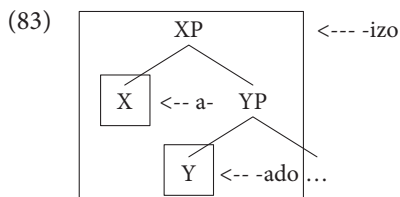
- (81) a. *a-bigot-ado* ~ *bigot-udo*  
 A-moustache-ADO moustache-UDO  
 ‘with a (big) moustache’
- b. *a-diamant-ado* ~ *diamant-ino*  
 A-diamond-ADO diamond-INO  
 ‘similar to a diamond’
- c. *a-cobr-ado* ~ *cobr-izo*  
 A-copper-ADO copper-IZO  
 ‘similar to copper’
- d. *a-hombr-ado* ~ *hombr-uno*  
 A-man-ADO man-UNO  
 ‘similar to a man’
- e. *a-millon-ado* ~ *millon-ario*  
 A-million-ADO milion-ARIO  
 ‘millionaire’
- f. *a-nub-ado* ~ *nub-oso*  
 A-cloud-ADO cloud-OSO  
 ‘cloudy’

A suggestive possibility that would follow from these pairs is that an equation such as (82) holds for the relation between the affixes in the parasynthetic adjective and the suffix in the words in the second column.

- (82)  $a- + -ado = -izo, -uno\dots$

There are two questions that need answering even if the intuition in (82) is essentially correct. The first problem is that (82) could be expressing a syntactic or a semantic relation. In the first case (82) would say that the structure that is spelled out as *-izo* involves two heads, one that is spelled out alone as *a-*, and another one that is spelled out as *-ado*, with *-izo* spelling out both by Phrasal Spell Out (83). In the second case, (82) reflects a semantic relation, such that the meaning contained

in *-izo* as one single head is also obtained by combining *a-* with *-ado*, with the possibility that in the three cases the affix spells out a single head. In either case, the second problem is to determine the status of the adjectives that only take *-ado*, and no prefix.



If the syntactic decomposition is on the right track, this would suggest that there is some level of further internal syntactic complexity in PP layers, and that under some circumstances still to be determined the X and Y heads lose their adjacency, and therefore have to be spelled out as distinct exponents. Further research is clearly needed to see if this line of research produces some results. Let us leave the discussion here, and move now to deverbal adjectives.



## Deverbal adjectives

### Pseudo-relational adjectives

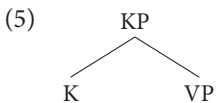
#### 1. Overview of the analysis of deverbal adjectives

This is the first of three chapters devoted to deverbal adjectives. (1)–(4) illustrates their main classes. Some of them force a passive interpretation of the verbal base – particularly, potential adjectives and some dispositional adjectives – while others are interpreted actively – specifically, habitual adjectives and some of the ones we will call ‘pseudo-relational’.

- (1) Pseudo-relational adjectives
  - a. circula-torio  
circulate-TORIO  
‘circulatory’
  - b. legisla-tivo  
legislate-TIVO  
‘legislative’
- (2) Qualifying modal adjectives
  - a. realiza-ble  
realise-BLE  
‘realisable’
  - b. admira-ble  
admire-BLE  
‘admirable’
- (3) Qualifying dispositional readings
  - a. quebra-dizo  
break-DIZO  
‘fragile’
  - b. resbala-dizo  
slide-DIZO  
‘slippery’
- (4) Qualifying habitual readings
  - a. olvida-dizo  
forget-DIZO  
‘forgetful’

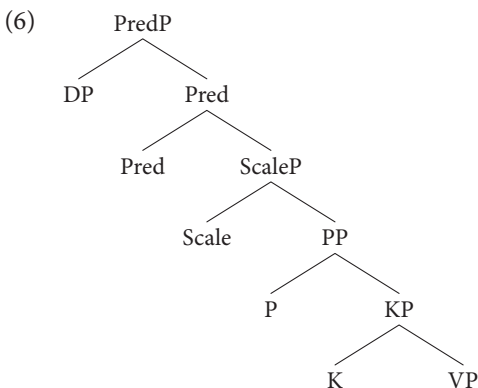
- b. mir-ón  
 watch-ÓN  
 ‘voyeur, that usually watches others’

The first class of adjectives is studied in this chapter. We will argue that relational adjectives do not come just from nominal bases, but also from verbal ones: their grammatical properties are identical in all grammatically relevant respects. We will propose the analysis in (5), which is identical to the one of a relational adjective with a nominal base, except for the categorial nature of the complement. In (5), VP stands for the verbal base, and as we will proceed



As in denominal relational adjectives, deverbal relational adjectives – from now on, pseudo-relational adjectives – are semantically underspecified, because they only contain KP, which denotes an underspecified semantic relation which defines a subkind of the head noun. Lacking PP, they also lack the possibility of being gradable, because of the impossibility of projecting ScaleP.

The classes in (2)–(4) are qualifying deverbal adjectives; modal adjectives are discussed in Chapter 7 and habitual and dispositional ones, in Chapter 8. As for the case of qualifying denominal adjectives, we propose that they project a full recycled prepositional structure above them.



The study of deverbal adjectives has received relatively greater attention than denominal ones (see Rainer 1999: 4599–4610; Martín García 2014: 21–34; RAE & ASALE 2009: Chapter 7), even though most of the literature has concentrated on two specific classes: modal adjectives, especially those with *-ble* (Abraham 1970; Aronoff 1976; Val Álvaro 1981; Williams 1981b; De Miguel 1986; Gràcia 1992;

Azkarate & Gràcia 1995; Hackl 1998; Roeper & van Hout 1999; Duo de Brottier 2000; Nevins 2002; Albresprit 2009; McGinnis 2010; Oltra-Massuet 2014) and participles (Wasow 1977; Anderson 1977; Dryer 1985; Jaeggli 1986; Levin & Rappaport 1986; Bennis & Wehrmann 1990; Bosque 1990; Anagnostopoulou 2003; Embick 2004; Alexiadou & Anagnostopoulou 2008; McIntyre 2013; Bruening 2014; Gehrke 2015, among many others).

Research has concentrated on several properties of adjectives which we will also take into account in our analysis:

- a. What determines whether the base receives a passive or an active interpretation? Why are modal adjectives almost always interpreted as passive, for instance, while habitual adjectives are active?
- b. To what extent are the properties of the base verb present in the deverbal adjectivalisation? One main area of research here has tested whether the argument structure of the verb is still present inside the adjectivalisation. For instance, Oltra-Massuet (2014) shows that in some formations with *-ble* there is syntactic evidence that a syntactic agent is projected (7). She takes this as evidence that the productive use of *-ble* derives the adjective from a verbal structure that projects at least up to the head that introduces agents.

- (7) una novela adapta-ble al cine por un buen guionista  
 a novel adapt-BLE to.the movies by a good scriptwriter  
 ‘a novel adaptable to the screen by a good scriptwriter’

Interesting as these problems are, the second issue that this chapter discusses is a puzzle that to the best of our knowledge has not been addressed at length before. Deverbal adjectives, both relational and qualifying, systematically produce non-episodic readings of the embedded eventuality: they lack the ability to refer to specific instantiations of the eventuality named by the base. As we will also propose in this chapter, this lack of episodicity follows from the absence of an aspectual head AspP in the material that the adjectival structure selects. We will argue that the lack of episodicity is not obtained through a modal head – not even in modal adjectives – that cancels the episodicity of the verb, but is obtained because the verbal base selected by the adjectivaliser was never episodic. In fact, the existence of deverbal relational adjectives is also relevant for this puzzle, because they are also non episodic and still lack in their meaning any plausible modal component.

The only class of deverbal adjectival forms that can be episodic is participles, at least those that have been considered ‘adjectives’ according to Wasow’s (1977) classic division. In (8), it is entailed that an event of frying or an event of getting tired have actually happened. For these forms, we will argue in Chapter 9 that they do contain AspP within the verbal structure.

- (8) a. fri-to  
 fry-TO  
 'fried'  
 b. cansa-do  
 tire-DO  
 'tired'

This chapter is structured as follows. In §2, we will discuss the problem of non-episodicity and develop the analysis that has just been advanced. §3, §4 and §5 will discuss pseudo-relational adjectives, first showing that they exist, then describing their properties and then arguing for an analysis where they are the deverbal parallels of denominal relational adjectives.

## 2. The problem of non-episodicity

Before we motivate the existence of deverbal relational adjectives, let us talk about the relation between non-episodicity and deverbal adjectives, because it affects both relational and qualifying deverbal adjectives.

### 2.1 Deverbal adjectives are (mostly) non-episodic

Consider the truth conditions of a modal adjective (9; cf. Hacquard 2006 for an analysis of mood).

- (9) a. joven casa-dera  
 youngster marry-DERO  
 'youngster that can be married'  
 b. actitud condena-ble  
 attitude condemn-BLE  
 'attitude that must be condemned'

It is clear that in (9a) it is not necessary that the youngster is married or has ever been married; the adjective *casadero* 'marriageable' simply states that someone is, due to his or her internal properties (relevantly, age), in a situation where it can participate in an event of marrying. (9b) states that some entity, given its internal properties, deserves to be condemned, but this does not entail that anyone ever condemns it. Consider now dispositional interpretations of adjectives (10).

- (10) arena move-diza  
 sand move-DIZO  
 'quicksand, sand that has a tendency to move'

Again, the intuition is that the sand does not need to have ever moved for someone to describe it as *movediza*. In other words: no actual participation in a specific event of moving is necessary to use this adjective; it is enough if we diagnose – perhaps through an analysis of the area where the patch of sand is located – that the sand has internal properties that characterise it with a tendency to move when pressure is applied to it. Consider finally the habitual interpretation of deverbal adjectives.

- (11) abus-ón  
 abuse-ÓN  
 ‘bully, that habitually abuses others’

Here the judgement is subtler, because habituality implies participating in the event that the base verb describes. However, habituality does not state actual participation in a specific event – that is, an event that is instantiated in a specific time and world, but is a form of gnomic imperfectivity (Bertinetto & Lenci 2010) which incorporates an iterative component that requires the regular occurrence of the event. Gnomic imperfectivity is a modalised notion that defines an event as generic independently of any specific time period. The genericity that is involved in gnomic imperfectivity includes ideals, customs, tendencies and universal laws, as well as habits. Some languages use the same markers for habitual and generic non-habitual statements, such as Swahili (Welmers 1973), which conveys these meanings by attaching both the prefix *hu-* and the suffix *-a* to the verb. While not every author agrees that habituality should be conceived of as gnomic imperfectivity with an iterative component (see in particular Carlson 2011: 843–848), the general intuition is that habitual statements involve a more abstract notion of the event. The event is presented with independence of a specific time and world. Bittner (2008) has proposed that a habitual event stands to an episodic event – that is, an event actualised in a specific time period and a specific world – in a kind-token relation, just like the kind interpretation of the noun *cow* in *Cows will be extinct in 30 years* relates to the token interpretation in *These cows are hungry* (see also Gehrke & McNally 2011, 2015 and Grimm & McNally 2015 for the difference between event kinds and event tokens).

In this sense, imagine we want to say that Enrique fought with his sister yesterday evening, because he is a person who habitually fights with others. Clearly (12) would not be the right choice for this scenario, because the adjective only covers the habitual meaning that describes Enrique as someone who typically fights with others. The adjective does not allow the selection of one specific occurrence of the fighting event from the series that defines the habit.

- (12) Enrique es pele-ón.  
 Enrique is fight-ÓN  
 ‘Enrique habitually fights’



Habitual adjectives, then, are used to describe entities through the types of events in which they typically participate, but do not denote participation in any specific instantiation of those events.

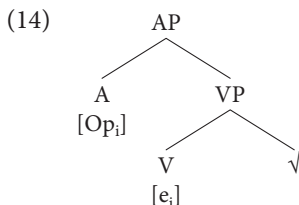
Compare this to participial forms used as adjectives (13), for the time being focusing just on *-do* ‘-ed’ participles. It is clear that in (13a) the potatoes must have participated in an instantiated, episodic, specific event of frying; unless the potatoes have been fried, we cannot use this adjective: it is not enough that they can be fried, have a tendency to be fried or can be described as habitually participating in frying events. Similarly (13b) requires the collection to be classified in the actual world.

- (13) a. patatas fri-tas  
 potatoes fri-TO  
 ‘fried potatoes’  
 b. una colección clasifica-da  
 a collection classify-DO  
 ‘a classified collection’

Participles – we will also see in Chapter 9 some forms coming from old present participles – can denote actual participation in a specific event, and are not restricted to expressing potentiality, obligation, dispositionality or habituality.

Why would this be so? There are two general ways to go about explaining this property: the first one implies that the adjective layer adds something that forces non-episodicity, and the second one proposes that creating an adjective from a verb removes from the verb whatever defines an episodic event.

The first account – where the adjective adds something that cancels the verbal episodicity – could go along the following lines. The set of deverbal adjectivalisers in Spanish systematically contains modal operators, and these operators cancel the episodicity that the verb can be associated to by treating the event argument as a bound variable. (14) represents this proposal schematically, using for the sake of clarity the label A.



It would be easy to substantiate this claim for modal adjectives, as their meaning is generally paraphrased by a modal verb (*poder* ‘can’, *tener que* ‘must’). Dispositionality has also been argued to contain a modal operator (Krifka et al.

1995: 50), and habituality has received this type of analysis in for instance Krifka (1988), Chierchia (1995) and Carlson (1995).

Would this be enough? From one perspective, it is. However, the account raises other types of questions, as it treats the non-episodicity of deverbal adjectivalisers as a lexical accident – it reduces to a basic lexical fact, that the relevant morphemes happen to be lexically endowed with a modal operator. Things could have been different, then. Why don't we find deverbal adjectivalisers that allow the episodic reading, either because they lack a modal operator or because they contain just an iterative operator implying actual participation in the event? A conceivable situation would be that we had adjectivalisers that incorporate an iterative quantifier over instantiations of the event, for instance something meaning 'twice'. Spanish can express this meaning with an adverbial modifier (15).

- (15) el dos veces ganador  
the two times winner  
'the person that won twice'

Interestingly, to the best of our knowledge, such meanings are never expressed by a deverbal adjectivaliser in Spanish. That meaning is expressed by a prefix *bi-* 'bi-' (16). This lexical account that treats non-episodicity as a lexical accident would predict that Spanish could have had an affix (call it *-cle*) that conveys specifically cardinal quantification over episodes, as in (17); this is not the case, and as far as we know in the history of Spanish there has never been such an adjectivalising suffix.

- (16) bi-campeón  
bi-champion  
'twice champion'

- (17) \*gana-cle  
win-'twice'  
Intended: 'that has won twice'

Similarly, this approach has to treat the fact that participial formations can be episodic as a lexical accident: the suffix *-do* (and allomorphs) just happens to lack this meaning.<sup>1</sup>

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1. Additionally, the claim that deverbal adjectivalisers contain modal operators risks making the wrong predictions regarding affix combinations. When the modal operators manifest as modal auxiliaries, Spanish – like English – can establish chains of modal auxiliaries, for instance in *Puedes tener que poder leer en chino* 'You might have to be able to read Chinese'. Systematically, the deverbal adjectivalisers cannot establish chains: *-ble* never follows or precedes *-dizo* or *-dero*. The absence of chains suggests that these objects have a very different nature from modal operators.

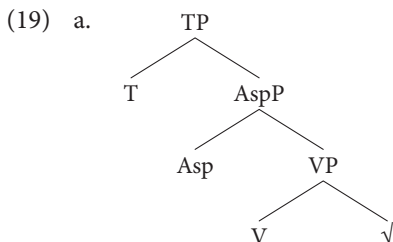
There is, moreover, an empirical argument against treating non-episodicity plainly as the effect of carrying a modal head that cancels the event implications: relational adjectives coming from verbs are also non-episodic, and in them there is no semantic trace of any modal meaning. Consider the following examples.

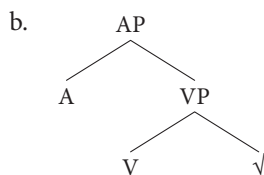
- (18) el personal administrativo de esta universidad  
 the staff administrative of this university  
 ‘the administrative staff of this university’

Let us imagine a situation where we have just established a new university and hired a number of people as part of the administrative staff. We can use (18) to refer to this set of people as soon as they are hired, without any entailment that they have actually participated in any specific episode of administrating that university. It is enough that they are the staff that are related to administrating the university. Thus, the event is not instantiated, and therefore the event is interpreted as non-episodic.

It is very difficult to see in what sense the weak semantics of pseudo-relational adjectives is compatible with the proposal that their suffixes carry with them a modal operator. There are no entailments about the staff being able to administrate, being forced to do so, having a tendency towards it, or having done so habitually at any point.

We have, then, to look at a second approach where episodicity is not cancelled. This second alternative approaches the problem differently, and will be the one that we will adopt here in §2.2. The core idea is that for an event to be episodic, some functional structure has to be built above it – plausibly, as Roeper & van Hout (1998) argued, functional structure related to tense and aspect – (19a). The non-episodicity of deverbal adjectives is obtained by the absence of this structure (19b), simply because the presence of the adjectivaliser blocks projection of the higher functional layers. Participial forms, in contrast, are built from verbal bases that already project grammatical aspect (AspP). AspP makes the event episodic, so when it is absent there are no episodicity entailments.





## 2.2 Getting non-episodicity for free

How is non-episodicity in deverbal adjectives to be understood, then? In a Neo-Davidsonian approach to verb semantics (cf. Davidson 1967; Dowty 1979; Parsons 1990, among many others), the verb is a predicate of events. An event is a sortal type of participant that – crucially – comes endowed with time and world parameters. For instance, a verbal predicate like *canta*- ‘sing’ would roughly correspond to (20), where in order to make clear that the event contains parameters for time and world we use superindexes ‘t’ and ‘w’.

(20)  $\text{canta}'(e^{t,w})$

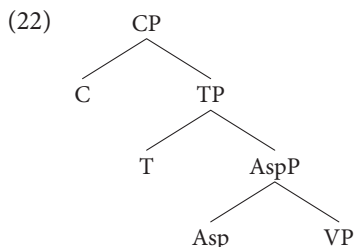
From this perspective, events will trigger episodic readings as soon as they are existentially bound. Traditionally, the existential closure of the event argument happens as soon as Tense is projected, resulting in an episodic reading where it is claimed that there exists a specific time and world where the event is instantiated – unless there are intermediate operators that treat the event argument as a variable, or cancel the episodicity through other means.

(21)  $\exists e[\text{canta}'(e^{t,w})]$

The reason that existential closure is directly associated to episodicity is of course that in the Neo-Davidsonian approach the parameters for time and world are contained within the event argument; any existential quantification over  $e$  is therefore existential quantification over time and world.

If this approach is adopted, then it becomes clear that the way to explain the non-episodicity of deverbal adjectives is to propose that some operator quantifies over the event argument before existential closure can be applied to it; this is for instance the spirit of Oltra-Massuet (2014), one of whose concerns in discussing deverbal formations is to guarantee that there is no entailment that the event was instantiated in a specific world and time. We have already seen that, convincing as this might be for individual cases, the approach is forced to treat some facts that seem to form a pattern as a mere lexical accident.

There are alternatives to the Neo-Davidsonian view of events, however. Specifically, Ramchand and Svenonius (2014) and Ramchand (2018) have noted that the Neo-Davidsonian view is unable to explain a syntactic and morphological fact of natural languages, specifically that in language after language evidence is found that the main clausal spine is ordered as in (22).



Languages can vary with respect to how many syntactic heads they license in the CP, TP, AspP or VP area, or about the conceptual dimension used to define the notions associated to each one of these areas (see also Wiltschko 2014), but when these areas are present the general organisation of the clause always presents this ordering: VP is the area where an eventuality is defined, with Aktionsart and argument structure. AspP is the area which adopts a perspective on that eventuality; TP anchors the eventuality, and CP links it to external structure (another clause, the discourse, etc.).

Ramchand (2018: 4–6) notes that this fact cannot be derived in a Neo-Davidsonian view of events. She considers several arguments, but given that our monograph is about morphology we will concentrate in particular on the ordering between verbal affixes expressing tense and verbal affixes expressing argument structure or Aktionsart. In language after language, we find that tense morphemes are external to morphemes related to argument structure, something that has received different explanations (morphological, as in Scalise 1983, or semantic, as in Bybee 1985). Consider (23), for Spanish: (23a) is grammatical, (23b) is radically ungrammatical.

- (23) a. clas-ific-a-ba  
 class-ify-ThV-past  
 'I/he/she classified'
- b. \*clas-a-ba-ific(a)  
 class-ThV-past-ify

The Neo-Davidsonian approach fails to derive this fact because, quite simply, both tense and argument-modifying morphemes are treated as modifiers of the event argument. Given that they are modifiers of the same object, they could in principle attach to the verb in any order. (24) adapts Ramchand's (2018) own derivation of the ungrammatical morpheme ordering in (23).

- (24) a.  $[[VP]] = \lambda e[P(e)]$   
 b.  $[[Past]] = \lambda e [\tau(e) <_t \text{'now'}]$ , where 'τ' is the temporal trace of the event  $e$   
 c.  $[[Cause]] = \lambda x \lambda e [Causer(e)=x]$

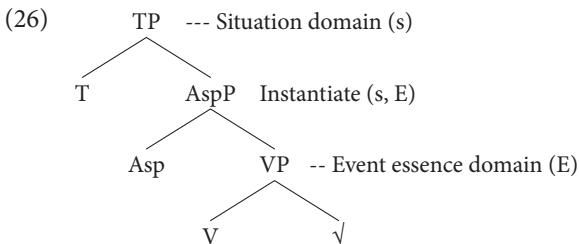
Because the event contains time and world indexes, tense morphemes are predicates of the event argument. Nothing prevents – from a semantic perspective – the tense morphemes combining first with the VP, and then the causative morpheme – also a predicate of the event – being added. This would give the ordering in (23b), which we want to avoid given the facts of human language. The Neo-Davidsonian approach, then, would have to impose that ordering extrinsically, without deriving it from any general principle.

What Ramchand & Svenonius (2014) and Ramchand (2018) propose is that the event argument should be completely divorced from the time and world indexes. The main idea in Ramchand & Svenonius (2014) is a modification of Barwise's (1981) notion of 'situation' (see also Barwise & Perry 1983; Kamp & Reyle 1993; Zucchi 1993; Cooper 1997; Ginzburg 2005, among many others). Situations are semantic objects that carry time and world parameters and that instantiate events in specific times and worlds. Events should be considered event essences (represented as  $E$ ), objects that lack any annotation for time or world. Event essences define an eventuality, with its Aktionsart and its argument structure, while situations instantiate the eventuality in specific times and specific worlds.

Event essences are defined in the verbal domain (VP above). In contrast, the TP domain deals with situations. Situations are related to events through an instantiation relation (25).

- (25)  $\text{Instantiate}(s^{t,w}, E)$

The instantiation relation is performed by AspP, in Ramchand & Svenonius (2014); in this sense, AspP is a syntactic head that languages use to move from a domain that defines predicates but lacks time and world to another domain that transforms those event essences into occurrences of the predicates in specific situations. The two domains are ordered as represented in (26).



The ordering between the domains – specifically, that the situation domain is above the event domain – has a cognitive explanation (Ramchand & Svenonius 2014): the human mind conceives of situations as containing events, not the opposite. Given this cognitive ordering between domains, the facts in (23) follow naturally. A causative morpheme modifies the argument structure of an Event essence, but a tense morpheme cannot modify the Event essence because it does not find in E any time index. The tense morpheme must be a predicate of situations, which have time and world. Given that situations are syntactically higher than events, it follows that tense morphemes must be external to argument-related morphemes.

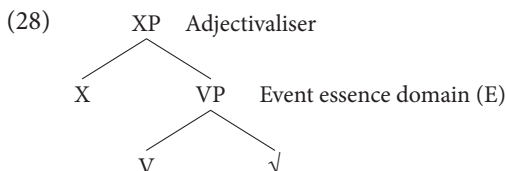
Ramchand (2018) treats verbs as partial descriptions of events, deprived of time and world indexes. In Ramchand (2018), these indexes are provided by a head called EventP, which mediates between the verbal domain and the functional clause structure, but here we will follow Ramchand & Svenonius (2014) in the proposal that these indexes are provided by grammatical Aspect, which instantiates the event description in specific times and worlds.

The denotation of the verbal predicate that we assume is presented as in (27a); (27b) shows the result once Aspect has been added to the verbal structure, turning the Event essence into a situation through an Instantiate relation.

- (27) a.  $[[VP]] = \lambda f \exists E [P(E)]$   
 b.  $[[AspP]] = \lambda f \exists s [\exists E [P(E)] \wedge \text{INSTANTIATE}(s^{t,w}, E) \wedge f(s^{t,w})]$

What is crucial in (33) is that existential quantification over E does not trigger an episodic reading, because E lacks time and world. The episodic reading where the event is instantiated in a specific time period is associated to the existential quantification over the situation, and therefore it is only obtained once AspP is introduced in the structure.

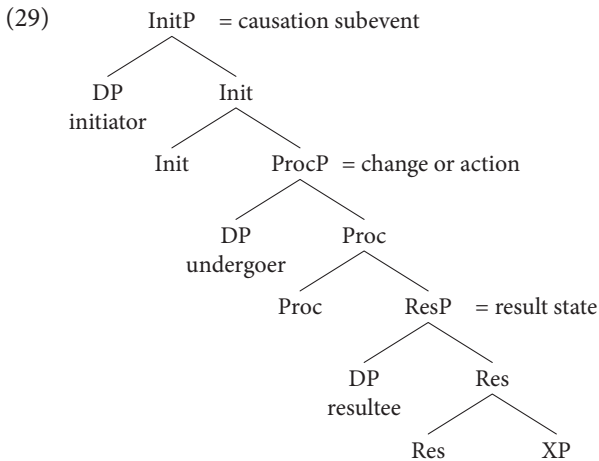
This means that any verbal predicate that is not headed by AspP will inherently be non-episodic. This is the simpler theory that we were looking for, where there is no need to propose that the adjectivalisers happen to carry with them modal operators and just by lexical accident they never come without them, or for that matter with quantifiers that give the cardinality of the occurrences of the event. Within this domain approach, the expectation is that any structure that selects VP without AspP will contain an Event essence with a non-episodic interpretation.



VP stands in (34) for a region and is itself decomposable. We will assume that it is decomposed into a series of heads that are predicates of an Event essence E. Given that we are assuming Ramchand's view of events versus situations, we will assume Ramchand (2008) for the decomposition of the verbal domain. Ramchand (2008: 39–42) proposes that the syntax of the event domain involves three functional projections:

- a. InitiationP, which specifies the causation subevent
- b. ProcessP, which introduces the change or process
- c. ResultP, which codifies the result state of the event.

Depending on the entailments associated to each verb in terms of Aktionsart and argument structure, the three projections or only some of them will be involved in the structure. If all three projections are present, they are ordered as follows:



As can be seen in (29), the specifier of each projection is occupied by a particular event participant. The initiator of the event is placed in the specifier of the causative projection, that is, the InitP. The entity undergoing the change or process denoted by the event is placed in the projection that specifies the change or process, ProcP. The entity that holds the result state occupies the specifier of ResP. The syntactic structure in (29) is associated to a combinatorial semantics: the causative subevent leads to the process-denoting subevent and the process-denoting subevent leads to the result-state subevent (Ramchand 2008: 42–45), assuming event identification (36; cf. Ramchand 2008: 43 after Kratzer 1996, adapted to the notation with event properties).

$$(30) \quad E = E_1 \rightarrow (E_2 \rightarrow E_3) : [\text{initiate-P}(E_1) \ \& \ \text{process-P}(E_2) \ \& \ \text{result-P}(E_3)]$$



We do not follow Ramchand (2008) in one respect: Ramchand conceives of these three projections as the decomposition of the V head that defines lexical verbs. However, the morphology of Spanish provides independent evidence that an object can project as a verb without introducing lexical aspect or arguments. This implies that a lexical verb head V must be added to the structure. In essence, this V head is the verbaliser that turns a base of any category, or a root, into a verb. We assume, following Oltra-Massuet (1999) and Fábregas (2017b), that this head is responsible in Romance languages for the presence of the theme vowel that appears in verbal stems, in such a way that the presence of a theme vowel marking a conjugation class in a stem signals the presence of verbal structure, at a minimum VP.

- (31) a. limpi-o  
 clean-M  
 'clean (A)'  
 b. limpi-a  
 clean-ThV  
 'clean (V)'

Consider (32). The verbal stem *corta* 'cut' should be segmented into two parts: a root *cort-* and a theme vowel *-a-* that defines the stem as belonging to the first conjugation. We know this because the same root, when used as a noun, lacks *-a-* and takes a noun marker *-e* (32a). However, the theme vowel is present also in the noun *cort-a-dura* 'cut', which denotes either the result of cutting or a slice of something produced after cutting. This noun rejects arguments (32b) and aspectual modifiers (32c), but morphologically it is clear that the suffix *-dura* selects verbs with theme vowels as its base.

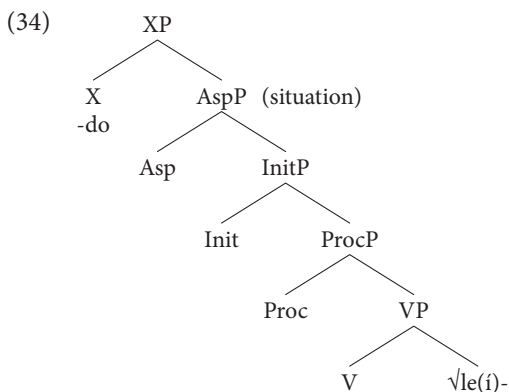
- (32) a. cort-e  
 cut-NM  
 'cut'  
 b. Tengo una cortadura (\*por parte de Juan) en la cara.  
 have.1SG a cut by PART of Juan on the face  
 Intended: 'I have a cut made by Juan on the face'  
 c. una cortadura {\*en un momento / \*durante una semana}  
 a cut in one moment / for one week  
 Intended: 'a cut made in one moment' or 'a cut that lasts one week'

The existence of nominalisations deprived of argument structure and lexical aspect which can, however, be diagnosed as formed over lexical verbs containing theme vowels (and sometimes verbalisers like *-ify*; cf. *clas-ific-a-ción* 'class-ify-ThV-ation', which can act as a non-eventive noun) provides evidence that the lexical verb has to be structurally defined independently of the heads that provide it with

arguments and aspect. We will, thus, assume a syntactic hierarchy like the one in (33). Nominalisations such as (32b) contain VP but lack the other projections.

(33) [InitP [ProcP [ResP [VP [ $\sqrt{\text{V}}$ ]]]]]

What about participles? In short, and we will discuss this further in Chapter 9, what makes participles special with respect to other deverbal adjectives is that the participial morpheme can embed grammatical or external Aspect. Therefore, the structure of participles is the one presented in (34) – illustrated for the regular participle of the Event essence named by *leer* ‘read’, not taking its possible arguments into account.



The participle contains AspP, and then the operation that instantiates the Event essence in a situation is activated. Time and world parameters are present, and they trigger the episodic interpretation that a verbal structure without Asp lacks.

There is a related alternative proposal, namely the distinction between event kinds and event tokens that has been argued for in Carlson (2003), Gehrke & McNally (2011, 2015), Gehrke (2015) or Grimm & McNally (2015). The idea is that event kinds are ‘abstract’ prototypical representations of eventualities, which can be instantiated as tokens provided functional verbal structure is introduced above them. Event kinds are, then, also non-episodic in the relevant sense adopted here, and tend to give habitual interpretations. We could have adopted this proposal here without our account becoming substantially different from what will be seen in the next chapters, but we have chosen to adopt the view based on domains because it connects the semantics with the syntax in a more explicit way. Given that the general spirit of this monograph is to provide a Neo-constructionist analysis of adjectivalisations, the view based on syntactic domains allows us to be more explicit about the relations between bases and adjectivalisers in all the cases.

In short, our explanation of why adjectivalisation of verbs involves non-episodicity is that most adjectivalisers – with the sole exception of participles – attach

directly onto a structure that lacks AspP. As the base denotes an Event essence lacking time and world, any interpretation where a specific instantiation of the event is expressed is excluded.

Let us now leave this general view and concentrate on the first class of deverbal adjectives that we will analyse, pseudo-relational adjectives.

### 3. There are deverbal relational adjectives

Now that we have made explicit how we treat non-episodicity in deverbal adjectives, let us focus on one of the subclasses. Even though the grammatical tradition restricts relational adjectives to adjectives coming from nominal bases, in this section we will show that there is a class of deverbal adjectives which behaves like relational adjectives in all grammatically relevant respects. Consider the adjective *respira-torio* ‘breathe-TORIO, respiratory’ in (35).

- (35) el sistema respira-torio  
 the system breathe-TORIO  
 ‘the respiratory system’

Let us start from the meaning of the adjective and the meaning relation to the head noun. Like relational adjectives (Chapter 2), the adjective defines a subkind of the head noun, in this case a particular type of system. This subkind is defined by its relation to an event kind – again, not the episodic occurrence of an event, such as that the system must have participated in a specific breathing event, ‘breathing’. All it takes for a system to be *respiratorio* is that it relates somehow to breathing events.

Just as in the case of relational adjectives derived from nouns, there is some flexibility in the type of relation that is used to define the subkind. We will see in §4.1 that some types of relation are favoured – such as ‘being able to produce’ and ‘being an instrument for’ – but they are by no means the only ones. Consider *administra-tivo* ‘administrate-TIVO, administrative’ in (36).

- (36) a. una decisión administrativa  
 a decision administrative  
 ‘an administrative decision’  
 b. un texto administrativo  
 a text administrative  
 ‘an administrative text’  
 c. la plantilla administrativa  
 the staff administrative  
 ‘the administrative staff’

- d. una reforma administrativa  
 a reform administrative  
 ‘an administrative reform’

In (36a), the interpretation is that the event of administrating something is the matter of the decision, but administrating can also be what causes the decision; in (36b), administrating is either the matter discussed in the text or what identifies the type of language used there; in (36c) administrating is what the staff does, as agents; in (36d), administrating is what is affected by the reform, as a patient of the change. Unsurprisingly, most relations are the familiar ones defined as theta-roles by the base verbs (*cause of, agent of, instrument to, patient of...*), but more general relations are also allowed.

The syntactic properties of this subtype of deverbal adjectives are also similar to the ones exhibited by denominal relational adjectives. First of all, their position must be postnominal, and immediately adjacent to the head noun.

- (37) a. una crema depilatoria barata  
 a cream depilate-TORIO cheap  
 ‘a cheap hair-removing cream’  
 b. \*una crema barata depilatoria  
 a cream cheap hair-removing  
 c. \*una depilatoria crema barata  
 a hair-removing cream cheap

Second, they reject degree modification.

- (38) una prueba (\*muy) elimina-toria  
 a test very eliminate-TORIO  
 Intended: ‘a test that is used to eliminate a lot of candidates’

Third, they also allow – like denominal relational adjectives – the construction in which two of them are coordinated in singular to modify a single plural head noun, receiving a distributive interpretation.

- (39) a. los sistemas circula-torio y respira-torio  
 the systems circulate-TORIO and breathe-TORIO  
 ‘the circulatory system and the respiratory system’  
 b. los poderes ejecut-ivo y legisla-tivo  
 the powers execute-TIVO and legislate-TIVO  
 ‘the executive power and the legislative power’

In fact, it is possible to coordinate one denominal relational adjective with one of these deverbal adjectives, both in singular, to modify a single noun in plural. (40) is a relevant case.

- (40) los usos copula-tivo y auxili-ar del verbo *ser*  
 the uses copulate-TIVO and help-AR of the verb *ser*  
 'the copulative use and the auxiliary use of the verb *ser*'

With respect to their morphological properties, which we will revise in greater detail in §4.1., what is relevant for us at this point is that some of the affixes used for these formations can also produce qualifying adjective readings, while others are restricted to the type of formations whose behaviour is like denominal relational adjectives. The suffix *-(t)ivo* is a good example of the first class; (41) presents two examples where the adjective is qualifying. In contrast, as we will argue below, the suffix *-torio* is an example of an affix that never produces deverbal qualifying adjectives.

- (41) a. crea-tivo  
 create-TIVO  
 'creative'  
 b. llama-tivo  
 appeal-TIVO  
 'appealing'

The only grammatical differences with denominal relational adjectives are those that follow from the basic property that these adjectives are formed from verbs. For this reason, it is not possible to subordinate one of these deverbal adjectives to another one: remember from Chapter 3, §5.2 that in order for one relational adjective to subordinate to another, as in *latinista vulgar* 'related to Vulgar Latin', the base of the second adjective must be a noun. Only then can the structure iterate. This is impossible in the case of deverbal adjectives simply because there is no nominal structure in their internal composition. Therefore, even if we can think of a decision that relates to the event of administrating what has to do with legislating, (42) is ungrammatical.

- (42) \*una decisión [administrativa [legislativa]]  
 a decision administrative legislative  
 Intended: 'a decision related to administrating what has to do with legislating'

All these reasons allow us to define this class of deverbal adjectives as relational from a semantic, syntactic and morphological point of view. However, terminologically we would like to stay with linguistic tradition in restricting the term 'relational adjective' to those whose base is nominal, and for this reason we will refer to these adjectives as pseudo-relational adjectives.

These adjectives present an interesting puzzle for deverbal adjectives: how do they come to exist? The reader, probably, has already anticipated our answer. They exist because the adjectival suffixes are prepositional structures. If prepositional structures express relations between entities, the existence of adjectives derived

from verbs predicts that pseudo-relational adjectives should exist. In the case of relational adjectives, they define subkinds of the head noun through their relation with a nominal kind; in the case of pseudo-relational adjectives, an event subkind is defined through the relation with another verbal kind.

#### 4. Deverbal relational adjectives: Description

To the best of our knowledge, pseudo-relational adjectives have not been described as a specific class in the existing literature. Rainer (1999: 4601–4605) mentions a class of deverbal adjectives that have a ‘pure verbal reading’, and which includes some of the adjectives that we have identified as pseudo-relational, but it seems to us that he intends that label to mean simply ‘adjectives without modal, dispositional or habitual interpretations.’<sup>2</sup> RAE & ASALE (2009: §7.8a–c) acknowledge that some deverbal adjectives behave as relational adjectives, but they do not review their properties in the same detail as denominal relational adjectives. This section will provide a detailed overview of their properties.

##### 4.1 Affixes, preferred readings and the availability of qualifying versions

Pseudo-relational adjectives are mainly formed by two suffixes: *-(t)orio* and *-(t)ivo* (see §4.3 for whether *-dor* and *-nte* should also be considered in this group or not). However, these two suffixes are quite different once their properties are seen in more detail.

The suffix *-orio*, almost always used as the allomorph *-torio* within deverbal formations, produces a considerable number of pseudo-relational adjectives.

- (43) *abroga-torio* ‘abrogate-TORIO, abrogatory’, *absolu-torio* ‘acquit-TORIO, related to acquitting’, *aclara-torio* ‘clarify-TORIO, explanatory’, *acusa-torio* ‘accuse ORIO, accusatory’, *adivina-torio* ‘predict-TORIO, related to predicting’, *admoni-torio* ‘admonish-TORIO, admonishing’, *alega-torio* ‘allege-TORIO, pleading’, *ama-torio* ‘love-TORIO, related to loving’, *articula-torio* ‘articulate-TORIO, articulatory’, *certifica-torio* ‘certify-TORIO, certifying’,

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2. Martín García (2014: 34) briefly mentions *-torio* relational adjectives, but does not treat them as deverbal, claiming that they have nominal bases. Her claim is based on the nominal paraphrasis she proposes (*circula-torio* ‘circulate-TORIO, circulatory’ is for her ‘related to circulation’). The paraphrasis could have also been stated with a non-finite form of the verb (*relacionado con circular / related to circulating*), so the choice of a deverbal nominalisation is arbitrary and cannot be taken as a test. The morphological surface structure shows that the base is verbal, and an account where the base is a nominalisation would force the analysis to posit unwarranted massive haplogy of affixes like *-ción* or *-miento*.



Notice that the only cases of qualifying adjectives associated with this suffix are related to bases that are not verbal – either the verbal base is missing or the shape adopted corresponds to a noun, but there is always the impression that the interpretation of the adjective relates closer to a nominalisation; in such cases, typically *-orio* (not *-torio*) is used, and some of the forms might not be subject to segmentation (cf. *irrisorio*, *ilusorio*, and *contradictorio*, which would come from roots directly, unless one assumes massive haplology of *-(c)ión*).

- (46) *contradic-torio* ‘contradictory’ (cf. *contradicción* ‘contradiction’), *ilus-orio* ‘illusory’ (cf. *ilusión* ‘illusion’), *satisfac-torio* ‘satisfactory’ (cf. *satisfacción* ‘satisfaction’), *irris-orio* ‘derisory’ (cf. *irrisión* ‘ridicule’), *merit-orio* ‘deserving’ (cf. *mérito* ‘merit’)

Compare this with the formations that come from *-(t)ivo*. The list of (47) presents several pseudo-relational adjectives built with it.

- (47) *abdica-tivo* ‘abdicate-TIVO, abdicative’, *abort-ivo* ‘abort-TIVO, abortive’, *acredita-tivo* ‘accredit-TIVO, accreditative’, *administra-tivo* ‘administrate-TIVO, administrative’, *admira-tivo* ‘admire-TIVO, admiring’, *adopt-ivo* ‘adopt-TIVO, adoptive’, *ama-tivo* ‘love-TIVO’, *amplia-tivo* ‘extend-TIVO’, *apela-tivo* ‘appeal-TIVO’, *aproxima-tivo* ‘bring.closer-TIVO’, *bonifica-tivo* ‘discount-TIVO’, *califica-tivo* ‘describe-TIVO’, *causa-tivo* ‘cause-TIVO’, *cicatriz-tivo* ‘scar-TIVO’, *compara-tivo* ‘compare-TIVO’, *confirma-tivo* ‘confirm-TIVO’, *congela-tivo* ‘freeze-TIVO’, *conmemora-tivo* ‘commemorate-TIVO’, *conmuta-tivo* ‘commute-TIVO’, *connota-tivo* ‘suggest-TIVO’, *continua-tivo* ‘continue-TIVO’, *contribu-tivo* ‘contribute-TIVO’, *copula-tivo* ‘copulate-TIVO’, *coordina-tivo* ‘coordinate-TIVO’, *declara-tivo* ‘declare-TIVO’, *deduc-tivo* ‘deduce-TIVO’, *degenera-tivo* ‘degenerate-TIVO’, *denota-tivo* ‘denote-TIVO’, *distribu-tivo* ‘distribute-TIVO’, *espesa-tivo* ‘thicken-TIVO’, *excita-tivo* ‘excite-TIVO’, *exclama-tivo* ‘exclaim-TIVO’, *explica-tivo* ‘explain-TIVO’, *fecunda-tivo* ‘fertilize-TIVO’, *gusta-tivo* ‘taste-TIVO’, *incita-tivo* ‘incite-TIVO’, *legisla-tivo* ‘legislate-TIVO’, *manifesta-tivo* ‘demonstrate-TIVO’, *multiplica-tivo* ‘multiply-TIVO’, *narra-tivo* ‘narrate-TIVO’

However, *-(t)ivo* does produce qualifying adjectives from verbal bases.

- (48) *ahorra-tivo* ‘save-TIVO, thrifty’, *argumenta-tivo* ‘argue-TIVO, argumentative’, *atraca-tivo* ‘attract-TIVO, attractive’, *coopera-tivo* ‘cooperate-TIVO, cooperative’, *crea-tivo* ‘create-TIVO, creative’, *decora-tivo* ‘decorate-TIVO, decorative’, *destruc-tivo* ‘destroy-TIVO, destructive’, *intui-tivo* ‘sense-TIVO, intuitive’, *llama-tivo* ‘appeal-TIVO, appealing’, *nega-tivo* ‘deny-TIVO, negative’, *nutri-tivo* ‘nourish-TIVO, nutritive’



These adjectives allow degree modification (49a) or the prenominal position (49b–d):

- (49) a. una persona muy ahorrativa  
 a person very thrifty  
 ‘a very thrifty person’  
 b. esta creativa obra de arte  
 this creative piece of art  
 c. su destructiva respuesta  
 her destructive answer  
 d. un nutritivo desayuno  
 a nutritious breakfast

Some of the adjectives in (48) can be used both as pseudo-relational adjectives and as qualifying adjectives.

- (50) a. un morfema (\*muy) negativo  
 a morpheme very related-to-denying  
 ‘a morpheme that relates to negation’  
 b. una persona (muy) negativa  
 a person very negative  
 ‘a very negative person’

Additional evidence that *-tivo* can produce qualifying adjectives, while *-torio* specialises in pseudo-relational ones comes from minimal pairs from the same verbal bases.

- (51) a. líneas divis-orias  
 lines divide-TORIO  
 ‘dividing lines’  
 b. un asunto muy divis-ivo  
 a matter very divide-TIVO  
 ‘a very divisive matter’  
 (52) a. un proceso decis-orio  
 a process decide-TORIO  
 ‘a process related to deciding’  
 b. un proceso decis-ivo  
 a process decide-TIVO  
 ‘a very important process’  
 (53) a. un interdicto prohibi-torio  
 a ban forbid-TORIO  
 ‘a ban in order to forbid something’

- b. el prohibi-tivo precio de la vivienda  
the forbid-TIVO price of the housing  
'the prohibitive price of housing'

Thus, *-torio* with verbs behaves as *-ical* with nouns: it only produces pseudo-relational adjectives. The suffix *-tivo*, in contrast, is more like *-oso* or *-ico*: it gives both pseudo-relational and qualifying adjectives.

In terms of the interpretations that the head nouns receive, there are several specific relations that are favoured. The most common interpretation of the R relation is an instrumental one, where the head noun is interpreted as the entity that is used to perform the event.

- (54) a. verbo copulativo  
verb copulative  
'copulative verb'
- b. sustancia fecundativa  
substance fertilising  
'fertilising substance'
- c. texto infamatorio  
text defamating  
'defamating text'
- d. acto conmemorativo  
act commemorative  
'commemorative act'

A second frequent relation is that in which the head noun denotes an entity whose behaviour or external properties are a sign that there is a relation with the event.

- (55) a. enfermedad degenerativa  
sickness degenerative  
'degenerative sickness'
- b. movimiento ondulatorio  
movement undulatory  
'undulatory movement'
- c. proceso inmigratorio  
process immigratory  
'immigratory process'
- d. movimiento oscilatorio  
movement oscillating  
'oscillating movement'

A third typical interpretation is that in which the head noun is interpreted as the entity that has as its purpose the event.

- (56) a. curso preparatorio  
course preparatory  
'preparatory course'  
b. afán recaudatorio  
eagerness collecting-money  
'money-collecting eagerness'  
c. prueba eliminatoria  
test eliminating  
'qualifying test'

#### 4.2 Argument structure realisation

One area where, descriptively, there is quite a lot of lexical variation is in the possibility of expressing some of the verbal arguments of the base of pseudo-relational adjectives. Next to cases where the pseudo-relational adjective can express some arguments of their internal structure, we find cases where this seems to be impossible for the speakers consulted. Despite the individual lexical differences, the following sets of data are evidence that the verbal base is able at least under some circumstances to be determined to introduce arguments.

It is possible to document cases where the adjective includes the argument which in the verbal version would correspond to the direct object.

- (57) a. el esquema tiene que ser [...] *aclinatorio* de las ideas  
the scheme has to be clarify-TORIO of the ideas  
'the scheme must clarify the ideas'  
b. aclarar las ideas  
clarify the ideas
- (58) a. el hecho [...] *es justificativo* de que posee valores  
the fact is justify-TIVO of that possesses values  
'this fact justifies that it has value'  
b. justificar que posee valores  
justify that it.possesses values

[examples from Google]

There are also cases where the indirect object can be expressed.

- (59) a. Esto *es aportativo* a la capital.  
this is contribute-TIVO to the capital  
'This contributes to the capital'  
b. aportar algo a la capital  
contribute something to the capital

- (60) a. El cultivo *no es atributivo* a los hombres  
the cultivation not is confer-TIVO to the men  
'Plant cultivation is not attributed to men'  
b. atribuir algo a alguien  
confer something to someone
- (61) a. un régimen *retributivo* a la producción eléctrica de origen eólico  
a system retribute-TIVO to the production electric of origin wind  
'a system that retributes the eolian electricity production'  
b. retribuir algo a alguien o algo  
retribute something to someone or something

[examples from Google]

The most frequent situation is that prepositional complements are expressed.

- (62) a. el fallo *es absolutorio* de los cuatro delitos  
the decision is absolve-TIVO of the four charges  
'the decision is absolutory of the four charges'  
b. absolver de los delitos  
absolve of the charges
- (63) a. su dictamen [...] "*es acusatorio de* delito  
the decision is accuse-TORIO of crime of  
de peculado"  
embezzlement  
'the decision is accusatory of embezzlement'  
b. acusar a alguien de algo  
accuse someone of something
- (64) a. Este módulo *es acreditativo* a la Formación de Terapeutas  
this module is accredit-TIVO to the formation of therapists  
'This module accredits people as therapists'  
b. acreditar a algo  
accredit to something
- (65) a. El título *es apelativo* a la imaginación de los niños  
the title is appeal-TIVO to the imagination of the children  
'The title appeals to children's imagination'  
b. apelar a algo  
appeal to something
- (66) a. *es distributivo* entre todos los trabajadores  
is distribute-TIVO among all the workers  
'It distributes among all workers'  
b. distribuir algo entre personas  
distribute something among people

- (67) a. el dinero invertido [...] *es* *equiparativo a*  
 the money invested is compare-TIVO to the  
 los conocimientos  
 knowledge  
 ‘The money invested is proportional to the knowledge’  
 b. equiparar algo a algo  
 compare something to something
- (68) a. *es conectivo con* la sociedad  
 is connect-TIVO with the society  
 ‘It connects with society’  
 b. conectar con algo  
 connect with something

[examples from Google]

#### 4.3 On *-dor* and *-nte*

Rainer (1999) lists *-dor* and *-nte* as the most productive adjectivalisers in what he calls ‘pure’ deverbal active adjectives. In the case of *-dor*, there are many formations that behave as pseudo-relational adjectives, such as the ones listed in (69).

- (69) broncea-dor ‘tan-DOR, that tans’, coloniza-dor ‘colonise-DOR, that colonises’, democratiza-dor ‘democratise-DOR, that democratises’, organiza-dor ‘organise-DOR’, penaliza-dor ‘penalise-DOR, that penalises’, seca-dor ‘dry-DOR, that dries’

Many of these adjectives can be used also as nouns, and in fact *-dor* is generally studied as the English equivalent of the nominaliser *-er* (Rifón 1996; Alexiadou & Schäfer 2010; Fábregas 2012; Cano Cambronero 2013). It is frequently the case that the pseudo-relational adjectives related to this suffix modify machines, gadgets and artificial substances whose function is to trigger the corresponding events, something that we have seen is frequently the case with pseudo-relational adjectives anyway.

- (70) a. una máquina expende-dora  
 a machine sell-DOR  
 ‘a selling machine’  
 b. pintura barniza-dora  
 paint varnish-DOR  
 ‘varnishing cream’  
 c. crema des-maquilla-dora  
 cream DES-make.up-DOR  
 ‘cream to remove make-up’

- d. una máquina ensambla-dora  
 a machine assemble-DOR  
 ‘a machine to assemble things’
- e. un aparato medi-dor  
 a device measure-DOR  
 ‘a measuring device’

Many of these adjectives have been recategorised as nouns, as in (71). These could be cases of adjective to noun conversion, an independently needed operation in Spanish (see Bauer & Valera 2005 for an overview of conversion and its different analyses).

- (71) computa-dor ‘compute-DOR, computer’, lava-dora ‘wash-DOR, washer’,  
 monta-dora ‘set-DOR, setter’, pulveriza-dor ‘spray-DOR, spray’, refrigera-dor  
 ‘refrigerate-DOR, fridge’

Even though the instrument reading is central in this class of adjectives, it is possible to find other interpretations, such as the purpose reading:

- (72) a. un proceso recauda-dor  
 a process collect-DOR  
 ‘a process to collect (money)’
- b. un deseo coloniza-dor  
 a desire colonise-DOR  
 ‘a desire to colonise (something)’
- c. un impulso democratiza-dor  
 an impulse democratize-DOR  
 ‘an impulse to democratise (something)’

The range of interpretations is restricted, however, to those that imply that the head noun is in some sense what initiates the event; we are not aware of cases in which *-dor* adjectives mean that the head noun exhibits signs that relate to the event (cf. *enfermedad degenerativa*, ‘degenerative disease’ vs. *enfermedad degeneradora* ‘disease that causes degeneration’) or are interpreted as the patient of the event, something which fits with the view of *-dor* as similar to English *-er*.<sup>3</sup>

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3. However, not all nouns in *-dor* can be related to adjectives. In particular many of the nouns in *-dor* that express agents of different events lack an adjectival counterpart. One test that can be applied is combination with *uno* ‘one’, which in Spanish requires that there is no overt noun following it (cf. *\*uno niño* ‘one child’ vs. *uno e??? amable* ‘a nice one’). The ungrammaticality of *uno* with the *-dor* formations in (i) show that they are nouns and cannot be used as adjectives.

- (i) a. \*uno escrit-or  
 one write-DOR  
 ‘a writer’

The suffix *-dor* can also produce qualifying readings as an adjectivaliser: it does not produce modal adjectives, but both dispositional (73a) and habitual readings (73b) are attested – cf. Chapter 8. Many of these adjectives do not have a nominal counterpart (*\*un prometedor* ‘\*a promising’, *\*un conmovedor* ‘\*a touching’, *\*un desolador* ‘\*a devastating’).

- (73) a. un ambiente acoge-dor  
 an environment receive-DOR  
 ‘a welcoming environment’  
 b. una persona madruga-dora  
 a person get.up.early-DOR  
 ‘a person that is an early riser’

Importantly, there are a few cases where *-dor* allows an episodic reading. Two such cases are in (74): in (74a), the team must have won on a specific occasion, and in (74b) the person must have lost.

- 
- b. \*uno goberna-dor  
 one rule-DOR  
 ‘a governor’  
 c. \*uno patrocina-dor  
 one sponsor-DOR  
 ‘a sponsor’  
 d. \*uno viola-dor  
 one rape-DOR,  
 ‘a rapist’  
 e. \*uno pensa-dor  
 one think-DOR,  
 ‘a thinker’

It is unclear at this point, therefore, whether one has to adopt a view where *-dor* is a single affix that can produce both nouns and adjectives or whether one is forced to accept the existence in Spanish of two distinct affixes *-dor* that are only historically related. The first option could be implemented by treating *-dor* as a root (along the lines of Lowenstamm 2008) which modifies structures of different types. One could specifically propose that *-dor* is a root that comes with the entailment that an agent-like relation must be interpreted. That root would be licensed both in the KP-PP area, and in the NP area, perhaps as an adjunct to the category-defining heads as argued in detail by Acedo-Matellán (2010) and Acedo-Matellán & Mateu (2014) for other cases. Another option would be to associate *-dor* to a structure that resembles the one for *-ista* in §5.2.3. Putting aside this problem – which also applies to *-nte* below, we will restrict the discussion to adjectival formations with *-dor*.

- (74) a. el equipo gana-dor  
 the team win-DOR  
 ‘the winning team’  
 b. el candidato perde-dor  
 the candidate lose-DOR  
 ‘the losing candidate’

This episodic reading will be related in Chapter 9 to a historical relation with active participles, which will support an analysis where *-dor* is allowed to select a structure containing AspP.

In the case of the suffix *-nte* (see in particular Cano Cambronero’s 2013 exhaustive description) we find several properties shared with *-dor*. First of all, it produces some pseudo-relational adjectives where the head noun is interpreted as an instrument or means to cause the event (note that in some of these cases, episodic readings are possible).<sup>4</sup>

- (75) adelgaza-nte ‘slim-NTE, slimming’, ambula-nte ‘amble-NTE, itinerant’, aromatiza-nte ‘scent-NTE, scenting’, causa-nte ‘cause-NTE, causing’, descende-nte ‘descend-NTE, descending’, disolve-nte ‘dissolve-NTE, that dissolves’

The adjectivaliser *-nte* can also produce qualifying adjectives. The most frequent class in this case are dispositional adjectives which describe a natural tendency of the head noun to trigger the event expressed by the base (76). Something humiliating is not something that humiliates or that can humiliate, but something whose internal properties are such that it is predisposed to humiliate others. The study of these adjectives is undertaken in Chapter 8.

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4. Many of these adjectives double as nouns, but just as in the case of *-dor*, we find cases of nouns in *-nte* that do not have adjectival versions, especially when they refer to agents and not instruments.

- (i) a. \*uno anuncia-nte  
 one advertise-NTE  
 ‘an advertiser’  
 b. \*uno concursa-nte  
 one compete-NTE  
 ‘a contestant’  
 c. \*uno enseña-nte  
 one teach-NTE  
 ‘a teacher’  
 d. \*uno habita-nte  
 one live-NTE  
 ‘an inhabitant’



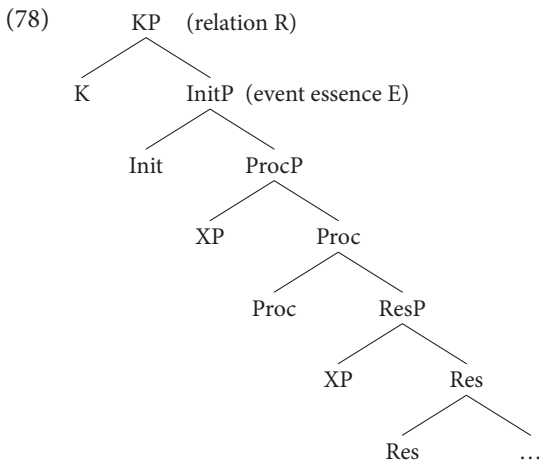
- (76) alarma-nte ‘alarm-NTE, alarming’, agobia-nte ‘stress-NTE, stressful’, arcaiza-nte ‘make.archaic-NTE, archaizing’, complacie-nte ‘please-NTE, obliging’, humilla-nte ‘humiliate-NTE, humiliating’

The suffix *-nte* is historically derived from a class of participles, present participles (Pharies 2002). Thus, it is not surprising that episodic readings are attested with some frequency. A few examples are presented in (77); these are discussed in Chapter 9.

- (77) a. agua hirvie-nte  
water boil-NTE  
‘water that is boiling’  
b. una niña durmie-nte  
a girl sleep-NTE  
‘a girl that is sleeping’  
c. jardines colga-ntes  
gardens hang-NTE  
‘gardens that are hanging (from some place)’  
d. tambores sona-ntes  
drums sound-NTE  
‘drums that are sounding’

## 5. Pseudo-relational adjectives: Analysis

Given the grammatical behaviour of pseudo-relational adjectives, we will propose that the ingredients involved in building them are identical to those that produce denominal relational adjectives, only that this time the base is not a nominal constituent, but a verbal one.



To be clear, what we are proposing is that K can select verbal constituents in addition to nominal ones. At first, this idea seems to be counterintuitive, but we would like to argue that it should be accepted. There are a few reasons for this, both theoretical and empirical.

Starting with the theoretical reasons, event arguments (Neo-Davidsonian *e* arguments or Ramchandian E arguments) are participants. The difference between a participant that denotes an individual and a participant that denotes an event essence is purely sortal. What is different is not the type of the constituent, but the sort of entity that it denotes. In particular, the difference is very small in the view of events adopted here, where the type of participant symbolised by E is deprived of time and world parameters.

Remember also the parallel that the semantic theories on event types establish between event kinds and event tokens, on the one hand, and nominal kinds and nominal tokens, on the other (Gehrke & McNally 2015). The proposal is that NP denotes a kind, and the token interpretation emerges when NP combines with higher functional projections – Number, Quantifiers, etc.. In the case of event essences, the equivalent of VP also denotes a kind of event which becomes a specific episode when combined with AspP and other related projections. This type of parallelism is also emphasised in Ritter (1991), and especially in Wiltschko (2014: 78), who in fact directly associates Number with Aspect and Complementisers with Prepositions as the manifestation of essentially the same universal functions across domains and conceptual dimensions.

Note also that K denotes a relation between entities. It is definitely possible to talk about relations between eventualities, as the notion of ‘relation’ does not presuppose that the ground should be nominal. We might tend to think that because, traditionally, the label ‘case’ has been used for nominal arguments, but what K does, as an inherent ‘case’ head, is just to define a relation between a predicate and an argument. The argument in deverbal adjectives is an eventuality, and the predicate is whatever type of description is related to the relation R denoted by K.

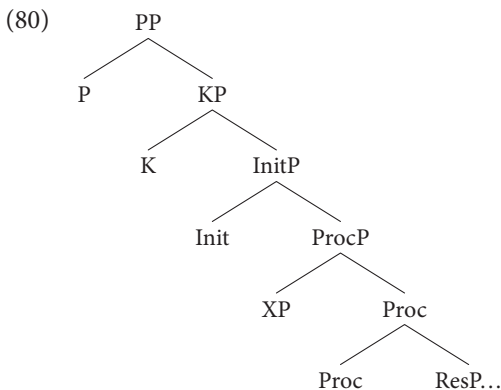
A more empirical type of evidence comes from verbal periphrases in Spanish (and other Romance languages). Aspectual auxiliaries select lexical verb constituents as their complements (see also Wurmbrand 1998; Rothstein 2001; Eide 2006), and as such they guarantee that the auxiliated verb that combines with them is a manifestation of VP (or its equivalents across theories). Spanish has plenty of periphrases where the auxiliated verb is directly adjacent to a preposition, showing that nothing prevents VPs from combining with Ps, and therefore in our framework also with KP. Interestingly, the prepositions are almost always *a* ‘to’ and *de* ‘of’, which are prototypically used to express case.

- (79) a. ir a comer  
       go to eat  
       b. dejar de comer  
       leave of eat  
       c. terminar de comer  
       finish of eat

See also Kayne (1994) for the proposal that prepositions are used in the verbal domain as conjunctions. What Spanish does not allow, empirically, is a gerund or a participle to combine with a preposition, but this is easily explained if these non-finite forms are – in essence – non-finite verbs which already contain prepositions (cf. Fábregas 2008; Gallego 2010), as we will develop in more detail in Chapter 9, §4.4.

Given (78), the pseudo-relational adjectives will be (in general) non-episodic because they embed a VP lacking aspect. We have seen evidence that pseudo-relational adjectives can introduce arguments, and this is explained if the syntactic structure below AspP can be fully present in them. With respect to the preference for *de* ‘of’ marking in direct objects, we suggest that it reflects the tendency to mark with *de* all arguments that are materialised in a context where the verbal functional structure is missing (see Franco & Manzini 2017), but we leave the matter open, as well as the specification of the conditions under which the arguments are more likely to be expressed.

(80) presents the basic structure of the qualifying deverbal adjectives that we will explore in the next two chapters. We establish a total parallelism with the nominal domain: qualifying deverbal adjectives project PP in addition to KP. This lexical P gives the relation R the content that licenses degree modification and the rest of the properties that follow from the structure now being a predicate.



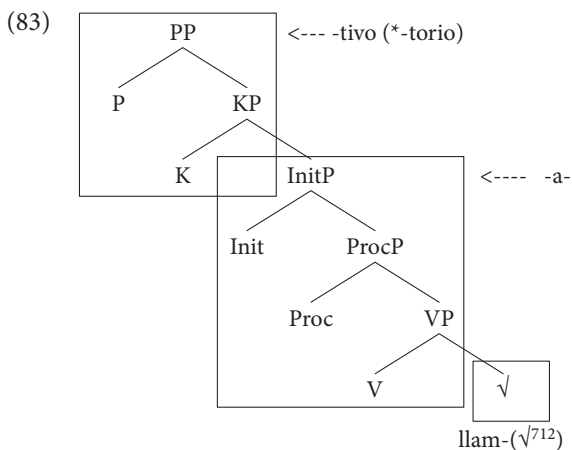
We have seen that *-torio* only produces pseudo-relational adjectives, while *-tivo*, *-nte* and *-dor* also allow qualifying readings. This is captured by the lexical entries in (81): the first is only introduced to lexicalise K, while the others include P and K. By the Superset Principle, *-tivo* can produce both types of adjectives – it can spell out K or P+K, and by the Exhaustive Lexicalisation Principle *-torio* cannot be introduced when both P and K are present, because P would not be identified.

- (81) a. /torio/ <---> K  
 b. /tivo/ <---> PP  
     P           KP  
                 K

(82) illustrates the structure of the pseudo-relational adjectives *administra-tivo* ‘administrat-ive’ and *acusa-torio* ‘acusa-tory’, while (83) illustrates the structure of the qualifying adjective *llama-tivo* ‘appeal-ing’. As in the case of denominal relational adjectives, we relate the adjectivaliser to the KP layer. The theme vowel that shows that the base is verbal is the spell out of the verbal lexical projections – VP at a minimum, and also the Aktionsart projections, while the lexical verb corresponds to the root in our examples.

- (82)
- 
- KP <--- -tivo / -torio  
 K   InitP <--- -a-  
     Init   ProcP  
         Proc   VP  
                 V   √  
                     administr-(√<sup>1077</sup>)  
                     acus-(√<sup>844</sup>)

In the case of a qualifying adjective, the adjectivaliser is the spell out of PP+KP, and as in denominal adjectives only some of the adjectivalisers contain in their lexical entry the PP layer. The exponent *-torio* is restricted to relational adjectives, as *-ical* in denominal ones, because it only spells out the KP layer. Thus, by the Exhaustive Lexicalisation Principle it will not be introduced in contexts that contain PP.



Beyond this, we have seen that the preferred relations expressed by the pseudo-relational adjectives normally fall within the wide class of ‘causing relations’. They tend to be the instrument used to trigger the event, or they can be interpreted as the entity whose purpose is directed towards that event – among other readings that are not so obviously related to causation. This tendency is reflected in the structure: if the highest verbal projection in a causative verb is Initiation Phrase, the KP selects a head whose inherent semantics is one of causation, so it is likely that this relation is favoured when interpreting the R relation that K denotes. However, remember that with *-torio* and *-tivo* this is not a forced outcome, so K can still be independent of the semantics of the head it selects.

In the case of *-dor* and *-nte*, in contrast, we have seen that they are restricted to interpretations where the head noun is the causer – in wide terms – of the event denoted by the base. We could simply say that these affixes necessarily select Init in the base. The question is how they can do that, if K is not semantically strong enough to define only one specific type of relation. We propose that the selectional properties are part of the information contained in the lexical entry of the exponents *-dor* and *-nte* (see also Franco & Manzini 2017). They, through their lexical information, restrict the range of interpretations of R to those that are related to initiation. In other words: these affixes are specialised in denoting the agentive quale, and we will see this again when we treat their use as qualifying adjectives.

(84) *-dor* / *-nte* <sub>[R = initiation]</sub>

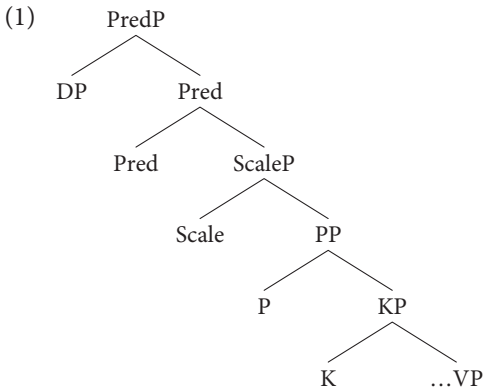
We leave now the discussion of pseudo-relational adjectives and move to the study of qualifying deverbal adjectives, which will occupy the next two chapters.

# Qualifying deverbial adjectives I

## Modal adjectives

### 1. Overview of the analysis for qualifying deverbial adjectives

As usual, let us start this chapter with an overview of the analysis for the three classes of deverbial qualifying adjectives, which will be discussed in this chapter (for modal adjectives) and the next (for dispositional and habitual adjectives). As in the case of denominal qualifying adjectives, we will claim that they contain a full-fledged recycled prepositional structure where the presence of P allows the projection of a scale and a PredP.



As in qualifying denominal adjectives, we will claim that the three classes – modal, dispositional and habitual – are not differentiated by configurational properties of the structure, or by different levels of structural complexity. Given that the three classes are not differentiated by their grammatical behaviour, the distinction between the three classes, we will argue, follows from the different conceptual properties of the P layer, which is related to different values of the qualia structure. In fact, as we will see, the conceptual meaning of the base, and the conceptual information related to the subject of predication, are crucial in determining whether one adjective is interpreted as modal, dispositional or habitual, in support of the conceptual view.

The qualia that are expected to be involved in the interpretation of deverbial qualifying adjectives are the two that relate to eventualities in Pustejovsky (1995):

the agentive quale and the telic quale. We will argue that modal adjectives identify the telic quale – the subject of predication has the ability to undergo an eventuality, while dispositional adjectives identify the agentive one – the subject has the ability to trigger an eventuality. However, identification of one of these two qualia is not a necessity, and we will in fact argue that the suffix *-ón*, given its different uses, identifies the constitutive quale and for this reason can act as a possessive or a habitual suffix.

- (2) a. Modal adjectives: tQ in P  
 b. Dispositional adjectives: aQ in P.  
 c. *-ón* (and possibly other habitual adjectives): cQ in P.

An interesting property of deverbal adjectives is that apparently none of them identifies the formal quale; at least, I have not been able to identify any class where this quale is identified. One could speculate about possible reasons for this: perhaps the presence of an event automatically favour the telic and agentive qualia, with the other options only made available if the exponent forces it by virtue of its lexical meaning – as in the case of *-ón*. In such a case, the absence of adjectives identifying the formal quale could be a lexical accident of Spanish.

Let us now get into the details, starting with the reasons why the three classes of adjectives should be differentiated by their conceptual semantics.

## 2. Against a syntactic decomposition of the three classes of qualifying deverbal adjectives

Remember that there are three classes of qualifying deverbal adjectives, repeated here for convenience: modal (3a), dispositional (3b) and habitual (3c).

- (3) a. *leva-dizo*  
 raise-DIZO  
 ‘that can be raised’  
 b. *quebra-dizo*  
 break-DIZO  
 ‘that tends to get broken, fragile’  
 c. *olvida-dizo*  
 forget-DIZO  
 ‘that typically forgets things, forgetful’

In the case of denominal adjectives (Chapter 5, §3) we argued that the semantic taxonomy identified did not make it easy to conceive of the relation between the classes as one of monotonic containment along the lines of what Caha (2009) has

argued for case relations within the nanosyntactic framework. However, the semantic relation seems to be tighter in the case of deverbal adjectives and specifically among these three readings. Let us see why.

## 2.1 The readings can be ordered by their semantic complexity

As Svensen (2018) has extensively argued, there is a sense in which the notions of modality – particularly, potential modality, dispositionality and habituality can be seen as starting from a common core and building progressively by the addition of extra material (see also Fábregas 2016b).

The potential semantics simply states that the internal properties of an entity allow it to participate in an eventuality. For instance, if we predicate of a bridge that it is *leva-dizo* ‘that can be raised’, as in (4), we just say that the bridge has particular internal properties that in principle make it possible for it to participate in an event of *levar* ‘raise’. There is no reference to the external circumstances, no entailment that the bridge is particularly predisposed to rising or that it habitually rises.

- (4) puente *leva-dizo*  
 bridge raise-DIZO  
 ‘drawbridge’

In the obligation meaning of modal adjectives, we have the same minimal set of entailments. If we say that a particular invoice is *paga-dero* ‘pay-DERO, payable’, we simply say that the properties of the invoice are such that it should be paid, but again there is no reference to external circumstances that facilitate this eventuality. Contrast this with a dispositional adjective such as the one in (3b), *quebra-dizo* ‘fragile’ (5). Here the dispositional meaning presupposes that the internal properties of the vase are such that it can participate in a breaking event, as the entity broken, but this possibility is not the only thing that the adjective denotes.

- (5) jarrón *quebra-dizo*  
 vase break-DIZO  
 ‘fragile vase’

Beyond the possibility of breaking, the adjective predicates from the head noun that the properties of the vase are such that it definitely will break if there are external circumstances that facilitate that event, such as for instance that some pressure is applied to the object. This is in accordance with the semantic definition of dispositionality in Quine (1960: 222–223):

- (6) To say that *a* [=the vase] is fragile at *t* is to say that if *a* were struck smartly at *t*, *a* would break at *t*’.



Dispositionality is a form of modal necessity that states that, given facilitating circumstances that make the event possible, the entity would necessarily participate in that event (Lewis 1997, Mumford 1998: 89–91; Manley & Wasserman 2007). What is particularly relevant for our purposes here is that having a tendency or a disposition presupposes that the entity can participate in the event, and differs from a potential adjective in that it adds that, when the external situation facilitates it, participation in the event is necessary.

Let us now move to the habitual statement, which implies not only that one tends to participate in the event, but also that one characteristically does so regularly. (3c) is a good example of a habitual adjective because in (7) it does not predicate from the employee that it can participate in a forgetting event or that he necessarily will forget things if facilitating circumstances are in place – for instance, a particularly stressful and busy week. If someone does not regularly forget things, but we believe that his personality is such that he would necessarily forget them if pressed, (7) is an unfair statement. The person in particular should have forgotten things regularly for us to make the predication in (7).

- (7) un empleado olvida-dizo  
 an employee forget-DIZO  
 ‘a forgetful employee’

Again, the habitual statement retains the entailments of the modal reading: it follows that unless the employee was able to participate in a forgetting event, he would not habitually do so. Facilitating external circumstances are also part and parcel of a habitual statement. The notion of regularity involved in habitual adjectives presupposes that regularity only takes into account facilitating situations where, to begin with, the event can happen. Specifically: the time of the day during which someone is asleep does not count for the evaluation of the regularity, because they exclude the circumstances that make it relevant to talk about forgetting.

The role of facilitating circumstances is even clearer when the event involves an activity, as in (8).

- (8) un estudiante abus-ón  
 a student abuse-ÓN  
 ‘a student who is a bully’

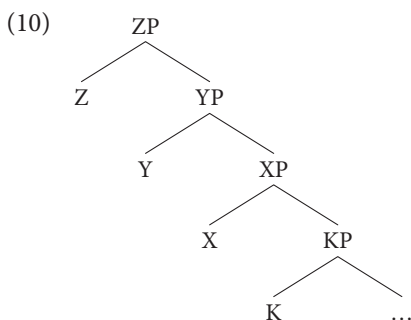
Imagine that someone tells us that the student should not be considered *abusón* because he does not bully others when he sleeps, is alone in his room or is taking a shower; the bullying eventuality would not be regular enough. Clearly, we would not accept that argument, simply because the regularity is not evaluated for all situations: only those where facilitating circumstances are present are used to evaluate it.

## 2.2 However, the syntactic complexity does not increase

Therefore, it is not in principle implausible that there is a monotonic increase in the denotation of each one of the readings, along the lines of (9) – adapted from Svensen (2018: 370).

- (9) a. Modal adjectives state that the internal properties of the entity are such that participation in the eventuality is possible, or required  
 b. Dispositional adjectives add to the possibility the notion that if facilitating external circumstances are present in the context, participation in the event is necessary  
 c. Habitual adjectives add to the dispositionality the notion that, restricted to the situation where the circumstances are present, participation in that eventuality is regular

This could suggest a decomposition as in (10; adapted from Svensen 2018: 370), where the modal reading is manifested by the presence of XP, the external facilitating circumstances are added at the YP level and the regularity notion is contained in ZP. In the context of our framework Z-Y-X would be an internal decomposition of the lexical PP area, specifically of the part corresponding to PlaceP – remember that PathP would correspond to the scale.



However, as was the case with denominal adjectives – remember Chapter 5, §3 – one has to proceed with caution. Even if this containment relation were plausible at a semantic level, the claim made in (10) is syntactic, and we would require morphosyntactic evidence that the relation exists. In the following paragraphs we will provide several arguments that the relation between the readings should not be captured syntactically, and that whatever connection exists between the different readings of the adjectivaliser is better left to other components.

Remember that the combination of the Superset Principle and the Exhaustive Lexicalisation Principle produce as a result that an affix can materialise constituents that are adjacent in the tree. No affix should be able to materialise both KP and the

whole ZP constituent without also spelling out the intermediate heads YP and XP. Translated to deverbal qualifying adjectives, we do not expect an adjectivaliser to be used for pseudo-relational adjectives and habitual or dispositional adjectives without also spelling out modal adjectives. However, we do have at least one instance of such an adjectivaliser: *-(t)ivo*.

Consider the two adjectives in (11).

- (11) a. llama-tivo  
 appeal-TIVO  
 ‘appealing’  
 b. administra-tivo  
 administrate-TIVO  
 ‘administrative’

While (11b) is a clear case of a pseudo-relational adjective, (11a) is an instance of a dispositional adjective: something *llamativo* is not something whose properties make it possible to appeal to someone, but something that tends to appeal to people given facilitating circumstances: (11a) means that if someone perceives the entity described as such, and has the taste considered standard by his or her cultural norms, it will necessarily appeal to him or her.

However, and to the best of our knowledge, *-tivo* never produces qualifying adjectives of the modal type. If the readings were decomposed as proposed in (10), the whole enterprise that relates syncretisms to structural complexity would be refuted.

Additionally, there are reasons to think that the licensing conditions for modal adjectivalisers are not met by habitual adjectives. As we will see in detail in §3.2 below, modal adjectives are systematically related to passive construals of the base verb. This strongly suggests that whatever structure is used for modal adjectives, in Spanish it is restricted to bases involving projection of ProcP, not InitP. However, habituals behave precisely in the opposite way with respect to this property: they require bases where the agents, or more broadly the Initiators, are projected. If habituality contained modality, the requisites of the modal layer would be unlicensed within the habitual structure, making them ungrammatical.

A different perspective suggests itself once we look at the distribution of uses across suffixes. First of all, Svensen’s (2018) extremely detailed and exhaustive analysis and empirical overview notices that most readings are attested – with different levels of productivity – with the three affixes in her study. The suffix *-ón* is attested as the most productive habitual suffix, but it also produces some adjectives that have, rather, a dispositional reading, such as those in (12).

- (12) a. alimento pic-ón  
 food itch-ÓN  
 ‘spicy food’

- b. profesor mol-ón  
 teacher be.fancy-ÓN  
 ‘cool teacher’

In the first case, we do not state that the food can be hot or that it is regularly causing other people’s mouth to burn because it is spicy, but that given facilitating circumstances it will necessarily cause someone’s mouth to burn. The same happens in the second case: it is not that the teacher can be cool or is regularly liked by people, but that it has a tendency to be liked by people. This is a well-behaved suffix for the sequence proposal, first because it has a clear preferred meaning (habitual) and second because the two readings are adjacent in the sequence.

The suffix *-dizo* prefers dispositional readings (13a), but as example (3) above shows, it can also have potential and habitual readings, although they are less frequent. (13b) shows another modal example, and (13c) illustrates the habitual interpretation, which emerges in particular with psychological verbs which take animate experiencers as subjects. The line between dispositional and habitual readings is blurry here, as one can typically obtain very similar interpretations in (13c) with glosses such as ‘that tends to...’.

- (13) a. move-dizo ‘move-DIZO, that tends to move’, hui-dizo ‘flee-DIZO, that tends to flee away’, torna-dizo ‘change-DIZO, that tends to change’, resbala-dizo ‘slide-DIZO, that tends to slide or cause someone to slide’  
 b. arroja-dizo ‘throw-DIZO, that can be thrown’  
 c. enfada-dizo ‘get.angry-DIZO, that regularly gets angry’, asombra-dizo ‘be.amazed-DIZO, that regularly gets amazed’

Finally, the suffix *-dero* produces modal (14a) adjectives; less frequently dispositional (14b) forms are also attested, as well as some instances where one can argue that there is a habitual value (14c).<sup>1</sup>

- (14) a. hace-dero ‘do-DERO, doable’, casa-dero ‘marry-DERO, marriable’, deci-dero ‘say-DERO, that can be said’, lleva-dero ‘carry-DERO, easy to carry or tolerate’, acontece-dero ‘happen-DERO, that can happen’  
 b. rei-dero ‘laugh-DERO, that tends to produce laughter’, complace-dero ‘please-DERO, pleasing’

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1. It might be tempting to relate *-dero* to the dispositional denominal suffix *-ero*, studied in §5. One could propose that *-dero* is derived as *-ero* combining with the participle of the verb (*re-í(r)* ‘laugh-ThV > *re-í-d(o)* ‘laughed’ > *re-í-d-ero* ‘that produces laughter’). Svensen (2018), however, shows in detail that this is not possible synchronically because there are morphological differences between the base of *-dero* and the participial form of the verb in many cases (cf. *hecho* ‘made’ vs. *hace-dero* ‘make-DERO, doable’).

- c. *reza-ndero*<sup>2</sup> ‘pray-DERO, that prays often’, *sali-dero* ‘go.out-DERO, that regularly goes out’

Finally, it is relevant to notice that the suffix *-ble* is not always modal, even though producing modal adjectives is clearly its most productive use. Next to modal adjectives, we can attest a few dispositional adjectives, among them the example in (15), which has been noted in the literature (cf. Oltra-Massuet 2014).

- (15) *agrada-ble*  
 please-BLE  
 ‘pleasant’

The adjective in (15) does not state that something or someone can please or can be pleased, or that it does so regularly: it describes the tendency, by virtue of an entity’s internal properties, to please others, such that there would necessarily be a pleasing event under facilitating circumstances.

None of these other affix uses presents a distribution that in itself falsifies the hierarchy proposed, as *-(t)ivo* did. However, they do show that there is some flexibility between the classes: each suffix has a ‘profile’ which makes it more specialised for one of the readings: *-ón* preferentially produces habituals; *-dizo*, dispositionals, and *-dero* and *-ble*, modals. Secondly, other meanings are allowed, but each suffix produces the secondary meanings in slightly different ways: for instance, *-dizo* almost exclusively produces habitual readings with psychological predicates, something that is irrelevant for *-ón*.

Importantly, as it was the case with denominal adjectives, we will see that the three classes do not differ in terms of their core syntactic properties: their position, their agreement possibilities and their combination with degree are remarkably similar. The relevant distinction between them, as we will discuss in detail, are established at a semantic level, taking into account properties that are more conceptual than structural. Habitual adjective readings, for instance, are associated to human subjects and the notion of behaviour as a typical way of acting in the world; modal and dispositional adjectives are differentiated by whether the base specifies a causation component, and many of the properties of *-ble* adjectives in opposition to *-dizo* adjectives follow from the distinction between events that can be construed as internally caused and those that do not. Together, the empirical facts are more amenable to an analysis where the properties of each suffix, in combination with the nature of the base verb, trigger the different readings, rather than

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2. It would also be possible in this case to claim that *-ndero*, rather than an allomorph of *-dero*, should be considered an independent affix. However, it would be documented only in another form (without habitual meaning): *colga-ndero* ‘hang-NDERO, hanging’.

one where the readings themselves are related to a syntactic hierarchy as in Caha (2009). Specifically, as it was the case of denominal adjectives, we will argue that the different affixes identify one of the qualia of the base, and add in some cases a more concrete conceptual notion, such as ‘ability’.

With this background in mind, let us now move to the description and analysis of the first class of qualifying deverbal adjectives, potential adjectives.

### 3. Modal adjectives: Empirical description

Modal adjectives are without any doubt the most researched class of deverbal adjectives in Spanish, and probably cross-linguistically. Beyond the descriptions in Rainer (1999: 4609–4610), RAE & ASALE (2009: §7.10), Martín García (2014: 29–31) and especially Oltra-Massuet (2014: 24–127), the suffixes in Spanish and their cognates across Romance languages have been studied – among many others – in Val Álvaro (1981), Heinz (1982), de Miguel (1986), Batiukova (2006) in the context of middle structures and García Pérez (2014); by Gràcia (1992, 1995) for Catalan; by Leeman (1992) for French; Attili (1977), Bisetto (2009) for Italian, or Moreira (2014, 2015) for Portuguese (see also Aronoff 1976; Kayne 1981; Keyser & Roeper 1984; DiSciullo 1997; Hackl 1998; Roeper & van Hout 1998; Nevins 2002, Volpe 2005 and Albespritt 2009 for English; Kiefer 1981; Lipták & Kenesei 2017 for Hungarian, and Wood & Sigurdsson 2014 for Icelandic). The two suffixes that produce mostly modal adjectives in Spanish are *-ble* (16) and *-dero* (17).

- (16) *ataca-ble* ‘attack-BLE, assailable’, *bebi-ble* ‘drink-BLE, drinkable’, *compara-ble* ‘compare-BLE, comparable’, *deforma-ble* ‘deform-BLE, that can be deformed’, *descarta-ble* ‘discard-BLE, discardable’, *desea-ble* ‘desire-BLE, desirable’, *destaca-ble* ‘highlight-BLE, notable’, *discuti-ble* ‘discuss-BLE, arguable’, *evalua-ble* ‘evaluate-BLE, calculable’, *imagina-ble* ‘imagine-BLE, imaginable’, *imita-ble* ‘imitate-BLE, imitable’, *lava-ble* ‘wash-BLE, washable’, *licua-ble* ‘liquefy-BLE, liquable’, *opera-ble* ‘operate-BLE, operable’, *pronuncia-ble* ‘pronounce-BLE, that can be pronounced’, *quebranta-ble* ‘break-BLE, that can be broken’, *rebati-ble* ‘refute-BLE, refutable’, *recicla-ble* ‘recycle-BLE, recyclable’, *respira-ble* ‘breathe-BLE, breathable’, *ridiculiza-ble* ‘ridicule-BLE, that can be ridiculed’, *unta-ble* ‘spread-BLE, spreadable’, *vulnera-ble* ‘harm-BLE, vulnerable’
- (17) *abri-dero* ‘open-DERO, that can be opened easily’, *anda-dero* ‘walk-DERO, that can be walked in easily’, *coce-dero* ‘boil-DERO, that can be boiled easily’, *casa-dero* ‘marry-DERO, marriageable’, *hace-dero* ‘do-DERO, that can be done easily’, *lleva-dero* ‘carry-DERO, bearable’, *paga-dero* ‘pay-DERO, payable’, *pasa-dero* ‘pass-DERO, that can be passed easily’

There are also a notable number of modal adjectives with *-dizo*, but these will be discussed in Chapter 8, §2.2 because this suffix has additional properties and in fact productively produces habitual adjectives.

As can be seen in the translations, the two suffixes are not identical: in most cases, the second not only entails that participation in the event is possible, but also that the internal properties make it possible to perform the event easily. Something *lleva-ble* would be something that can be carried because it is designed to allow it, while something *lleva-dero* is something that is not just carriable, but also easy to carry, due to its internal properties.

The questions that have been posed with respect to modal adjectives, and specifically with respect to those in *-ble*, have been extremely varied and wide-ranging, including their connection to middle voice, modality and distinct notions of agentivity. However, it is perhaps fair to say that the following questions are those that are discussed in most articles.

- a. Are all modal adjectives derived from transitive verbs? While it is relatively clear that all *-ble* formations start from verbs that at least in one of their readings carry an internal argument, there are documented cases where the subject of the adjective corresponds to an argument that in the verbal structure is not introduced as an accusative.
- b. Are all modal adjectives passive with respect to verbal meaning? As we will see, while most of the formations force a passive interpretation of the base verb, there are a few formations in *-ble* that interpret the verb in an active construction.
- c. Do modal adjectives allow argument realisation? It has been questioned, for instance, that negated modal adjectives allow arguments, and it has been noted that modal adjectives impose referentiality restrictions on the arguments realised.
- d. Do modal adjectives allow aspectual modification?
- e. Should potential readings be structurally differentiated from readings of obligation? While most adjectives in *-ble* and *-dero* express the possibility of participating in the event, there are some that entail the obligation – by some external norm – to do so.

Let us start with the relation between *-ble* and transitive bases.

### 3.1 Internal arguments and accusative case

Leaving aside for the time being structures involving degree, the main type of verb that can produce modal adjectives in *-ble* or *-dero* is a transitive verb that introduces an initiator and an internal argument.

- (18) a. Juan tradujo esta novela.  
 Juan translated this novel  
 b. Esta novela es traduci-ble.  
 this novel is translate-BLE  
 ‘This novel is translatable’

When these conditions are in place, it is almost guaranteed that a *-ble* formation is possible, even if the base verb is semantically light: from *dar* ‘give’, *da-ble* ‘givable’ is documented.

The constraint should be divided into two parts which pose their own complications: the first part is that the base verb should at least allow a version where it introduces an external initiator. Gràcia (1992: 163–165; 1995) for Catalan and Oltra-Massuet (2014: 76–80) for Catalan and Spanish insist that verbs that can be bases of affixation for *-ble* do at least have a version with a causing external argument, contra De Miguel (1986: 166–168), who argues that this is not a condition on the formation of such adjectives. De Miguel (1986) pointed out the existence of several adjectives (19) which she argues proceed from intransitive or unaccusative uses of the verb:

- (19) *encogi-ble* ‘shrink-BLE, shrinkable’, *fermenta-ble* ‘ferment-BLE, that can ferment’, *cambia-ble* ‘change-BLE, changeable’, *varia-ble* ‘vary-BLE, variable’

For De Miguel (1986), the only restriction for *-ble* is that the subject should be a theme argument, irrespective of whether the verb is transitive or not. Gràcia (1992, 1995) notes that if this were the right generalisation, we would not be able to explain the ungrammaticality of adjectives such as *\*pareci-ble* ‘seem-BLE’ and the vast majority of unaccusatives (*\*naci-ble* ‘be.born-BLE’, *\*mori-ble* ‘die-BLE’, *\*apareci-ble* ‘appear-BLE’, *\*i-ble* ‘go-BLE’, *\*llega-ble* ‘arrive-BLE’...). Oltra-Massuet (2014) proposes that the right generalisation seems to be that the verbs in (17) do have a transitive version with an external argument (*X encoge Y*, *X fermenta Y*, *X cambia Y*, *X varia Y*...), and real unaccusative verbs cannot be used as bases for *-ble* adjectives. These authors admit that there is a remaining class of adjectives in *-ble* that seem to come from verbs lacking a causer and which have an ‘active’ reading of the base, but we will see that these adjectives should not be considered modal – therefore, the generalisation holds for modal adjectives, but not for *-ble*.





- (23) un camino anda-dero  
 a road walk-DERO,  
 ‘a walkable road’
- (24) andar por un camino  
 walk by a road

Finally, the range of interpretations that the subject can have with respect to the verbal structure is much wider in at least one particular construction that Oltra-Massuet (2014: 165–250) studies in detail. Oltra-Massuet notes that if the subject of the *-ble* adjective is interpreted as a degree that quantifies over the event or a quantity that ranges over individuals virtually any verb is a possible base for the modal adjective. Generally, as we have seen, unaccusative verbs are excluded as bases of modal adjectives, unless they have a causative version. However, in this degree or quantity structure they are allowed:

- (25) a. Que muriese todo lo mori-ble [google]  
 that died all the die-BLE  
 ‘that all that could die died’
- b. Apareció todo lo aparecible.  
 appeared.3SG all the appear-BLE  
 ‘All that could appear appeared’
- c. Llegó todo lo llegable.  
 arrived.3SG all the arrive-BLE  
 ‘All that could arrive arrived’ [Oltra-Massuet 2014: 37]

Similarly, intransitive verbs are generally accepted as the base for modal adjectives only to the extent that they allow a cognate object (26), but in this structure the range is much wider (27).

- (26) a. vivi-ble ‘live-BLE, livable’ (cf. *vivir una experiencia* ‘to live an experience’)  
 b. baila-ble ‘dance-BLE, danceable’ (cf. *bailar una canción*, ‘dance a song’)
- (27) a. estornudar todo lo estornudable  
 sneeze all the sneeze-BLE  
 ‘to sneeze to the maximal degree that one can sneeze’
- b. dormir todo lo dormible  
 sleep all the sleep-BLE  
 ‘to sleep all the time that can be slept’
- c. toser todo lo tosilable  
 cough all the cough-BLE  
 ‘to cough to the maximal degree that one can cough’  
 [Oltra-Massuet 2014: 177]

Finally, impersonal verbs can also take part in this structure.

- (28) a. llover todo lo llovable  
rain all the rain-BLE  
'to rain to the maximal degree that it can rain'  
b. nevar todo lo nevable  
snow all the snow-BLE  
'to snow to the maximal degree that it can snow'

The structure *todo lo V-ble* 'all the V-ble' is used as a quantifier or degree phrase that measures the event in some way, and internally to it the externalised participant is either a quantity or a degree that relates to the event's internal structure.

### 3.2 Passive and active interpretations: Modal adjectives must be passive

As we have seen, most formations in *-ble* are interpreted as passive in the sense that the subject is not the causer or the argument that would correspond to the subject in the active version of the verb. The examples in (29) and (30) might seem active, but they come from verbs which have versions where their subjects are interpreted as internal arguments.

- (29) a. un vehículo sumergible  
a vehicle submerge-BLE  
b. sumergir algo  
submerge something
- (30) a. unas cortinas corre-deras  
some curtains run-DERO  
'sliding curtains'  
b. correr unas cortinas  
run some curtains  
'to push some curtains that move on rails'

However, there are some active versions, as repeatedly noted in the literature (cf. De Miguel 1986; Gràcia 1992; Rainer 1999; Oltra-Massuet 2014). (31) illustrates some cases with *-ble*.

- (31) a. agrada-ble 'please-BLE, pleasant'  
b. apeteci-ble 'appetise-BLE, appetising'  
c. dura-ble 'last-BLE, lasting'  
d. perdurable 'endure-BLE, enduring'

There are also instances with *-dero* (30).

- (32) a. dormi-dero 'sleep-DERO, boring'  
b. perece-dero 'perish-DERO, perishable'

- c. crece-dero 'grow-DERO, that tends to grow'
- d. veni-dero 'come-DERO, future, that will come'
- e. vola-ndero 'fly-DERO, that flies'

These formations have been judged problematic in the literature. The reason for this is that they seem to contradict two principles that we have just seen in the previous section: (i) that the subject of the adjective is not an external argument (cf. 32e, for instance) and (ii) that unaccusative verbs should be excluded from the formation of modal adjectives (cf. 31c, 32d), unless the subject is taken to be a degree or a quantity.

What we will argue for in this section is that they are not a problem for the analysis of modal adjectives, because they do not convey a modal meaning, but rather a dispositional meaning. Something that is *agradable* 'pleasant' is not something that simply can please, but something whose internal properties are such that it tends to please people, if they perceive it and have a standard taste; something *apetecible*, similarly, is something that tends to be liked by people; the same can be said of something *dormidero*, that it is not just something that can trigger sleep, but more strongly something that necessarily will make people fall asleep if there are facilitating circumstances. Something *perecedero* 'perishable' is not something that can perish, but rather something that tends to perish or get spoiled when there are facilitating circumstances, such as nobody keeping it in the fridge. Something *vol-ndero* is not just something that can fly, but something whose internal properties necessarily make it fly or act as if flying when there are facilitating circumstances – like the blowing wind for a flag, or a threat for an animal. Something *crecedero* is something that tends to grow due to its internal properties, and something *venidero* is not just something that can come or happen, but something that one expects will necessarily come or happen if the facilitating circumstances are in place.

The case of *durable* / *duradero* and *perdurable* should also be viewed from this perspective: what is crucial in what they denote is not that something can last, but that something is expected to last necessarily in the presence of facilitating circumstances. *Una paz duradera* 'a lasting peace' is not just a peace that in principle can last, but a peace that has to be designed in a way that makes it expected to last provided the facilitating circumstances are in place. If the peace can in principle last, but it does not last when there are no particular conflicts, it would feel wrong to say that the peace was *duradera* just because in principle it could have lasted. Contrast this with a true modal adjective like *imitable* 'imitate-BLE, imitable': if nobody chooses to imitate something imitable, we do not feel that this is a reason to say that the entity is not really imitable; the same goes for an obligative adjective like *pagadero* 'pay-DERO, payable': if nobody pays something payable even when there are facilitating circumstances, the thing is still *pagadera*. This condition is typical of dispositional adjectives, as we will see: even if almost anything can be broken, something is not *quebradizo* 'break-DIZO, fragile' if it does not break when someone applies to it a reasonable amount of force.

Given that all these active adjectives entail that there is the expectation that the event necessarily will happen if there are facilitating circumstances, they are considered dispositionals rather than modals. The conclusion is that passive readings are necessary for modal adjectives, but not for the suffixes *-ble* and *-dero*, simply because they are not just restricted to modal readings.

### 3.3 Argument structure

It has also been repeatedly noted that *-ble* adjectives allow the expression of some arguments of the base verb: prepositional arguments (33a–c), indirect objects (33d–e) and agents introduced by prepositional phrases (33f–h). The following examples are taken from Oltra-Massuet (2014: 49–55, 80–81).

- (33) a. relacionable con el caso  
relate-BLE with the case  
'relatable to the case'
- b. adaptable a las necesidades de la empresa  
adapt-BLE to the needs of the company  
'adaptable to the needs of the company'
- c. separable de otras formas de conocimiento  
separate-BLE of other forms of knowledge  
'separable from other knowledge forms'
- d. notificable a la OMS  
notify-BLE to the WHO  
'notifiable to the WHO'
- e. mostrable a un experto  
show-BLE to an expert  
'showable to an expert'
- f. retorna-ble por el interesado  
return-BLE by the interested.party  
'returnable by the interested party'
- g. moldea-ble por el usuario  
mold-BLE by the user  
'moldable by the user'
- h. adaptable al cine por un buen guionista  
adapt-BLE to the cinema by a good scriptwriter  
'adaptable to the screen by a good scriptwriter'

With respect to the expression of arguments, two observations are to be made. The first one refers to the alleged impossibility of expressing arguments when the adjective is negated by a prefix (Fabb 1984; Varela 1990b; Gràcia 1995; Fábregas 2005; Oltra-Massuet 2014); this apparent ban is illustrated for English in (34).

(34) \*a toy unbreakable into smaller pieces

The constraint is allegedly related to an increase in the ‘adjectivity’ of the structure: negation inhibits the event, and therefore it would be more difficult to view the base as denoting a process or action that involves participants. It is important to note, however, that the argument that is ungrammatical expresses the result state after the culmination of the breaking event; if the event is inhibited here, it should not be entirely surprising that it is difficult to express the result.

However, it seems, against the general claim, that it is not impossible for negative *-ble* adjectives to express arguments (cf. Gibert-Sotelo 2017). Oltra-Massuet (2014: 59) provides the following example as ungrammatical. The judgement of the native speakers consulted – including myself – are not as clear-cut as the star suggests in her original description.

(35) una solución in-adapta-ble a las necesidades de la empresa  
 a solution un-adapt-BLE to the needs of the company  
 ‘a solution that cannot be adapted to the needs of the company’

In fact, it is possible to find examples of precisely this type of structure through Google:

(36) Mijas nos dice que el cuestionario enviado es inadaptable a la  
*Mijas us tells that the questionnaire sent is un-adapt-BLE to the*  
 realidad urbanística del municipio  
*reality urban of.the municipality*  
 ‘Mijas tells us that the sent questionnaire cannot be adapted to the town-planning reality of the municipality’

Beyond this, we have documented other examples where the negation is not at odds with the expression of different arguments. (37) presents a few cases with prepositional arguments.

(37) a. Una tecnología suficientemente avanzada es in-distingui-ble de  
*a technology enough advanced is un-distinguish-BLE from*  
 la magia.  
*the magic*  
 ‘A technology that is advanced enough is indistinguishable from magic’  
 b. [un] spa in-compara-ble a ninguno.  
 a spa un-compare-BLE to none  
 ‘[a] spa that cannot be compared to any other’

There are also cases involving a dative argument.

- (38) a. es intransferible a un tercero  
is un-transfer-BLE to a third party  
'It cannot be transferred to a third party'
- b. resulta además *intrasladable* a otras instancias  
turns.out also un-transfer-BLE to other instances  
'It turns out also to be not transferable to other instances'
- c. tiene imagen personal de confianza *intraspasable* a su gabinete.  
has image personal of confidence un-transfer-BLE to her cabinet  
'She has a personal image of confidence that cannot be extended to her cabinet'

Oltra-Massuet (2014: 61) herself identifies some cases with an agent introduced by a PP.

- (39) a. una maniobra política i-rrealiza-ble por un juez  
a maneuver political un-realise-BLE by a judge  
'a political maneuver that cannot be realised by a judge'
- b. un disparo im-para-ble por el portero  
a shot un-stop-BLE by the goalkeeper  
'a shot that cannot be stopped by the goalkeeper'

Thus, there seems to be nothing syntactic that in principle makes the expression of arguments incompatible with the negation of the modal adjective, at least in Spanish. For Spanish one could discuss whether negating the possibility component might have an effect in conceptualising the event as less compatible with an interpretation where it involves specific arguments, or perhaps whether negating the possibility makes it less informative to name specific participants in an event that, anyways, has been claimed to be impossible. In any case, the effect, to the extent that it exists, is at best a tendency that does not block the syntactic expression of arguments.

A second aspect of argument realisation in modal adjectives is the non-specificity preference observed in part of the literature. Gràcia (1992: 166) notes that the example in (40a), from De Miguel (1986), is judged as marginal by native Spanish speakers, and notes that the expression of the agent is better when it has a non-specific interpretation, as in (40b).

- (40) a. (\*)Pedro es supera-ble por Juan.  
Pedro is surpass-BLE by Juan  
'Pedro can be surpassed by Juan'

- b. (?)Pedro es supera-ble por cualquiera que haya obtenido el  
*Pedro is surpass-BLE by anyone that has obtained the*  
 Graduado Escolar.  
*graduate school*  
 ‘Pedro can be surpassed by anyone with a primary school certificate’

The most natural examples of expressed agents with modal adjectives indeed include nominal expressions that can be interpreted as generic or non-specific: *por un tercero* ‘by a third party’, *por un experto* ‘by any expert’, *por guionistas bien entrenados* ‘by well-trained scriptwriters’, *por la parte interesada* ‘by the interested party (whatever this might be)’, and so on.

Oltra-Massuet (2014: 82–86) identifies this property of agent arguments, even though she does notice a few apparent counterexamples, such as the one in (41).

- (41) una novela adaptable al cine por Pedro Almodóvar  
 a novel adapt-BLE to.the cinema by Pedro Almodóvar  
 ‘a novel that can be adapted to the screen by Pedro Almodóvar’

Even though here the agent is expressed as a proper name, Oltra-Massuet points out that it refers to a well-known figure with a recognisable style in his artistic production; (41) does not mean literally that the only person who can adapt the novel is Almodóvar, but rather that someone would be able to do it provided his or her style is close enough to Almodóvar’s. In this sense the interpretation would also be generic: anyone with Almodóvar’s style.

However, this specificity requirement is restricted to agents, and does not extend to prepositional arguments (cf. for instance 31a, 31b above), or to datives (contra Oltra-Massuet 2014: 123). A quick search in Google shows the following nominal expressions as the indirect object of the adjective *notificable* ‘notifiable’: *a la OMS* ‘to the WHO’, *a la CNMC* ‘to the National Committee for Markets and Competence’, *a la Organización Mundial de Sanidad Animal* ‘to the World Association of Animal Health’ and *a Google* ‘to Google’. Even though these nouns express organisations composed of more than one participant, they are specific entities that are identifiable and which, as far as we know, cannot be substituted by others that perform the same function as them.



### 3.4 Aspectual modification

It is also possible to find aspectual modifiers of the event in combination with some modal adjectives. The following examples come again from Oltra-Massuet (2014: 55–59), who argues after Bosque (1999) that the adjectives in *-ble* that allow this kind of modification contain verbal projections which those that disallow it lack (we will come back to this distinction in §4.1 below).

- (42) a. contratos renovables cada año  
contracts renew-BLE each year  
'contracts that can be renewed each year'
- b. empréstito [...] amortizable progresivamente  
loan redeem-BLE progressively  
'loan that can be redeemed progressively'
- c. un trabajo modificable en una hora  
a work modify-BLE in one hour  
'a paper that can be modified in one hour'
- d. actividades realizables durante horas  
activities realise-BLE for hours  
'activities that can be realised for hours'

Despite the claim in part of the literature, negated modal adjectives can also allow aspectual modification (cf. Gibert Sotelo 2017: 223 and folls.), as the following example attested in Google shows.

- (43) Un ideal es un estado o proceso inalcanzable en un tiempo/espacio  
an ideal is a state or process un-reach-BLE in a time  
dados  
/ space given  
'An ideal is a state or process that cannot be reached in a given time / space'.

### 3.5 Potentiality and obligation

Another classic question in the study of modal adjectives is the distinction between potential readings and obligation readings. Val Álvaro (1981: 193–196) notes that some formations do not get their actual interpretation with a paraphrase involving a possibility modal, a point noted in virtually all the empirical and analytical studies of the suffix (Lyons 1977: 528–534; De Miguel 1986: 162; Rainer 1993, 1999: 4610). For the authors that distinguish between the two classes, the obligation reading of *-ble* involves a paraphrase involving *merecer* 'deserve'. (44) is a non-exhaustive list of these adjectives in *-ble*.

- (44) aborreci-ble ‘despise-BLE, despicable’, admira-ble ‘admire-BLE, admirable’, censura-ble ‘censor-BLE’, deplora-ble ‘deplore-BLE’, desprecia-ble ‘despise-BLE, despicable’, elogia-ble ‘praise-BLE, praiseworthy’, envidia-ble ‘envy-BLE, enviable’, imponi-ble ‘impose-BLE, taxable’, lamenta-ble ‘regret-BLE, regrettable’, loa-ble ‘praise-BLE, laudable’, notifica-ble ‘notify-BLE, that must be notified’, recomienda-ble ‘recommend-BLE, that deserves to be recommended’, reproba-ble ‘disapprove-BLE, reprehensible’, reprocha-ble ‘reproach-BLE, blameworthy’, respeta-ble ‘respect-BLE, respectable’, temi-ble ‘fear-BLE, fearsome’, venera-ble ‘venerate-BLE, venerable’

Most of the literature agrees that this type of adjective cannot be fully explained by the structure underlying it; in other words, the structure of obligation modal adjectives is not necessarily different from the structure of potential adjectives. Rainer (1999) is an example of an author who highlights that the verbal bases that produce these interpretations are generally related to the vocabulary of moral codes and legislations: they tend to express the moral evaluation of something (*loar* ‘praise’, *condenar* ‘condemn’, *censurar* ‘censor’...) or involve activities that are the effect of legal rules (*pagar* ‘pay’, *imponer* ‘impose’, *notificar* ‘to inform an authority’). Oltra-Massuet (2014) does propose that there is a structural difference, arguing that the obligation meaning is a lexicalised interpretation that becomes possible because the structure of the verbal base is reduced with respect to the more productive potential value. She notes that these adjectives reject modification and cannot express agents or instruments (45).

- (45) a. \*deplorable por cualquiera  
regrettable by anyone  
b. \*deplorable cada dos años  
regrettable each two years  
c. \*deplorable con una carta  
regrettable with a letter  
d. \*deplorable con facilidad  
regrettable with ease

This is true for almost every member of the list in (44), but there are a few counterexamples which suggest that the obligation reading does not always involve absence of verbal structure. For instance, (46a) is a case of an obligation adjective combined with an agent; above we have seen instances of *notificable* ‘that should be notified’ in combination with indirect objects. (46b) shows this adjective in combination with an instrument.

- (46) a. Su sentido de la justicia [...] era elogiable por cualquiera.  
 her sense of the justice was praisable by anyone  
 ‘Her sense of justice deserved praise by anyone’  
 b. una enfermedad notificable por escrito  
 an illness notifiable by written  
 ‘an illness that should be notified in the written form’

Beyond this, the alternation between potential and obligation interpretations is affected by factors that are not obviously structural, and are more amenable to a conceptual semantic interpretation. Consider (47), where the adjective that contains a negative prefix prefers an obligation reading, something that can be viewed as a semantic effect: it is natural to move from the statement that something cannot be postponed to the statement that it should not be postponed.

- (47) a. aplaza-ble ‘postpone-BLE, that can be postponed’ / in-aplaza-ble  
 ‘un-postpone-BLE, that should not be postponed’  
 b. tolera-ble ‘tolerate-BLE, that can be tolerated’ / in-tolera-ble  
 ‘un-tolerate-BLE, that should not be tolerated’

This is not systematic however; if the base verb involves reproaching something, the preference goes in the opposite direction: if something should not be reproached, it is easy to infer that it cannot be reproached.

- (48) reprocha-ble ‘reproach-BLE, that must be reproached’ / i-rreprocha-ble  
 ‘un-reproach-BLE, that cannot be reproached’

The wider context, in fact, can determine the reading. In the context of paying, we know that making reference to installments – as opposed to paying the whole quantity in one go – is something that allows a particular way of paying, and because of this (49a) is interpreted as a possibility. The same adjective is interpreted as expressing an obligation in (49b) because it refers to a tax that is paid to the city council.

- (49) a. paga-dero a plazos  
 pay-DERO in installments  
 ‘that can be paid in installments’  
 b. un impuesto paga-dero al ayuntamiento  
 a tax pay-DERO to the city.council  
 ‘a tax that must be paid to the city council’

Finally, even the perception that one speaker has of wider social rules can affect the interpretation. (50) can be interpreted as expressing a possibility, but if one’s view of the social norms and standards is that a man of the right age should marry, it is natural to take it as expressing an obligation.

- (50) un hombre casa-dero  
 a man marry-DERO  
 ‘a man that can / should be married’

### 3.6 Other properties

Let us finish this descriptive section by reviewing a few other properties of modal adjectives.

First of all, *-ble* adjectives are always Individual Level predicates in the sense of Carlson (1977): they express characteristic properties of the individual, not of a temporal or locative slice of it, and because of that they systematically combine with the copula *ser* (unless the adjective is itself extremely lexicalised):

- (51) {*ser* / \**estar*} {*comi-ble* ‘eat-able’ / *deplora-ble* ‘regrett-able’ / *paga-dero* ‘pay-able’...}

In the case of *-ble*, another relatively well-discussed property is that some bases seem to be nominal (Aronoff 1976; Fabb 1984; Anderson 1992; Val Álvaro 1981: 191–197; DiSciullo 1997; Oltra-Massuet 2014: 253–303). In such cases, the adjective contains a theme vowel that is typically *-a-*, but there is no related verb. For instance, the form *alcald-a-ble* ‘major-able, that can become a major’ exists even though there is no verb \**alcaldar* meaning ‘become a major’ or something along these lines. A relatively systematic class is the one where the base noun expresses a social role, typically but not exclusively related to politics.

- (52) *alcald-a-ble* ‘major-A-BLE, that can become a major’, *canonj-i-ble* ‘sinecure-I-BLE, that can receive a canonry’, *ministr-a-ble* ‘minister-A-BLE, that can become a minister’, *obisp-a-ble* ‘bishop-A-BLE, that can become a bishop’, *pap-a-ble* ‘Pope-A-BLE, that can become the Pope’, *presidenci-a-ble* ‘president-A-BLE, that can become the president’, *rector-a-ble* ‘rector-A-BLE, that can become rector’, *campeon-a-ble* ‘champion-A-BLE, that can become a champion’, *profesor-a-ble* ‘teacher-A-BLE, that can become a teacher’

One could discuss whether *amigable* ‘friendly’ should be treated accordingly as meaning ‘that can become a friend (*amigo*)’, given the lack of the verb *amigar* ‘to befriend’ for most speakers. Similarly, it is possible that *sociable* ‘sociable’ should be interpreted as ‘that can become a buddy (*socio*)’.

This class has received some attention in the literature: it has been highlighted that these nouns express social roles that one obtains by an external entity that assigns it. One needs others to become major, minister or Pope. In this sense, the nominal formations in (52) meet the relevant requisites for modal adjectives with

*-ble*: there is an external entity that causes the change of status, and obtaining the status is in itself a change that one undergoes passively. For this reason, adjectives such as *\*viej-a-ble* (from *viejo* ‘old man’) are excluded given that the change they represent is internally caused.

What has not been discussed as much is that other less systematic forms also exist, such as those in (53), some of which Val Álvaro (1981: 191) lists.

- (53) *bonanc-i-ble* ‘fair.weather-I-BLE, mild’, *salud-a-ble* ‘health-A-BLE, healthy’, *favor-a-ble* ‘favour-A-BLE, favorable’, *honor-a-ble* ‘honour-A-BLE, honorable’, *manu-a-ble* ‘hand-A-BLE, that can be done by hand’, *vi-a-ble* ‘track-A-BLE, viable’

This class is not homogeneous. Even though they do not denote social roles, the adjectives *honorable* ‘honorable’, *manuable* and *viable* ‘viable’ are interpreted as modal adjectives. This perhaps relates to the intuition that the nouns involved in their construction involve manipulation or control by an external causer: honour, like a social role, has to be licensed by society; hands are controlled by someone, and a track is an instrument that is used by an external entity. Indirectly, through the conceptual semantics of the noun, these bases satisfy the requirement of modal adjectives that the subjects should be interpreted as the entities that suffer or undergo a process controlled by an external causer.

The rest of the adjectives seem to be dispositional: something *saludable* ‘healthy’ is something that tends to give health to others; weather that is *bonancible* ‘mild’ is weather that tends to behave in a particular way, and something that is *favorable* is something that tends to go in favour of whatever it is applied to. In each of these cases, the interpretation of the subject is active in the sense that it triggers an effect on others, rather than undergoing it.

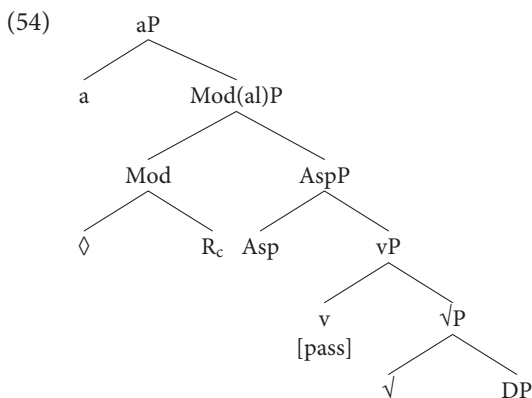
We finish here the empirical description of modal adjectives; in what follows we will use this background to present an analysis proposal.

#### 4. Modal adjectives: Analysis

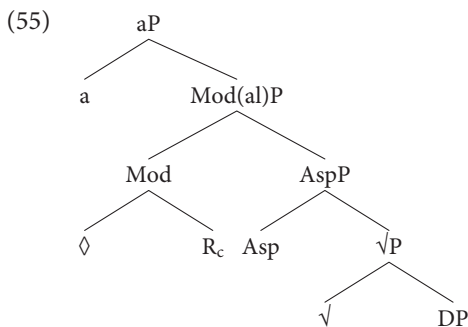
We will now start with the analysis, but first we will provide a short overview of the most developed theory about *-ble* adjectives in Spanish, which is Oltra-Massuet’s (2014). The reason is that Oltra-Massuet proposes the presence of a modal head in these adjectives, something that is incompatible with our proposal: we will see what reasons this author has to propose such head, and then show how our analysis accounts for them. Oltra-Massuet’s analysis is framed within Distributed Morphology (Halle & Marantz 1993), and leaving technical details of the specific theory chosen

aside, it involves three main components: (i) there are two classes of deverbal *-ble* adjectives, which differ with respect to whether the base is projected as a verb or as a category-less root; (ii) the adjective always contains projections for aspect and modal interpretation; (iii) when present, the verbal categoriser is passive and does not project its external argument.

The structure in (54) represents the configuration that produces the more productive and semantically predictable potential adjectives in *-ble* (so-called ‘high *-ble* adjectives’). The root is mapped into a state through Asp. The state is modalised by Mod, and finally the whole structure is categorised as an adjective.



(55) presents the structure for the shorter *-ble* adjectives (‘low *-ble* adjectives’): the minimal difference is that here the verbal categoriser is missing.



This low *-ble* structure is associated to adjectives with unexpected meanings, such as *ama-ble* ‘love-BLE, gentle’ (not ‘lovable’) or *proba-ble* ‘prove-BLE, probable’ (not ‘that can be proven’). Within Distributed Morphology (see specifically Marantz 1999; Arad 2003, 2005), the presence of an overt categoriser is associated with compositional meanings. The categoriser defines a domain where the root is assigned a

specific meaning that must be kept in the rest of the derivation, so the whole adjective gets a compositional interpretation. When the categoriser is missing, the root can be assigned a special meaning in the context of the adjectival categoriser *-ble*.

Given the absence of a verb, this structure is assumed to be the one that also produces forms where the base cannot be identified with an independent stem – either because there was a verb that got lost or because the base used got lost, as in *afa-ble* ‘affable’, *pota-ble* ‘potable’, *terri-ble* ‘terrible’ or *posible* ‘possible’.

Any adjective whose base contains an overt verbaliser such as *-iza(r)* ‘-ize’ would necessarily belong to the structure with a verb, on the assumption that the verbaliser occupies the *v* position. Due to this, Oltra-Massuet (2014) analyses alternations such as those between *toler-at(e)-able* and *toler-able* (Aronoff 1976: 121–129), where the first contains a verbaliser that the second lacks, as corresponding to the structures in (54) and (55), respectively. See also Nevins (2002) and Volpe (2005) on this point.

Our immediate task is to see how much of Oltra-Massuet’s analysis fits with the theoretical boundaries assumed in this article, and with the empirical facts noted. Luckily, Oltra-Massuet is extremely explicit in the role that each one of the projections has in the structure.

Given our framework, the structure of *-ble* cannot have aspectual and modal projections, because these quantify over temporal objects and worlds, respectively, and therefore they would belong to the situation domain, not the event essence domain. In (54–55), the role of the aspectual projection is to create a resultant state out of a prior event, something that in Oltra-Massuet’s framework is necessary because the event argument – Davidsonian in nature – is equipped with time and world parameters, and it must become a non-episodic state before it can be reinterpreted as a property. We will return to the possible presence of AspP in the structure, but note that this move is unnecessary in our framework, because the verbal event is already ‘stative’ in the relevant sense that it does not contain information linking it to a specific running time.

The presence of the Modal Phrase requires a more developed discussion that will be undertaken in §4.1. Oltra-Massuet proposes that these adjectives contain a modal head defined as a possibility operator with a circumstantial restriction, whose role is to take the stative object created by Asp and modalise it. Finally, the adjectival head turns the modalised state into a property.

Much of this analysis can (and will) be kept in the analysis that we will defend here, sometimes just with modifications in labels. Like Oltra-Massuet (2014), we will assume that some higher head takes the verbal event and creates a property that can be predicated, however in our analysis this will already be obtained by PredP. We will also assume with her that the verbal structure, when present, is interpreted

as passive even if it does not literally correspond to a syntactically passive structure; we will just couch this intuition within Ramchand's (2008) framework. Finally, like her we will assume that the low *-ble* adjectives lack verbal structure. We will however differ from her in that we will claim that there is no need for an Asp and Mod structure, and in fact that having them present in the structure makes the wrong empirical and theoretical predictions. In the next section we will specifically discuss this point.

#### 4.1 Against AspP and ModP

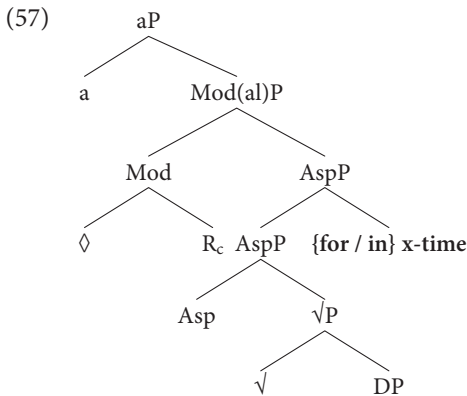
In the framework adopted here, containing aspect and mood would necessarily imply that the base of the modal adjective is a situation, not an event essence. We would then expect that, in the general case, deverbal adjectives have episodic interpretations. It is crucial, therefore, that in our account we obtain the adjective's reading without resorting to these projections.

Note, to begin with, that projecting Aspect in the structure produces internal problems with respect to the data. Oltra-Massuet (2014) proposes the two structures in (54–55) in part because of the different availability of aspectual modifiers with *-ble* adjectives. In the adjectives that correspond to the structure in (54) – the 'high *-ble*' structure – this modification is possible, as we have reviewed above (remember an example like *realizable en una hora* 'achievable in one hour'). In contrast, adverbial modification is excluded for those adjectives that correspond to the structure in (55) – the 'low *-ble*' adjectives.

- (56) a. \*un sonido perceptible durante una hora  
           a sound perceptible for one hour  
       b. \*proyectos permisibles cada año  
           projects permissible each year  
       c. \*limitaciones admisibles progresivamente  
           limitations admissible progressively

However, it is unclear how Oltra-Massuet's structure (55) can account for this fact, precisely because the structure is endowed with an aspectual projection. What bans a structure such as (57), where the aspectual modifier – which is compatible with states – adjoins to the aspectual projection? Either 'aspect' here does not mean aspect in its grammatical sense, but is just an operator that cancels the eventivity and adapts the structure to be modified by a modal operator, or one would also expect some form of aspectual modification with these low adjectives.





In contrast, if AspP is absent from the structure, we correctly account for the difference, provided that the aspectual modification that high *-ble* adjectives allow is licensed by the verbal structure, and not by an external aspectual head.

Note, in this respect, that Spanish provides overt evidence that *for*-phrases can modify the event or the situation. Consider the example (58).

- (58) Juan aguantaba la respiración durante dos minutos durante toda  
*Juan held the breathing for two minutes for all*  
*su adolescencia.*  
*his adolescence*  
 ‘Juan could hold his breath for two minutes during his whole adolescence’

The more internal *for*-phrase is used to describe a property of the event: specifically that the event essence described is one of ‘holding one’s breath for two minutes’. In contrast, the more external phrase is used to measure the situation that instantiates that event essence: the event essence describes the ability to hold one’s breath for two minutes, and that property is instantiated in a situation that covers the whole adolescence of the person.

With *Oltra-Massuet*, we will assume that when aspectual modification is present in the structure of modal adjectives, the modifiers depend on the verbal layer and not on the presence of an alleged aspectual head that corresponds to the situation domain. In other words: examples such as those in (42) – repeated here as (59) – include aspectual modifiers that describe the eventuality, and do not measure the situation instantiating the event, in part because there is none given the non-episodicity of the adjective.

- (59) a. contratos renovables cada año  
 contracts renew-BLE each year  
 ‘contracts that can be renewed each year’

- b. empréstito [...] amortizable progresivamente  
loan redeem-BLE progressively  
'loan that can be redeemed progressively'
- c. un trabajo modificable en una hora  
a work modify-BLE in one hour  
'a paper that can be modified in one hour'
- d. actividades realizables durante horas  
activities realise-BLE for hours  
'activities that can be realised for hours'

Consider in particular modifiers such as 'each two years'. These modifiers have the same distributional semantics as the adjectives *diario* 'daily', *semanal* 'weekly' or *anual* 'yearly' that are analysed in Gehrke & McNally (2015) as modifiers of event kinds – again, remember that Ramchand's event essences are equivalent to what these authors define as event kinds.

Thus, positing an aspectual head in the structure of *-ble* adjectives makes unclear predictions with respect to aspectual modification.

What about the mood operator? Is it present? In the following paragraphs we will argue that it cannot be present either.

Oltra-Massuet's (2014: 121–127) evidence to posit the modal operator structure is twofold. First, she highlights that the agents licensed in the context of modal adjectives are not specific. Second, she notes that *-ble*-adjectives are one context where the subjunctive mood of relative clauses is licensed (60). Following Rivero (1971) and Leonetti (1999), the subjunctive mood of a relative clause is a sign that the nominal antecedent is interpreted as non-specific (61).

- (60) un libro traducible por un especialista que sea experto en la materia  
a book translatable by a specialist that is.sbj expert in the topic  
'a book translatable by a specialist with expertise in the subject matter' [O-M's 2014: 124, example 212b]
- (61) a. Vi a un chico que {era / \*fuera} chino.  
saw.1SG A a boy that was.IND / was.SBJ Chinese  
'I saw a boy that was Chinese'
- b. Busco cualquier chico que {sea / \*es} chino.  
search.1SG any boy that is.SBJ / is.IND Chinese  
'I am looking for any boy that is Chinese'

This author takes all these non-specificity properties as effects of the modal operator. Here we will argue that positing a modal operator is problematic.

First of all, what would the variable of the operator be in (55), where the verbal layers are missing? On the assumption that mood quantifies over worlds that

instantiate an event variable, the absence of an event in (55) should produce a Vacuous Quantification infraction, where an operator does not find an appropriate variable to bind. Remember that in this framework the root cannot carry the event variable, first because then it should license aspectual modification and second because the root is in principle category-neutral, so it cannot contain syntactically active information that is particular of verbs.

Second, while the requirement that the argument is not specific is empirically correct in the case of agentive arguments, we have seen above that it does not extend to dative arguments and arguments introduced by other prepositions. Why would it be the case that the operator only has scope over the agent, which incidentally is in this context also introduced by a prepositional phrase?

A piece that can help solve this puzzle is the behaviour of agents in other structures that involve passive ‘adjectives’. In this context, the so-called adjectival passive comes to mind. Consider the availability of agents in such structures (cf. Gehrke & Sánchez Marco 2012; Gehrke 2015).

- (62) a. Este dibujo está producido por {un niño / ??este niño}.  
           this drawing is produced by a child / this child  
       b. Esta casa está habitada por {estudiantes / ??aquellos estudiantes}.  
           this house is inhabited by students / those students  
       c. Este cuadro está pintado por {Velázquez / ??Pepe}.  
           this painting is painted by Velázquez / Pepe}

What we see is that the availability of agents in adjectival passives is also sensitive to the non-specificity that we see in modal adjectives. The nouns tend to be interpreted as expressing kinds of objects (‘a type of person’), bare nouns are preferred and in general strongly referential, specific nouns are rejected. In the case of proper names, again the availability depends on the name referring to an entity that has a recognisable style; on the assumption that the Pepe in (62c) is not someone we identify as having a particular style that the hearer also recognises, the sentence is degraded – compare this with the Almodóvar example above.

In these structures there is no obvious semantic motivation for positing a modal operator, and still non-specific agents are strongly preferred. As in modal adjectives, the requisite does not apply to other arguments.

- (63) Las facturas ya están entregadas a la Universidad.  
       the bills already are delivered to the University

Gehrke (2015) provides an explanation of why agents behave in this way in adjectival passives: she treats the participles in such structures as event kinds rather than specific instantiations in particular times and worlds. This fits completely with our account of modal adjectives: given their non-episodic nature – derived from the

base lacking any material from the situation domain, they also prefer non-specific agents. We will return to this property in Chapter 9, §4.5, where we will follow García-Pardo (2017) in trying to state this restriction in syntactic terms.

Admittedly, what adjectival passives are unable to do – in contrast to modal adjectives – is to license the subjunctive in a relative clause modifying the agent. Speakers consider (64) degraded:

- (64) <sup>??</sup>El cuadro está pintado por un niño que tenga menos de seis años.  
 the painting is painted by a child that has.SBJ less than six years  
 ‘The painting is painted by a child younger than six’

However, it is not the case that the presence of the subjunctive in modal adjectives is compulsory. Oltra-Massuet (2014: 124) notices that the indicative is possible, and – unlike what happens in other structures – does not force the specific reading of the antecedent.

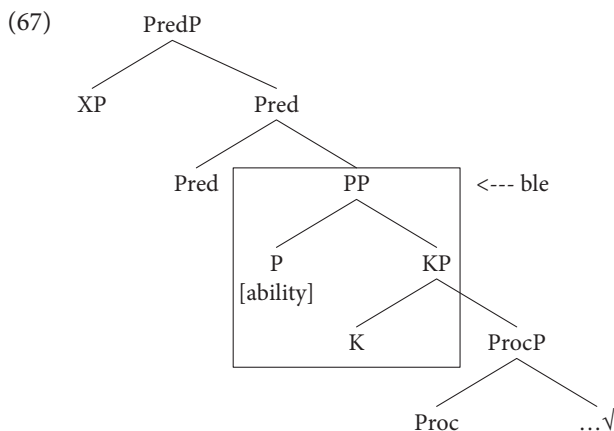
- (65) un libro traducible por un especialista que es experto en la materia  
 a book translatable by a specialist that is.IND expert on the topic  
 ‘a book translatable by a specialist with expertise on the subject matter’

Oltra-Massuet (2014) is right in the observation that the subjunctive is licensed in this context, but if it is triggered by an operator the question is why the indicative is allowed even in the non-specific reading, something that otherwise is not possible (cf. 66, where the indicative implies that the person is looking for a specific book). While the specificity constraint is stronger in modal adjectives, and might relate to the licensing of the subjunctive, the pattern is not what one expects of a modal operator.

- (66) Puedes usar un libro que habla de esto.  
 can.2SG use a book that talks.IND of this  
 ‘You can use a [particular] book [I know exists] that discusses this’

## 4.2 Potentiality and passive construals: Connection with middles

The proposal that we will make is represented in (67) for the high *-ble*-adjectives, with a modal interpretation. The core idea is that the passive-like interpretation is due to the verb projecting only up to ProcP, without InitP – the position where agents, causers and instrumental subjects are introduced. Non-episodicity derives from the verbal layer containing only verbal material that defines an event essence (E). Whatever relates to the modal interpretation is expressed by the P layer, which specifies the relation R introduced by KP as ‘ability’. As the adjective is predicative, it is dominated by a PredP.



The semantics of *-ble*, then, is the one in (68).

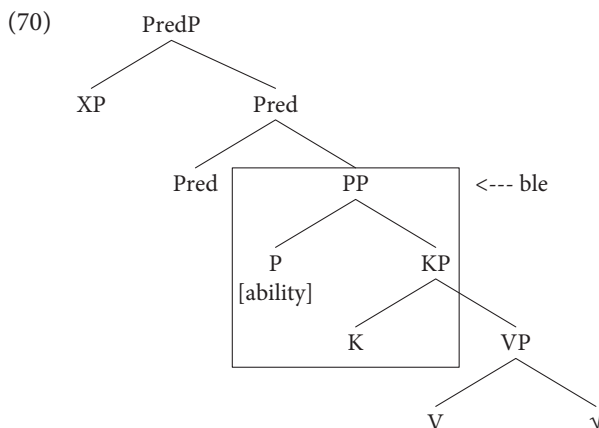
$$(68) \quad [[ble]] = \lambda P \lambda y \lambda E \lambda R [P(E) \ \& \ R\text{-Ability}(y, E)]$$

The adjective expresses a relation of ability between an entity and an event essence *E*. If the event essence is ‘passive’, then the ability is to be understood as the ability to undergo a particular event. Predicated from a subject, this is naturally interpreted as entailing that the subject can be the patient or theme in the eventuality; lacking an *InitP*, the subject is not interpreted as producing that event in any characteristic way. (69) shows the semantics of ‘This book is readable’.

- (69) a. Este libro es leíble.  
           this book is read-BLE  
 b.  $\exists R \exists E [\text{read}'(E) \ \& \ R\text{-Ability}(\text{this book}, E)]$

This ability semantics is associated to two types of quale: those that in the nominal domain trigger a reading where an eventuality related to the noun is extracted, the agentive quale and the telic quale. In the modal interpretation, the ability is interpreted as turning the object into something that can be used for the event denoted by the base (telic quale), while in the dispositional interpretation the object is interpreted as one with a disposition to initiate that eventuality (agentive quale). Suffixes such as *-ble* and *-dero* cannot be related to Ps that specify the formal or the constitutive quale.

The short structure related to *-ble* lacks argument structure and lexical aspect – and for this reason it cannot express either, but the base is defined as a lexical verb. The VP layer introduces the Event essence *E*.



We claim, therefore, that in order to denote the possibility semantics two ingredients suffice: (i) that the verbal base does not project *InitP* and (ii) that the value for the affix is an ability relation related to the telic or agentive qualia. Put in informal terms, being able to participate in a process as an entity undergoing a process – as opposed to the causer – is minimally interpreted as making that process possible, without stating that there is any natural tendency on the part of the subject to trigger that process. We expect, therefore, a deeper connection between possibility and passive interpretations of the verb.

The fact is that in Spanish a solid empirical generalisation is that, in the absence of overt expressions of modal operators – such as *poder* ‘can’, the possibility reading of a verb correlates with a passive interpretation of the event. The first structure that illustrates this is middle voice structures involving verbs. Mendikoetxea (1999) notes that the middle reading is restricted to passive constructions (Oltra-Massuet 2014 also points out this connection). Note that the passive (71a) and (71c) allow an interpretation where the subject, by virtue of its internal properties, can or must participate in a specific event: the shirts can or must be washed in cold water, the book can be read with ease. In contrast, the active (71b) and (71d) disallow readings along the lines of ‘Juan, by its internal properties, can wash these shirts in cold water’: they are interpreted as habitual statements.

- (71) a. Estas camisetas se lavan en agua fría.  
 these shirts SE wash.3PL in water cold  
 ‘These shirts should / can be washed in cold water’
- b. #Juan lava estas camisetas en agua fría.  
 Juan washes these shirts in water cold  
 ‘Juan normally washes these shirts in cold water’

- c. Este tipo de libro se lee con facilidad.  
 this type of book SE reads with ease  
 ‘This type of book can be read with ease’
- d. #Pedro lee este tipo de libro con facilidad.  
 Pedro reads this type of book with ease  
 ‘Pedro normally reads this type of book with ease’

Another relevant structure is the tough-construction; like in modal *-ble*-adjectives, in many of these structures the verb is interpreted as passive even though the morphological shape is active. Again, the modal interpretation is associated to passive readings.

- (72) a. Este libro es fácil de leer.  
 this book is easy to read  
 ‘This book can be read easily’
- b. Este plato es agradable de comer.  
 this dish is nice to eat  
 ‘This dish can be eaten nicely’
- c. Este camino es rápido de subir.  
 this road is quick to climb  
 ‘This road can be climbed quickly’

Interestingly, all these structures build predicates that, like *-ble*-adjectives, are Individual Level Predicates. Like in other Individual Level predications (Gallego & Uriagereka 2016), in middle statements the subject cannot be postponed to the verb in order to produce a thetic judgement (Kuroda 1972). (73a) has the Stage Level copula, and it allows the thetic ordering; (73b), with the Individual Level copula, rejects the thetic ordering.

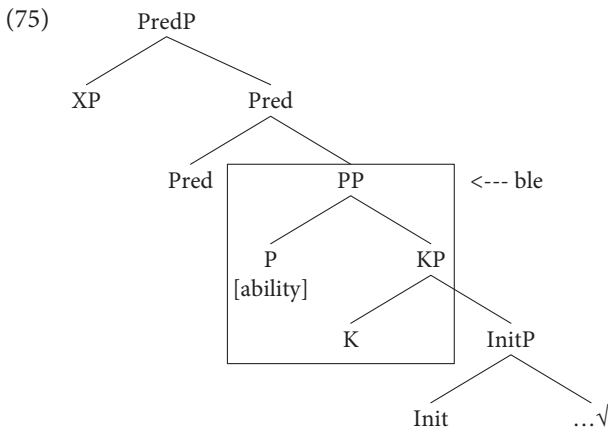
- (73) a. Está enfermo el hombre.  
 is.SL sick the man  
 ‘The man is sick’
- b. \*Es alto el hombre.  
 is.IL tall the man  
 ‘The man is tall’

The middle structure behaves like (73b). (74) can be interpreted as a habitual passive, but not as a middle where the shirts can participate in the event due to their internal properties.

- (74) #Se lavan en agua fría estas camisas.  
 SE wash.3PL in water cold these shirts  
 Intended: ‘These shirts can / should be washed in cold water’

Thus, the connection between passive readings and possibility is not just exclusive to *-ble*-structures, but is a more general property of predications that involve verbal structures and trigger Individual Level interpretations. We will not undertake an analysis of tough-constructions and middles along these lines in this work, and we will not jump to the conclusion that in these cases there is no modal operator without an in-depth examination that we have not conducted at this point. However, the existence of this pattern of data provides evidence that it is plausible to think that the ability to be a passive part of an eventuality is enough to account for the interpretation of modal adjectives in *-ble*.

The general idea that emerges from here is that in the deverbal adjective domain modality is passive, habituality is active and, as we will see in Chapter 8, §1, dispositionality lies somewhere in between. There are instances where dispositionality relates to an active reading of the base and others where the reading is passive. However, with *-ble* adjectives, all readings are active – something that is in contrast with *-dizo*, as we will discuss. We propose to take this fact at face value and to propose that the relevant structure of adjectives such as *apeteci-ble* ‘appetising’ is the one in (75).



Remember that within Ramchand (2008) InitP is a stative projection that introduces the argument that causes, by its internal properties, an eventuality, without implications of volitionality or even conscious control. In this sense, stative verbs like *agradar* ‘please’ and *apetecer* ‘be appealing’, whose subject triggers a psychological state in an object, contain InitP.

The minimal difference here is that the projection heading the verbal domain is Init(iation) Phrase in this case, meaning that the ability is not one of undergoing the eventuality – thus making it possible – but the stronger interpretation where the subject has the ability to start the eventuality. Given that *-ble*-adjectives are



Individual Level, this property has to be interpreted as characteristic and typical of the individual. The combination of being able to trigger an eventuality and that ability being a characteristic property is naturally interpreted as a characteristic tendency or disposition to, in fact trigger, the event whenever the facilitating circumstances are in place. In other words: the characteristic ability to undergo an eventuality cannot be viewed as implying that the eventuality would necessarily be triggered even if there are facilitating circumstances, because whether the eventuality is triggered or not depends on an external causer which is not the subject in (75). However, when *InitP* is projected, the ability defined compositionally is the ability to initiate the eventuality, and this implies – if that ability is characteristic of the subject – that there is an expectation that the subject will indeed initiate the eventuality if there are facilitating circumstances.

It is helpful to compare this claim to what is possibly the free-form that is closest to the semantics we assign to *-ble* in the analysis, the adjective *capaz* (which, interestingly, translates as ‘able’ in English). Even though normative Spanish (see RAE & ASALE 2005: [*capaz*]2.) condemns its use with passive verbs, this use exists and it is restricted to a possibility reading:

- (76) Un plan de trabajo [...] capaz de ser desarrollado en un  
*a plan of work able to be developed in a period*  
 periodo constitucional.  
*constitutional*

‘A work plan that can be developed in the duration of a single constitutional period’

In combination with active verbs, in contrast, the adjective never has this possibility meaning, and instead it can have the standard ability reading (‘having the capacity to do something’), which depending on the context can easily be reinterpreted as a disposition towards starting the eventuality. In contrast with the more neutral use in (77), (78) does not just mean that Juan has the ability to do something crazy, but also that his character is such that we expect him to do something crazy if he is pushed too much – the facilitating circumstances.

- (77) Juan es capaz de hablar chino.  
 Juan is able to speak Chinese  
 ‘Juan is able to speak Chinese’
- (78) Ten cuidado con lo que haces; Juan es capaz de hacer  
 Have care with what do.2SG; Juan is able to do a  
 una locura.  
 madness  
 ‘Be careful with what you do: Juan might do something crazy’

Again, the possibility reading is impossible with the active form, and the dispositional reading is impossible in the passive one.

Our analysis, then, reduces to the following claims:

- a. the suffixes *-ble* and *-dero* are related to the telic and agentive qualia through an ability meaning
- b. the dispositional reading is produced when the eventuality is interpreted as active, which relates the meaning to the agentive quale
- c. these two affixes impose the additional restriction that the eventuality must be initiated by an external entity – that is, the initiator participant must be distinct from the one that undergoes the eventuality or acts as its patient.<sup>3</sup>

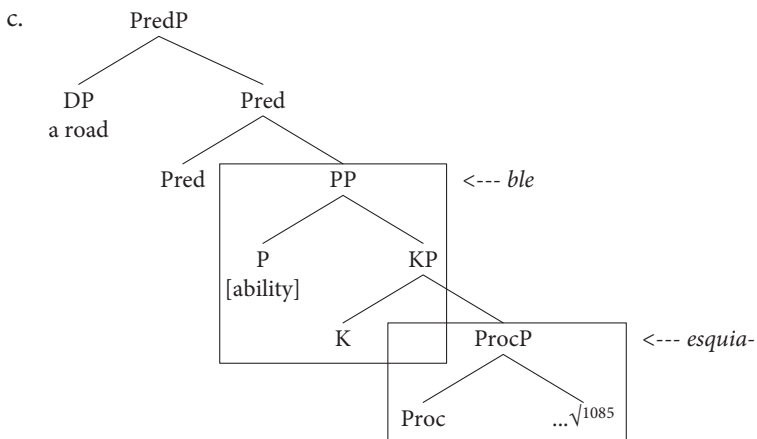
### 4.3 Deriving the other properties

In essence, our account differs from Ultra-Massuet's (2014) in what counts as the predicate within the construction. In the account that she proposes, the subject of the adjective is still introduced by the verbal structure, when present, and the ability meaning derives from the presence of an aspectual head in combination with a modal operator. In our account, by contrast, the predicate is the prepositional structure with its conceptual information. In other words, the proposed structure implies that the predicate that selects the subject of the adjective is the P+K structure, which we have just seen is comparable to *capaz* 'able'. Given that this is the predicate that introduces the form, we correctly expect that the formal requirements that the verb would impose on its arguments are not necessarily taken into account by the suffix when selecting its subject. Specifically, even if a verb like *esquiar* 'to ski' would project a locative argument by means of a preposition, the form (*esquia-*)*ble* can select it as a plain nominal. This explains why *-ble*-adjectives can take subjects that would be introduced as PPs by their verbs.

- (79) a. esquiar \*(por) un camino  
       ski by a road  
       b. un camino esquia-ble  
           a road ski-BLE  
           'a road that can be skied on'

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3. We will claim that the absence of this third restriction is what differentiates *-dizo* from these other two affixes; see §8.2.2.

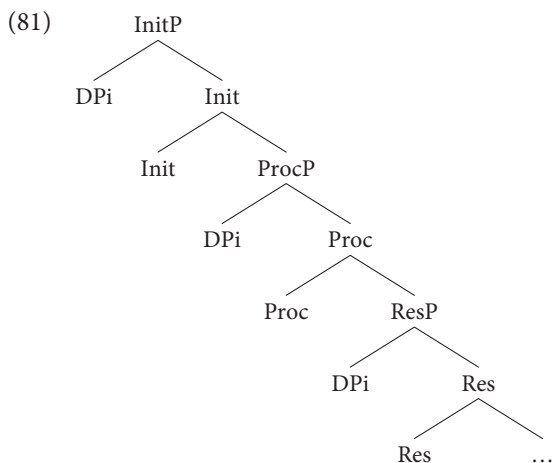


We have seen that the verbal base present in high *-ble* adjectives still has the capacity to introduce arguments. If the subject of the adjective is a predicate of the lexical P layer, then the question of why a structure like (80) is ungrammatical arises: here the same entity would be introduced first within the V structure and then again as the subject of the P structure.

- (80) \*una factura pagable (de) un impuesto  
 a bill payable of a tax

Our claim is that nothing syntactic bans this structure. The problem with (80) is semantic: namely, that the same ‘patient’ theta role would be associated to two different participants. The event structure (Proc) would assign it through normal means, and Pred would force the interpretation of its subject also as the patient of the whole eventuality. If the entity paid is the bill, then it cannot be that the tax is also the entity paid: the same theta role cannot be assigned to more than one participant. Like this, semantics blocks a structure that syntax could otherwise generate.

In this analysis, the fact that unaccusative verbs are generally excluded from the formation of *-ble*-adjectives still follows from the constraint on the formation of *-ble*-adjectives that requires them to have an external causer. Ramchand (2008) treats unaccusative verbs as the structure in (81).

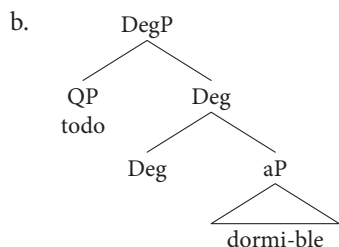


The central property that singles out unaccusative verbs is that they must be internally-caused events: notice that the arguments corresponding to the causing entity, the entity that undergoes the process and the entity that ends up in a result state refer to the same individual – they are coindexed.

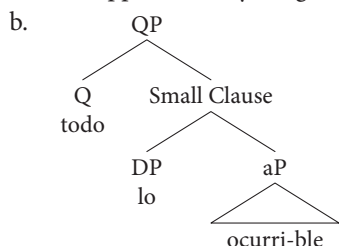
In order to get the modal reading, the subject should be related to an event denoting a process that is caused by an external entity: this condition is not satisfied by an unaccusative verb because the adjective's subject would also be the internal causer. In order to get a dispositional reading with *-ble*, the subject should be the external causer, meaning that either the subject of Proc or the subject of Res should be distinct from it. Again, this condition is not satisfied.

Remember that unaccusative verbs – and other verbs that do not relate to an external causer – can combine with *-ble* when the subject is not just one of the arguments of the verb, but an entity denoting a quantity or degree related to the event. (82) and (83) offer one example of each reading, with Ultra-Massuet's (2014: 184–185) proposed structures, which we will accept and just adapt to the technical assumptions made in this book.

- (82) a. Durmió todo lo dormi-ble. Degree  
 slept.3SG all the sleep-BLE  
 'He slept to the highest degree possible'

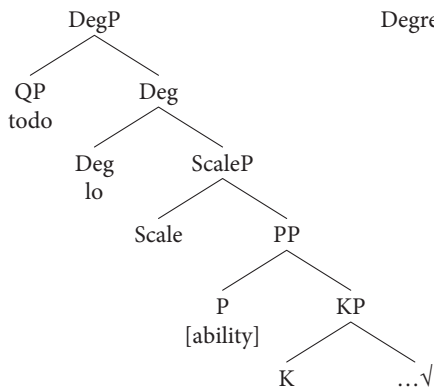


- (83) a. Ocurrió todo lo ocurri-ble. Quantity  
 happened all the happen-BLE  
 ‘It happened everything that could happen’

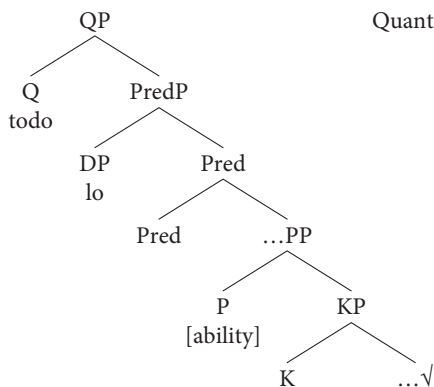


As the two structures clearly show, the quantity reading still involves a predication relation where the subject is an underspecified entity which is quantified by a Q operator; this argument corresponds to none of the arguments of the base verb. In contrast, the degree reading does not even involve predication in the proper sense: the possibility is not predicated of a degree, but rather the adjective denotes a scale of values where the quantifier selects the maximal degree. We find no empirical or theoretical reasons to reject these structures, and we limit ourselves to translating them to the primitives used in this monograph, as (84a) and (84b).

- (84) a. Degree



- b. Quantity



Note that the empirically strong requisite imposed by the modal reading of *-ble*, namely that the subject has to be distinct from the external causer, is satisfied in both cases: in (84a) vacuously because there is no predication, and in (84b) by virtue of the subject of PredP being distinct from any of the arguments related to the verb.

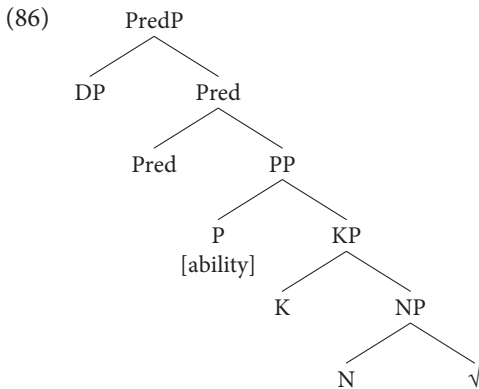
Let us end the discussion of *-ble* adjectives by undertaking the case of denominal *-ble*-formations such as *alcald-a-ble* ‘major-A-BLE, that can become a major’. These forms present the main puzzle that there is no corresponding verb related to them, even though there is a theme vowel present in them. Oltra-Massuet (2014) discusses only the first class of denominal adjectives in *-ble*, those that associate to nouns that express social roles, and suggests that they contain aspectual information in the light of data such as (85), where the noun directly combines with a tense or aspect adverbial.

- (85) a. el ahora alcalde  
 the now major  
 ‘the one that is major right now’
- b. el hasta ahora presidente  
 the until now president  
 ‘the one that has been president until now’
- c. el tantas veces ministro  
 the so.many times minister  
 ‘the one that has been minister so many times’
- d. el durante tantos años alcalde  
 the for so.many years major  
 ‘the one that has been major for so many years’

Her proposal is that these nouns are in fact adjectival in nature (Bosque 1989), and they combine with an aspectual head, which licenses the modifiers above.

However, we will not follow this proposal because the range of denominal *-ble* adjectives includes other formations that do not express social roles, such as *salud-a-ble* ‘healthy’; the noun *salud* ‘health’ rejects such modifiers (for instance, *\*su ahora salud* ‘his now health’, intending to mean ‘his current health state’). The licensing of aspectual information is a property that relates to the change of state reading, but not to the other interpretations, and therefore the presence of aspect cannot be the driving force behind denominal *ble*-structures.

A minimal structure for such adjectives would be the one in (86), where the ability reading relates the set of properties expressed by the base noun with the subject of predication.



Determining the specific interpretation of the adjective would depend on the kind of relation that conceptually is more likely to be established between the set of nominal properties and the subject. As Oltra-Massuet (2014) correctly notes, if the noun denotes a social role the change of state reading is the most natural ('that can become N') because Spanish licenses aspectual modifiers by these nouns; that is, at the very least these nouns express Stage Level properties that can be relativised to particular temporal slices of the subject.

Additionally, because *-ble* comes endowed with the strong constraint that the eventuality must be externally caused, nouns denoting social roles are particularly apt for this structure because they express sets of properties that a subject does not acquire by an internal process of change, but which must be licensed by external causers.

Some other nouns, in contrast, cannot get the 'become N' interpretation simply because the base nouns cannot be viewed as sets of properties that one can acquire by the action of external causers. This is the case of *salud* 'health', *bonanza* 'fair weather', *mano* 'hand', *honor* 'honour' and *favor* 'favour', none of which licenses aspectual modifiers. Whether the resulting adjectives receive a modal interpretation or not depends on how the ability relation is conceptualised relative to the meaning of the noun. Therefore, the rest of the interpretations are less systematic.

For instance, the interpretation 'that should or could receive N' is obtained with *honor* 'honour', possibly because – like social roles – honour has to be licensed by an external agent, but unlike them it cannot denote something that humans can become. Given that a *mano* 'hand' is not something that can be literally transferred or given, applying the ability semantics to this noun triggers a natural conceptual interpretation where there is an external entity that controls it and, therefore, the adjective implies that the subject can be operated using the hands.

In contrast, *favor* 'favour' and *salud* 'health' and *bonanza* 'fair weather' are interpreted as active. Unlike *honor* 'honour' or *mano* 'hand', these express sets of

properties that are conceived as conditions that facilitate (or complicate) other events and actions: mild weather or good health can facilitate the attainment of a goal. Plausibly, this is what makes it more informative to interpret the ability meaning not in terms of being able to experience these conditions, but as being able to create these conditions. This favours a dispositional reading where the subject of the adjective is interpreted as an entity which tends to create such conditions, rather than undergo them.

The proposal just sketched, however, has a particular problem: it does not in itself explain the presence of the theme vowel in structural terms, something that Ultra-Massuet (2014) is able to do in her structure. This author treats the theme vowel in these cases, and also in the short *-ble*-forms (87), as a morpheme related to the functional projection of Aspect, which we lack in our proposal for both types of adjective. (Note, however, that the nouns which lack any aspectual interpretation also carry a theme vowel in combination with *-ble*, which makes it less plausible that it is aspect that the theme vowel is marking in these denominal adjectives; see the discussion in §4.1 on why AspP is not expected in low *-ble* adjectives either).

- (87) percept-i-ble  
perceive-ThV-BLE

Our approach is essentially forced to treat the presence of the theme vowel as a lexical fact, in one way or another. It is perhaps not worth it to discuss the different alternatives, given that they all involve positing a brute force account of the presence of this morpheme. We could assume that the exponent materialised as /ble/ has a morphophonological licensing condition that requires it to be right-adjacent to a theme vowel. This condition would be licensed when the base is properly verbal. However, when there is no verbal structure, it would trigger the strictly morphophonological insertion of a theme vowel to its left.

It is perhaps illuminating to keep in mind that *-ble* is not the only affix that triggers this problem. There are a few denominal formations with *-dor* (Pascual & Sánchez 1992) where, crucially, there is evidence of a theme vowel between the root and the suffix even though the corresponding verb does not exist.

- (88) leñ-a-dor  
wood-A-DOR  
'lumberjack'

Whatever is happening here – be it lexical or structural – is not specific to modal adjectives, but is a more general property of word-formation processes that usually require verbs as their bases. At this point, what underlies the unexpected emergence of a theme vowel in such cases remains a mystery to me. Clearly, a general



investigation of the nature of theme vowels would have to be conducted in order to say something remotely interesting about the phenomenon, but this would take us away from the issues discussed in this book.

## 5. On the difference between *-dero* and *-ble*

The analysis that we propose for *-dero* is essentially the same one as for *-ble*, however in this case the suffix is not productive in contemporary Spanish. This makes it more difficult to identify the possible differences between the two suffixes, but we noted that in several cases the modal meaning that *-dero* adds to the base is not identical to the one codified by *-ble*. In some cases, the meaning adds an evaluation about the ease of performing the eventuality. Compare (89a) with (89b), and (89c) with (89d): the *-ble*-form just states that the event is possible, while *-dero* adds that it is easy.

- (89) a. *hace-dero*  
do-DERO  
'easy to do'
- b. *facti-ble*  
do-BLE  
'possible to do'
- c. *abri-dero*  
open-DERO  
'easy to open'
- d. *abri-ble*  
open-BLE  
'possible to open'

One could ask oneself whether this reflects a structural difference. However, the difference is not systematic, due to the existence of virtual synonyms such as *dura-dero* / *dura-ble*, both meaning 'lasting'.

Instead, we would simply treat the 'easiness' interpretation occasionally associated to *-dero* as a reflex of lexical specialisation under competition. As it is well-documented (Pascual & Sánchez 1992; Pharies 2002; Clavería 2004), the suffix *-dero* was preferred until the 14th Century for the formation of deverbal adjectives, and from the 15th Century onwards (perhaps due to the influence of Latin texts; Dworkin 2004) it was progressively substituted with *-ble*. During this substitution process, *-ble* substituted *-dero* in many adjectives (such as *creí-ble* / *cree-dero*, both meaning 'that can be believed' from *creer* 'believe' or *codicia-ble* / *codicia-dero*, 'that should be coveted', from *codiciar* 'covet'). One way in which the two forms could

coexist with the same base was, however, to assign slightly different interpretations to each one of the suffixes. This was solved – as one would expect – by assigning the special meaning to the suffix that had stopped being productive, *-dero*. *Duradero* is one rare exception where *-dero* survived as the general form, perhaps due to the frequency with which this adjective was used, and the *-ble* version has not been equally used.

Here we finish our account of modal adjectives. In the next chapter we will concentrate on the dispositional and the habitual formations.



## Qualifying deverbal adjectives II

### Dispositional and habitual adjectives

#### 1. Dispositional adjectives against habitual adjectives: Animacy

The notion of dispositionality is discussed much more often in the philosophical literature than in the linguistic one. Philosophers have discussed whether it is appropriate to conceive of causal relations in the world as determined by entities' natural tendencies to participate in specific events under facilitating circumstances, and whether the proper characterisation of a disposition is through the test that an object necessarily participates in an eventuality when the circumstances facilitate it (cf. among many others Blackburn 1990; Fine 1995; Ellis 2001; Bird 2007; Maudlin 2007; Fara 2008; Manley 2012; Hütteman 2013; Vetter 2015; Aimar 2019). Here we are interested not in the conditions in the world that identify the disposition of an object, but in the linguistic conditions that determine that a statement is dispositional. Despite the many different philosophical and logical proposals on how dispositionality is identified in the real world, we will adopt the definition in (1).

- (1) For an entity  $x$ ,  $x$  is predisposed to  $E$  if, in the presence of facilitating circumstances,  $x$  would necessarily  $E$

We have already seen that one way of arriving at that statement in grammar is by talking of the capacity to trigger an event, as opposed to the capacity to undergo an event. In this chapter we will see a second way of arriving at that statement, namely that the information contained in the PP layer directly refers to a tendency, as one possible relation between objects and event essences.

In this second case we in fact obtain contrasts with habitual statements, as we will see, typically in the form of animacy-related properties. The second notion that this chapter deals with, therefore, is habituality, a concept that – unlike dispositionality – has been extensively discussed in linguistics (see Carlson 2011 for an overview).

In order to see how we will differentiate between dispositionality and habituality in practice, consider the following scenario. Pedro is overweight in part due to his preference for eating fatty food. The doctor has advised him against eating chocolate, muffins and other high-carb delicacies. Every day he feels predisposed to

choose this type of food instead of fruit and vegetables when he goes to his office's cantina, but he is being rigorous with the diet and he never lets those temptations win out. In this scenario, Pedro has a disposition to eat fatty food, but through his willpower, he never eats fatty food. If we say that this situation goes on for three months, then we can truthfully say that for three months he has a disposition to some type of diet, but we could not say that for those three months he has the habit of eating fatty food.

Thus, dispositions do not entail habits. Similarly, habits do not need to entail dispositions either: if Carlos eats a piece of fruit every time he feels hungry before dinner, we can say that for three months Carlos had that habit, but it does not mean that he similarly has that disposition.

This is, again, a judgment about how the real world has to look for us to talk about dispositions vs. habits, but we are interested in the grammatical instantiation of these categories, which does not need to directly correspond to their logical relation.

What are those conditions? In what follows we want to make the case that for a high number of affixes the habitual reading becomes possible when the subject is animate. Spanish adjectives establish a correlation between animacy and habituality that is not found in, for instance, modal adjectives in *-ble* or *-dero*.

Let us start with one observation about an affix: *-ón*. As we will see (Chapter 8, §3) this affix is specialised in habitual readings when it produces adjectives from verbs. Among many other verbs, from *destrózar* 'destroy' we can obtain the adjective *destróz-ón* 'destroy-ÓN, that always breaks things'. As a verb, *destrózar* can combine with human and non-human subjects:

- (2) a. {El pesticida / La tormenta} destrózó la plantación.  
           the pesticide the storm destroyed the plantation  
           'The pesticide / The storm destroyed the plantation'  
       b. Bob destrózó la habitación.  
           Bob destroyed the room  
           'Bob destroyed the room'

However, in the adjectival version with habitual reading, only the human subject is possible. Unless the storm or the chemical substance are personified, the sequence is ungrammatical.

- (3) a. \*una tormenta destróz-ona  
           a storm destroy-ÓN  
       b. \*un pesticida destróz-ón  
           a pesticide destroy-ÓN  
       c. un niño destróz-ón  
           a boy destroy-ÓN

It is not possible to explain this through an alleged selectional requisite by the suffix *-ón*: there are adjectives in *-ón* (*mol-ón* ‘be.cool-ÓN, cool’; cf. Svensen 2018) that allow non-human objects. It is the case that those examples lack a habitual interpretation.

Moreover, the correlation is not just an accident of this individual affix. Consider the contrast in (4), with *-(t)ivo*.

- (4) a. Este texto es agres-ivo.  
       this text is attack-IVO  
       ‘This text is aggressive’  
       b. Este policía es agres-ivo.  
       this policeman is attack-IVO  
       ‘This policeman is aggressive’

In (4a), with an inanimate subject, we cannot interpret the adjective as habitual, meaning that the text has frequently attacked people. It is only dispositional: in facilitating circumstances – that it is read by a person negatively affected by the matter discussed – it will necessarily make those people feel attacked. In contrast, (4b) allows a habitual interpretation (that is not forced): the policeman has repeatedly attacked others. A dispositional reading is available – that the policeman has a character that gives him a tendency to attack others, but it is strongly felt that for us to be able to say that the policeman is aggressive it would not suffice to infer that his character is choleric, without him having in fact attacked others regularly in the past.

Consider another equivalent example with *-nte* in (5).

- (5) a. Esta tarea es agobia-nte.  
       this task is stress-NTE  
       ‘This task is stressful’  
       b. Esta paciente es agobia-nte.  
       this patient is stress-NTE  
       ‘This patient is stressing’

Similarly, in (5a) we state that the internal properties of the task are such that people would necessarily get stressed under facilitating circumstances (remember Chapter 7, §2.1), while in (5b) it is possible to interpret something stronger: that the patient frequently stresses others. Finally, (6) shows the same type of contrast with *-dor*.

- (6) a. Este ejercicio es agota-dor.  
       this activity is exhaust-DOR  
       ‘This activity is exhausting’

- b. Este profesor es agota-dor.  
 this teacher is exhaust-DOR  
 'This teacher is exhausting'

The contrast is systematic with adjectives that allow both human and non-human subjects; the dispositional reading is available to some of them with human subjects, as a trait of character, but even under those conditions it feels unfair to judge the character in the absence of a regular participation in the relevant event. (7) illustrates it for *decepciona-nte* 'disappoint-NTE, disappointing'; (8) for *tranquiliza-dor* 'calm-DOR, calming'; (9) for *preocupa-nte* 'worry-NTE, worrying' and (10) for *atractivo* 'attract-IVO, attractive'.

- (7) a. un libro decepciona-nte  
 a book disappoint-NTE  
 'a disappointing book'  
 b. un usuario decepciona-nte  
 a user disappoint-NTE  
 'a disappointing user' [corpusdelespañol]
- (8) a. una noticia tranquiliza-dora  
 a piece.of.news calm-DOR  
 'a soothing piece of news'  
 b. un enjambre tranquiliza-dor  
 a swarm calm-DOR  
 'a swarm that calms down' [corpusdelespañol]
- (9) a. una noticia preocupa-nte  
 a piece.of.news worry-NTE  
 'a worrying piece of news'  
 b. Putin es alguien preocupa-nte.  
 Putin is someone worry-NTE  
 'Putin is someone that typically worries'
- (10) a. un diseño atractivo  
 a design attract-TIVO  
 'an attractive design'  
 b. un modelo atractivo  
 a model attract-TIVO  
 'an attractive model'

It is the case that several of these adjectives do not take human or non-human subjects freely. In the case of *-nte*, the requisite imposed on the subject (unlike in the case of *-tivo* and *-dor*) is that it must be the effective cause of the eventuality denoted by the base verb. With psychological verbs, both types are accepted to

the extent that both humans and non-humans can have properties that effectively trigger the change of state in the experiencer. With more physical changes of state things are different. It is possible, for instance, to construct the verbs *engordar* ‘to make fat’, *excitar* ‘to excite’ and *hidratar* ‘to hydrate’ with human or non-human subjects. However, only with a non-human subject is it possible to interpret that the subject is in fact the efficient cause directly responsible for the change of state: the humans here are just external causers.

- (11) a. {El ganadero / El pienso} engordó a los cerdos.  
the rancher / the fodder made.fat A the pigs  
‘The rancher / The fodder made the pigs fat’
- b. {El médico / La sustancia} excitó al paciente.  
the doctor / the substance excited A.the patient  
‘The doctor / The substance made the patient excited’
- c. {La enfermera / La crema} hidrató al paciente.  
the nurse the cream hydrated A.the patient  
‘The nurse / The cream hydrated the patient’

Only the non-human entities whose internal properties allow for an active principle that causes the change of state can be subjects of such adjectives, and consequently they are restricted to a dispositional reading.

- (12) a. {pienso / \*ganadero} engorda-nte  
fodder / rancher make.fat-NTE  
‘fattening fodder’
- b. {sustancia / \*médico} excita-nte  
substance / doctor excite-NTE  
‘exciting substance’
- c. {crema / \*enfermera} hidrata-nte  
cream / nurse hydrate-NTE  
‘hydrating cream’

This explains Rifon’s (1996) observation that the adjectives *contamina-nte* ‘contaminate-NTE’ and *contamina-dor* ‘contaminate-DOR’ have different interpretations: the affix requires the subject to be the active contaminating entity in the first case, but not the second. Note, additionally, that the second adjective is a pseudo-relational adjective with an episodic reading – not a dispositional or a habitual adjective.

- (13) a. {una sustancia / \*un empresario} contamina-nte  
a substance / a businessman contaminate-NTE  
‘a contaminating substance’



- b. {una substancia / un empresario} (\*muy) contamina-dor  
 a substance / a businessman very contaminate-DOR  
 ‘a substance / a businessman that contaminates’

Similarly, other verbs express actions and behaviours that only humans can engage in, and as such they are restricted to habitual readings when interpreted as qualifying adjectives: *negocia-nte* ‘negotiate-NTE, negotiating’ is one relevant example.

Thus, in the domain of deverbal adjectives the correlation is strong: with suffixes that express tendencies when used as qualifying adjectives, the habitual readings emerge when the subject is interpreted as human – due to their lexical meanings or through a personification process. This brings up the question of why and how this happens: what is the type of condition that allows the dispositions of humans to be interpretable as habits? There is an intuitive answer to this, but the technical implementation is less clear. When talking about objects, we infer their internal properties on the basis of the four qualia: the prototypical properties of the material they are made of, the disposition of their parts, the goal with which they have been designed, their shape, size, weight, what type of process brings them about, etc. With humans, on the other hand, many of these factors are less important, because we assume that all humans are ‘built’ in essentially the same way when it comes to their physical characteristics and constitutive parts (thus, their formal and constitutive qualia), and we interpret humans as natural objects without a relevant telic quale. The criterion with humans is mainly the controlled behaviour that humans exhibit, typically in a volitional way, when acting with other entities in the world (that is, their agentive quale). This is arguably the strongest criterion we follow when evaluating the ‘internal dispositions’ of humans: how they behave in the world, when confronted with different stimuli.

I contend that this is what explains the human subject-habit connection that we see in these data. If the PP layer of an affix is specified as ‘tendency to’, this tendency is judged through notions such as purpose, physical structure or internal constituency in an entity lacking any volitional capacity to control a behaviour; when the same affix combines with a human subject, the tendency is evaluated through the behaviour that the entity displays, and that behaviour cannot be inferred: it must be verified through the regular participation in the eventuality.

This account is based on the encyclopaedic inferences that we associate to humans as opposed to objects in our experiences about the world: the well-established category of volitionality and conscious intention underlies the two interpretations that ‘tendency’ can trigger. There is nothing structural, then, in our account of the difference between the human and non-human readings of the examples above. In other words: we claim that with these adjectives the habitual reading is derived from the grammatically specified dispositional interpretation. In §3, we will discuss *-ón*, and we will explain why it does not give rise to the same type of alternations.

## 2. Dispositional adjectives: Description and analysis

Let us now specifically discuss dispositional adjectives. These adjectives can be divided in two groups. In the first group, we have dispositional adjectives whose common property is that they force an active interpretation of the base verb. The four affixes in (14) illustrate this class, and their habitual readings depend solely on the presence of a human subject:

- (14) a. -nte  
 lubrica-nte  
 lubricate-NTE  
 ‘lubricating’
- b. -dor  
 innova-dor  
 innovate-DOR  
 ‘innovative’
- c. -tivo  
 nutri-tivo  
 nourish-TIVO  
 ‘nourishing’
- d. -tario  
 contesta-tario  
 contest-TARIO  
 ‘rebellious’

The second class only contains *-dizo*. In this affix, and as noted by Svensen (2018), the dispositional reading is associated with a passive interpretation of the base verb (15). In contrast, habitual interpretations are related to human subjects (16), and typically to psychological verbs where the subject is interpreted as the experiencer, independently of whether the base verb is to be interpreted as active or not.

- (15) raja-dizo  
 tear-DIZO  
 ‘that tends to get torn’
- (16) asusta-dizo  
 frighten-DIZO  
 ‘that regularly gets frightened, fearful’

## 2.1 Active suffixes

The suffix *-nte* has the property that it forces its subject to be interpreted as the effective cause of the event essence that it embeds. In the dispositional reading it typically combines with three types of verbs: (i) change of state verbs, particularly changes that involve physical properties; (ii) psychological verbs, specifically those that can be caused states (Pylkkänen 2008) and (iii) emission verbs, especially those of sound and light (Levin 1993). See Cano Cambronero (2013) for a very detailed overview of the possible bases, although the dispositional, habitual and episodic readings are not distinguished.

- (17) *ablanda-nte* ‘soften-NTE, softening’, *absorbe-nte* ‘absorb-NTE, absorbing’, *aglutina-nte* ‘agglutinate-NTE, agglutinating’, *aplana-nte* ‘level-NTE, leveling’, *aromatiza-nte* ‘scent-NTE, scenting’, *calcina-nte* ‘char-NTE, charring’, *cicatriz-nte* ‘scar-NTE, scarring’, *coagula-nte* ‘coagulate-NTE, coagulating’, *colora-nte* ‘colour-NTE, colouring’, *conserva-nte* ‘preserve-NTE, preservative’, *corta-nte* ‘cut-NTE, cutting’, *debilita-nte* ‘weaken-NTE, weakening’, *desliza-nte* ‘slide-NTE, slippery’, *oxida-nte* ‘rust-NTE, rusting’, *reafirma-nte* ‘confirm-NTE, reaffirming’, *suaviza-nte* ‘soften-NTE, softening’...
- (18) *acucia-nte* ‘goad-NTE, pressing’, *agobia-nte* ‘stress-NTE, stressing’, *alarma-nte* ‘alarm-NTE, alarming’, *apasiona-nte* ‘fascinate-NTE, fascinating’, *asfixia-nte* ‘suffocate-NTE, suffocating’, *estresa-nte* ‘stress-NTE, stressful’, *mare-nte* ‘confuse-NTE, confusing’, *preocupa-nte* ‘worry-NTE, worrying’, *tranquiliza-nte* ‘soothe-NTE, soothing’...
- (19) *centellea-nte* ‘sparkle-NTE, sparkling’, *chirria-nte* ‘creak-NTE, creaking’, *cruje-nte* ‘crunch-NTE, crunchy’, *espuma-nte* ‘foam-NTE, foaming’, *fluoresce-nte* ‘be.phosphorescent-NTE, phosphorescent’, *relumbra-nte* ‘dazzle-NTE, dazzling’, *tintinea-nte* ‘tinkle-NTE, tinkling’...

The emission class in (19) is interesting to consider, because in some instances it seems quite natural to assign a habitual interpretation to the adjective, even with non-human subjects. For instance, in *una campana tintineante* ‘a tinkling bell’, it is natural to interpret that during a time period the bell regularly tinkles, and the same goes for *una luz centelleante* ‘a sparkling light’. Importantly, emission verbs are unergative predicates that carry an agent, and moreover the emission of light or sound can be viewed as the external manifestation, as a behaviour, of the internal properties of the object able to produce sound or light. The adjectives that allow for the habitual reading are built on top of verbal bases that express manners of producing light and sound, and it is their subjects that control those manners.

This suggests that what is relevant for the habitual reading is not the presence of a human per se, but the deduction that a tendency is interpreted as a habit when it is controlled by the agent and it can be assimilated to a behaviour implying a particular manner of acting. In the same way that destroying things can be seen as a behaviour for a human because it implies that the subject behaves in a particular way that he or she controls, tinkling is a behaviour for an object that produces sound because it denotes the way in which the sound is emitted given the internal properties of the subject.

If correct, this line of reasoning speaks against positing a formal feature ‘human’ in order to differentiate dispositionals from habituals. This feature would not be enough to explain the emergence of habitual readings with this subset of adjectives, and as we will see below for *-tivo* (cf. 22 and 23), it would incorrectly predict that humans used as instruments or means under conditions that they cannot control should never give dispositional readings.

As for *-dor*, it shares with *-nte* the requisite that the subject has to be interpreted as an initiator, but does not impose the ‘effective cause’ constraint. (20) illustrates a few derived words that are interpreted as dispositional adjectives with non-human subjects.

- (20) *aclara-dor* ‘clarify-DOR, clarifying’, *adormece-dor* ‘make.sleepy-DOR, soporific’, *alenta-dor* ‘encourage-DOR, encouraging’, *amenaza-dor* ‘threaten-DOR, threatening’, *atosiga-dor* ‘harrass-DOR, harrassing’, *cautiva-dor* ‘captivate-DOR, captivating’, *demole-dor* ‘demolish-DOR, devastating’, *depura-dor* ‘purify-DOR, purifying’, *difama-dor* ‘slander-DOR, slandering’, *encanta-dor* ‘charm-DOR, charming’, *ensordece-dor* ‘deafen-DOR, deafening’, *estremece-dor* ‘shake-DOR, terrifying’, *moraliza-dor* ‘moralise-DOR, moralising’, *perturba-dor* ‘disturb-DOR, disturbing’, *promete-dor* ‘promise-DOR, promising’

The suffix *-tivo* shares the properties of *-nte* when interpreted as a dispositional adjective, something possible only in a few forms.

- (21) *atrac-tivo* ‘attract-TIVO, attractive’, *decora-tivo* ‘decorate-TIVO, decorative’, *destruc-tivo* ‘destroy-TIVO, destructive’, *llama-tivo* ‘appeal-TIVO, appealing’, *nutri-tivo* ‘nourish-TIVO, nutritive’

Given that *-tivo* in qualifying readings – like *-nte* – imposes the requisite that the subject is the efficient cause of the eventuality, some of these adjectives cannot take the habitual interpretation even with human subjects. For a teacher to be decorative, it has to be the entity used as decoration (22), and for a doctor to be nutritive, it has to be used himself as a nutrient. As such, these subjects are interpreted as

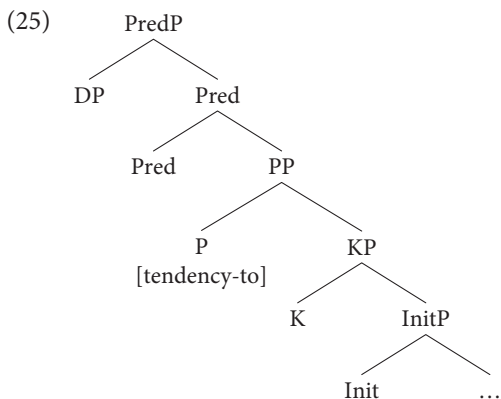
instruments rather than as agents that exhibit a particular type of controlled behaviour in regular episodes, so the habitual interpretation is excluded.

- (22) a. {El profesor / El cuadro} decora la habitación.  
 the teacher / the painting decorates the room  
 b. {un cuadro / #un profesor} muy decorativo  
 a painting a teacher very decorative
- (23) a. {El médico / La glucosa} nutre al paciente.  
 the doctor / the glucose nourishes A-the patient  
 b. {La glucosa / #El médico} es nutritivo.  
 the glucose / the doctor is nutritive

Finally, a small number of adjectives in *-tario* (as opposed to *-torio*, restricted to pseudo-relational adjectives) can have a dispositional reading when predicated from non-humans.

- (24) *contesta-tario* ‘contest-TARIO, rebellious’, *protesta-tario* ‘protest-TARIO, rebellious’, *retarda-tario* ‘delay-TARIO, reactionary’

We propose that the entry of these adjectivalisers contains a P layer meaning ‘tendency-to’, as in (25). This interpretation directly relates to the agentive quale.



This imposes a basic dispositional reading from which a habitual interpretation is derived once the DP subject is interpreted as an entity that controls the eventuality and exhibits the tendency as a particular type of behaviour, taken as a manner of acting.

All dispositional formations with *-nte*, *-dor*, *-tivo* and *-tario* come from verbs denoting causative change of state and other activities containing initiators. The affixes impose an active reading to the verbal base. We propose that selecting an active version of the verb is a natural property of a P layer that denotes a natural

tendency towards an eventuality. In the case of *-nte* and *-dor*, the requisite that the verbal base should be active and project an InitP could be interpreted as a result of the affixes selecting initiator relations – as we saw in Chapter 6, §4.1, this is true even in pseudo-relational readings. However, this cannot be the reason in *-tivo* and *-tario* adjectives, which allow a wider range of relations to be expressed under those conditions. (26) illustrates two such uses for *-tario* where the relation is clearly not an initiator one.

- (26) a. la empresa adjudica-taria  
 the company allocate-TARIO  
 ‘the company that is allocated a contract’  
 (not ‘the company that allocates a contract’)
- b. una enfermedad heredi-taria  
 a sickness inherit-TARIO  
 ‘a sickness that can be inherited’  
 (not ‘a sickness that inherits something’)

However, all dispositional adjectives using these suffixes are interpreted actively; we suggest that this is because it is more natural to interpret dispositions as notions that produce causal relations between entities and events, as the philosophical literature cited above has proposed. If an object tends, through its internal properties, to participate in an eventuality, then the internal properties are interpreted in part as the cause of that eventuality, and this matches a structure where the verbal structure is projected up to the Initiation Phrase.

## 2.2 The suffix *-dizo*

The apparent exception to this association between tendencies and initiators comes from the suffix *-dizo*.<sup>1</sup> This suffix produces three types of adjective, following Svensen’s (2018: 196 and folls.) detailed overview. One group of adjectives produced by this adjectivaliser is modal, and here the interpretation of the subject is systematically passive (27).

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1. Despite the surface similarity between *-dizo* and the denominal affix *-izo*, specialised in similitudinal adjectives, it seems that there is no formal synchronic relation between the two. As Svensen (2018) argues in length, the temptation to treat *-dizo* as addition of *-izo* to the participial form of the base verb is quickly falsified by the fact that in second conjugation verbs (*coc-e(r)* ‘to boil’), *-dizo* selects the *-e-* form of the theme vowel while the participle forces *-i-* (cf. *coc-i-do* ‘boil-ThV-DO, boiled’ vs. *coc-e-dizo* ‘boil-ThV-DIZO, easy to boil’).

- (27) *acarrea-dizo* ‘carry-DIZO, transportable’, *acoge-dizo* ‘receive-DIZO, that can be gathered’, *ahorca-dizo* ‘hang-DIZO, that deserves to be hanged’, *alcanza-dizo* ‘reach-DIZO, reachable’, *alquila-dizo* ‘hire-DIZO, for rent’, *anega-dizo* ‘flood-DIZO, that can be flooded’, *apreta-dizo* ‘squeeze-DIZO, compressible’, *arrastra-dizo* ‘drag-DIZO, dangling’, *arroja-dizo* ‘throw-DIZO, throwable’, *cerra-dizo* ‘close-DIZO, that can be locked’, *coce-dizo* ‘boil-DIZO, that is easy to boil’, *coge-dizo* ‘catch-DIZO, that can be collected’, *compra-dizo* ‘buy-DIZO, that can be bought’, *corre-dizo* ‘run-DIZO, sliding’, *encubri-dizo* ‘conceal-DIZO, that can be concealed’, *leva-dizo* ‘raise-DIZO, that can be raised’, *plega-dizo* ‘fold-DIZO, folding’, *rega-dizo* ‘water-DIZO, irrigable’, *roba-dizo* ‘steal-DIZO, land that can be stolen’, *trae-dizo* ‘carry-DIZO, tractable’

In this class, we find most of the properties of modal adjectives with *-ble*: the verbs express an event that requires an external causer, in the sense that it cannot be triggered by the same argument that acts as the undergoer. Most of these adjectives reject anticausative structures, with the sole exceptions of *anegar-se* ‘to flood-SE, to get flooded’, *arrastrar-se* ‘to drag-SE, to crawl’, *cerrar-se* ‘to close-SE, to get closed’, *plegar-se* ‘to fold-SE, to get folded’ and *correr-se* ‘to run-SE, to ejaculate’; the adjectives, however, clearly involve an externally caused interpretation of the base verb.

Then we have a group of adjectives with a dispositional interpretation. To the very best of our knowledge, the list in (28) is exhaustive, and as we will see all the base verbs involve anticausative readings.

- (28) *ahoga-dizo* ‘drown-DIZO, that tends to drown’, *apaga-dizo* ‘go.out-DIZO; that tends to go out’, *cae-dizo* ‘fall-DIZO, that tends to fall’, *cambia-dizo* ‘change-DIZO, changeable’, *desliza-dizo* ‘slide-DIZO, sliding’, *desmorona-dizo* ‘crumble-DIZO, crumbling’, *doblega-dizo* ‘bend-DIZO, that tends to bend’, *escurri-dizo* ‘glide-DIZO, evasive’, *llove-dizo* ‘rain.through-DIZO, leaky’, *move-dizo* ‘move-DIZO, unsteady’, *pega-dizo* ‘stick-DIZO, sticky’, *quebra-dizo* ‘break-DIZO, fragile’, *raja-dizo* ‘tear-DIZO, that tends to get torn’, *resbala-dizo* ‘slip-DIZO, slippery’, *roda-dizo* ‘roll-DIZO, that tends to roll’

In contrast to the few formations that had a dispositional meaning with *-ble*, here the verbs do not have to express externally caused changes of state. The opposite seems to be true: the verbs used for these dispositional readings are systematically verbs that have an anticausative reading where the undergoer is interpreted as the internal causer of the eventuality, as the English translation shows. In this anticausative version, some of these verbs take the reflexive marker *se* (29) and others do it without marking (30).

- (29) ahogar-se ‘to drown-SE’, apagar-se ‘to go.out-SE’, deslizar-se ‘slide-SE’, desmoronar-se ‘crumble-SE’, doblregar-se ‘bend-SE’, escurrir-se ‘glide-SE’, llover-se ‘to leak-SE’, mover-se ‘to move-SE’, pegar-se ‘to stick-SE’, quebrar-se ‘to break-SE’, rajarse ‘to tear-SE’
- (30) caer ‘to fall’, cambiar ‘to change’, resbalar ‘to be slippery’, rodar ‘to roll’

However, in both cases the anticausative reading is associated to the dispositional interpretation, and is interpreted as implying that the subject is the internal causer of the change of state or location. This type of formation, as we saw, was impossible for *-ble*, because it imposed the requisite that the version of the verb that is used in the formation of the adjectives must contain an external causer and the anticausative version means exactly the opposite, that the change of state is caused by the internal properties of the subject without any participation from external entities. That is: we claim that *-dizo* differs in its behaviour from *-ble* in that the former does not impose the external causation constraint. We will show that this is the only difference, and it is enough to explain all differences.

There is a relatively high number of adjectives with *-dizo* that are naturally interpreted as habituals:

- (31) *acomoda-dizo* ‘get.comfortable-DIZO, that usually gets comfortable in any situation’, *alborota-dizo* ‘make.excited-DIZO, that usually gets excited’, *alza-dizo* ‘raise-DIZO, that usually protests’, *antoja-dizo* ‘feel.like-DIZO, capricious’, *aparta-dizo* ‘distance-DIZO, that usually distances oneself from others’, *arrebata-dizo* ‘get.worked.up-DIZO, that frequently gets worked up’, *arrima-dizo* ‘move.closer-DIZO, that usually approaches others’, *arroba-dizo* ‘become.entranced-DIZO, that usually becomes entranced’, *asombra-dizo* ‘be.astonished-DIZO, that usually becomes astonished’, *asusta-dizo* ‘get.frightened-DIZO, that usually becomes frightened’, *contenta-dizo* ‘satisfy-DIZO, that usually gets satisfied’ (see also *des-contentadizo* ‘that usually gets dissatisfied’), *enamora-dizo* ‘make.fall.in.love-DIZO, that usually falls in love’, *encontra-dizo* ‘meet-DIZO, that usually contrives meetings’, *enfada-dizo* ‘make.angry-DIZO, that usually gets angry’, *engaña-dizo* ‘fool-DIZO, that usually fools oneself’, *enoja-dizo* ‘make.angry-DIZO, that usually gets angry’, *espanta-dizo* ‘frighten-DIZO, that usually gets frightened’, *hui-dizo* ‘flee-DIZO, fearful, that usually runs away’, *olvida-dizo* ‘forget-DIZO, that usually forgets things’, *solta-dizo* ‘let.go-DIZO, that usually slips away from situations’, *topa-dizo* ‘bump.into-DIZO, that usually contrives meetings’

Interestingly, these habitual adjectives share a number of significant properties. First of all, as noted by Svensen (2018: 202), the vast majority of subjects are interpreted



as the experiencers of some psychological change of state. In most cases, the subjects are not causers of an event, but experiencers of a psychological state, something that explains why (32) is ungrammatical, given that the subject is not a sentient being.

- (32) \*un artículo enfadadizo  
 an article make.angry-DIZO

Thus, in contrast with the other habitual adjectives that we have seen, the causer interpretation is in fact ruled out with the subject of these adjectives. There are just a few examples where the base verb seems to denote something other than a psychological state: *huir* ‘to run away’, *alzar-se* ‘to raise-SE’, *apartar-se* ‘to distance oneself-SE’, *encontrar-se* ‘to meet-SE, to bump into someone else’ (cf. also *topar-se*, with identical interpretation), *arrimar-se* ‘to come closer-SE’ and *soltar-se* ‘to slip away’. Two of these verbs are used here in a psychological sense. Someone *alzadizo* rises against injustice, denoting a psychological reaction more than a physical change of location; someone *apartadizo* does not distance oneself in the physical sense, but is primarily refusing contact with other humans as a type of behaviour.

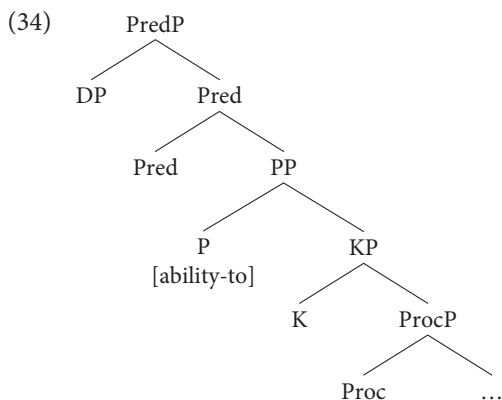
The point is, however, that in the remaining cases the eventualities are also interpreted as denoting a particular type of character of an entity. Being *huidizo* is interpreted more as being shy or evasive than as frequently running away from places. Being *encontradizo*, *topadizo* or *arrimadizo* involves interacting with others in a particular way, either by trying to establish relations with them or trying to prosper by their side; finally, being *soltadizo* does not mean slipping away in a physical sense, but having a character that involves some ability to avoid responsibility for one’s actions.

A second common property is that – with the possible exception of the verb *huir* ‘to run away’, which is agentive – the events are interpreted as anticausative or, more generally, as involving a subject whose internal properties make the event happen.

- (33) *acomodar-se* ‘to get comfortable-SE’, *alborotar-se* ‘to get excited’, *alzar-se* ‘to raise-SE’, *arrebatar-se* ‘to get worked up-SE’, *arrimar-se* ‘to move closer’, *arrobarse* ‘to get entranced’, *asombrar-se* ‘to get astonished’, *contentar-se* ‘to get satisfied’, *asustar-se* ‘to get frightened’, *enamorar-se* ‘to fall in love-SE’, *enfadar-se* ‘to get angry-SE’, *engañar-se* ‘to fool oneself-SE’, *enojar-se* ‘to get angry’, *espantar-se* ‘to get frightened’, *olvidar* ‘to forget’, *soltar-se* ‘to come off’, *encontrar-se* ‘to bump into’

In the case of *huir* ‘to run away’, however, the subject in the agentive version is coreferential with the entity that moves: the subject controls a moving event where he or she moves in a particular way.

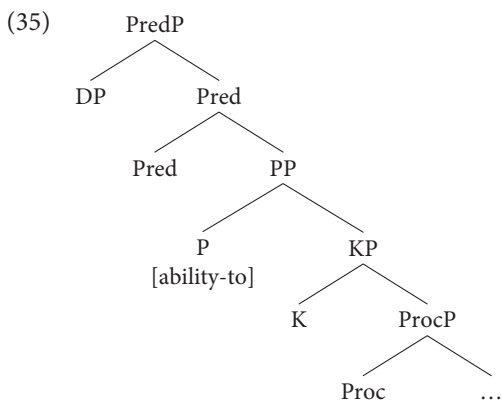
We believe that this apparent variation can be reduced by positing a single structure for *-dizo* adjectives, which is the one in (34).



In short, we give *-dizo* the same underlying structure as modal *-ble* and *-dero*, only that in contrast to them we propose that it does not impose the condition that the event must be caused by an external participant. This is what explains the difference between *-dizo* and the other class of affixes.

Nothing has to be added to the modal instances with respect to what was said with *-ble*: notice that in the subset of verbs that produce them, there is no single case of a verbal base where the inferred initiator is coreferential with the internal argument. All these eventualities involve situations where there is an external entity that produces the eventuality, so the ability component is interpreted as allowing participation in an event where the subject is not in control.

In contrast, the dispositional reading emerges when the eventuality is a change of state or location where the internal argument causes the change by its internal properties: unaccusative verbs are possible bases here, as we have seen. The interpretation that the internal properties of the affected argument are responsible for the change is what licenses the semantically ‘active’ reading where the ability is reconceptualised as a natural tendency to participate in the specific change. Thus, the contrast between modal *dizo*-adjectives and dispositional *dizo*-adjectives is one between externally caused eventualities vs. internally caused eventualities. The distinction cannot be established in the case of *-ble* or *-dero* because both affixes impose the requisite that only externally-caused eventualities can combine with them.



Finally, habitual readings are derived from dispositional readings. Like dispositional adjectives, they require that the eventuality's internal argument is the entity that causes the eventuality: it is either that the subject is an affected argument whose internal properties are enough to produce the change of state in the anticausative reading (cf. *enfadarse*, 'to get angry'), or it has to be a displaced entity in a movement process that is initiated by an agent that is coreferential with it (cf. *huir* 'to run away'). The difference from the dispositional reading is that here the disposition can be reinterpreted as the personality of an entity, and therefore as involving a specific behaviour. This explains the preference for psychological verbs, where the tendency to participate in a change of state eventuality is easily reinterpreted as a behaviour that is regularly exhibited, and the tendency to interpret movement verbs as denoting types of personality.

In short, our claim is that *-dizo* is at its core a modal suffix, but one without the requisite that the base eventualities be externally caused. Most of the modal adjectives with this suffix are felt as old, and the affix is no longer productive in this meaning. This is plausibly due to the existence of the much more productive *-ble*. Because *-ble* rejects anticausative versions of the base verbs, *-dizo* has been the main choice in producing deverbal adjectives from verbs that denote internally caused events, and these trigger dispositional readings because the internal argument contains properties that are enough to initiate the change of state.

### 3. Habitual adjectives: Description and analysis

Let us move now to habitual adjectives, which are almost exclusively restricted to human subjects – with the exception noted above about emission verbs. The adjectivalisers *-nte*, *-dor*, *-tivo* and *-dizo* derive the habitual reading from the dispositional one, as we have seen. In many instances, the base verbs denote activities that only

humans can perform (cf. 36 and 37), but in other cases the habitual reading is available provided that the tendency can be reconceptualised as a personality trait that defines a typical behaviour. (38) offers some examples with *-tivo*.

- (36) lloriquea-nte ‘whine-NTE, that uses to whine’, pleitea-nte ‘litigate-NTE, litigating’  
 (37) acapara-dor ‘monopolise-DOR, monopolising’, ahorra-dor ‘spare-DOR, thrifty’, batalla-dor ‘battle-DOR, that frequently battles’, lucha-dor ‘fight-DOR, brave, that frequently fights’  
 (38) argumenta-tivo ‘argue-TIVO, argumentative’, ahorra-tivo ‘save-TIVO, thrifty’, coopera-tivo ‘cooperate-TIVO, cooperative’, crea-tivo ‘create-TIVO, creative’, intui-tivo ‘sense-TIVO, intuitive’, nega-tivo ‘deny-TIVO, negative’

However, in Spanish the most productive habitual adjectivaliser is without doubt *-ón*.

- (39) abus-ón ‘abuse-ÓN, bullying’, acus-ón ‘accuse-ÓN, that is a telltale’, adul-ón ‘flatter-ÓN, charming’, bail-ón ‘dance-ÓN, that often dances’, berre-ón ‘bellow-ÓN, that typically bellows’, besuc-ón ‘smother.by.kissing-ÓN, kissy’, burl-ón ‘tease-ÓN, teasing’, busc-ón ‘search-ÓN, swindling’, cag-ón ‘poop-ÓN, whimpish’, chill-ón ‘shout-ÓN, noisy’, chup-ón ‘suck-ÓN, that sucks a lot’, comi-lón ‘eat-ÓN, that eats a lot’, critic-ón ‘criticise-ÓN, hypercritical’, destroza-ón ‘destroy-ÓN, that is always breaking things’, dormi-lón ‘sleep-ÓN, that sleeps a lot’, embroll-ón ‘confuse-ÓN, that complicates things too much’, empoll-ón ‘cram-ÓN, that studies too much’, escam-ón ‘make.suspicious-ÓN, that gets suspicious often’, falt-ón ‘act.rudely-ÓN, rude’, fisg-ón ‘snoop-ÓN, nosy’, grit-ón ‘shout-ÓN, loudmouthed’, gruñ-ón ‘growl-ÓN, grumpy’, lig-ón ‘score.with.someone-ÓN, flirtatious’, llor-ón ‘cry-ÓN, crybaby’, machac-ón ‘crush-ÓN, insistent’, mand-ón ‘order-ÓN, bossy’, mat-ón ‘kill-ÓN, bullying’, me-ón ‘pee-ÓN, that pees too much’, mir-ón ‘watch-ÓN, voyeur’, pasm-ón ‘make.astonished-ÓN, that frequently gets astonished’, pele-ón ‘fight-ÓN, argumentative’, pid-ón ‘beg-ÓN, that asks for too many things’, pregunt-ón ‘ask-ÓN, inquisitive’, refunfuñ-ón ‘grouch-ÓN, grumpy’, regal-ón ‘give.away-ÓN, generous’, respond-ón ‘answer.back-ÓN, insolent’, rezong-ón ‘moan-ÓN, that grumbles too much’, salt-ón ‘jump-ÓN, bulging’, silb-ón ‘whistle-ÓN, that frequently whistles’, sob-ón ‘fondle-ÓN, groper’, tard-ón ‘take.long.time-ÓN, slowcoach’, tembl-ón ‘shake-ÓN, shaky’, toc-ón ‘touch-ÓN’, trag-ón ‘swallow-ÓN, glutton’, zumb-ón ‘buzz-ÓN, that frequently jokes’

Importantly, the adjectives in (39) are not just habitual: they even state that the participation in the event is excessive, to the point that exceeds some standard measure. For instance, someone that is *critic-ón* ‘criticise-ÓN’ is not just someone that regularly criticises, the frequency of the critiques must also be excessive.

One could propose that these formations are derived from nouns or roots, given the absence of a theme vowel in all these forms (40). However, we will follow Svensen (2018: 100–104) in her reasoning that the theme vowel is missing due to phonological constraints, and it is no sign that the base is not verbal.

- (40) a. sob(\*-a)-ón  
fondle-ThV-ÓN  
b. gruñ(\*-i)-ón  
grouch-ThV-ÓN

One first argument is the observation that if *-ón* was attached to a noun or a root, there would be no way of differentiating the two formations in (41), the one in (41a) carrying the possessive *-ón*, which is denominal.

- (41) a. cabez-ón  
head-ÓN  
'with a big head'  
b. abus-ón  
abuse-ÓN  
'that abuses a lot' (not 'with a great abuse')

The fact is that the excess meaning is present both in (41a) and (41b). It could be possible, in principle, to say that there are two different adjectivalisers expressing excess in Spanish, both sounding *-ón*. However, this should not be the first option to explore, particularly in light of (42), which shows that when the theme vowel is phonologically separated from the vowel of the suffix it emerges on the surface.

- (42) dorm-i-lón  
sleep-ThV-ÓN  
'that sleeps a lot'

Finally, *-ón* is sensitive to the conjugation class of the base verb: the vast majority of adjectives derived by this suffix belong to the first conjugation, and there are just a handful of formations that depart from this tendency. In most such cases, there is some morphophonological irregularity involved. (42) is one example of it, where the suffix uses an allomorph *-lón* (cf. also *com-i-lón* 'eat-ThV-ÓN, that eats too much'). (43) shows other examples of the morphophonological irregularity of adjectives in *-ón* when the base does not belong to the first conjugation.

- (43) a. ped-i-gón  
ask.for-ThV-ÓN  
b. tem-e-rrón  
fear-ThV-ÓN  
'fearful'

- c. met-i-cón  
 meddle-ThV-ÓN  
 ‘nosy’

If the adjectivaliser is sensitive at some level to the conjugation class of the base, it follows that the base must be verbal. Interestingly, this opens the door for an analysis where *-ón* is the same suffix when it takes nouns and when it takes verbs. We will argue in what follows that, while the habitual reading is derived from tendencies or abilities in the case of the other suffixes, *-ón* specifies it through the excess semantics of the PP layer that it lexicalises.

Even though *-ón* is only productive with habitual adjectives, there are a few instances where it produces adjectives that simply convey a notion of excess. To the best of our knowledge, the list in (44) is the whole set of deverbal adjectives in *-ón* that lack a habitual meaning (cf. Svensen 2018: 108–110).<sup>2</sup> Correlatively, they are not used to express behaviours of humans.

- (44) a. ceb-ón  
 fatten.up-ÓN  
 ‘extremely fat’  
 b. mol-ón  
 be.cool-ÓN  
 ‘very cool’  
 c. pint-ón  
 paint-ÓN  
 ‘that has too much colour’  
 d. pic-ón  
 be.itchy-ÓN ‘that is too itchy / spicy’

In this non-habitual meaning, it is possible to have a stative verb such as *molar* ‘to be cool’, but in the habitual meaning the stative meanings are out. Consider the apparently stative verb *faltar* ‘to lack’, in *falt-ón* ‘that is frequently rude’. The meaning of the adjective shows that the base is not the stative meaning of the verb (45), but the eventive one meaning ‘to say or do something that offends others’ (46).

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2. Isabel Oltra-Massuet (p.c.) points out to me an interesting issue, which is why there are so few adjectives like these. In my account, they are made available by the conceptual properties of the exponent *-ón*, so one would expect more of this type. I believe that this is just a lexical accident: the idea of excess, when predicated from a verbal base, will be usually interpreted as habituality, and for the habituality not to exist it should be either that the base is stative or that the speakers have lost the connection to the verb that appears as the base. In principle, we expect that other formations with these properties might be created by native speakers.

- (45) a. Me falta dinero.  
 me.dat lacks money  
 'I lack money'  
 b. \*Me falta dinero rápidamente.  
 me lacks money quickly
- (46) a. Juan le faltó a mi madre en la fiesta.  
 Juan her offended A my mother at the party  
 'Juan offended my mother at the party'  
 b. Juan le faltó rápidamente.  
 Juan her offended quickly  
 'Juan promptly offended her'

Unsurprisingly, this is what we expect if the habitual interpretation still has something to do with the notion of behaviour, reinterpreted as the regular external manifestation of a set of characteristic properties of humans. As it was the case with *-dizo*, in the formations where the base is a psychological predicate, the subject of the adjective corresponds to the experiencer (47). In contrast, in the dispositional adjective *molón*, the subject corresponds to the entity that causes the emotion (48).

- (47) a. Me escama su comportamiento.  
 me makes.suspicious his behaviour  
 'His behaviour makes me suspicious'  
 b. un hombre escam-ón  
 a man make.suspicious-ÓN  
 'a man that gets suspicious frequently'
- (48) a. Me mola su comportamiento.  
 me be.cool his behaviour  
 'His behaviour seems cool to me'  
 b. un comportamiento mol-ón  
 a behaviour be.cool-ÓN  
 'a very cool behaviour'

In the habitual meaning, the behaviour interpretation is obtained even when the base verb does not express a behaviour in itself. Some of the verbs do express human behaviours (cf. 49), but others clearly do not (50).

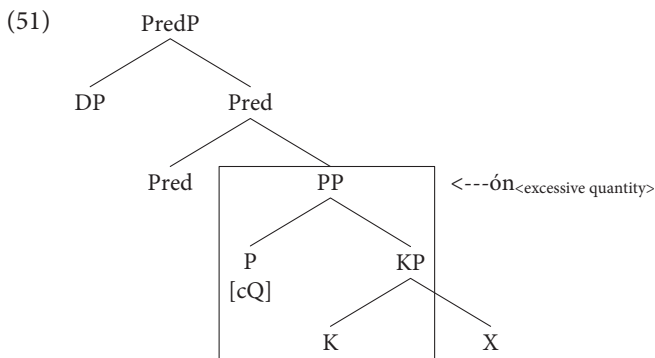
- (49) a. ligar 'to flirt'  
 b. adular 'to flatter'  
 c. pelear 'to fight'

- (50) a. comer ‘to eat’  
 b. dormir ‘to sleep’  
 c. temblar ‘to shake’  
 d. tocar ‘to touch’

The behaviour meaning is obtained in this second group of verbs by the repetition implication: the excessive participation in the event, both in frequency and intensity, is interpreted as a manifestation of the behaviour that a human displays. Even though eating is not a behaviour, eating in excess becomes a behaviour because it is interpreted as a sign of characteristic properties of the individual.

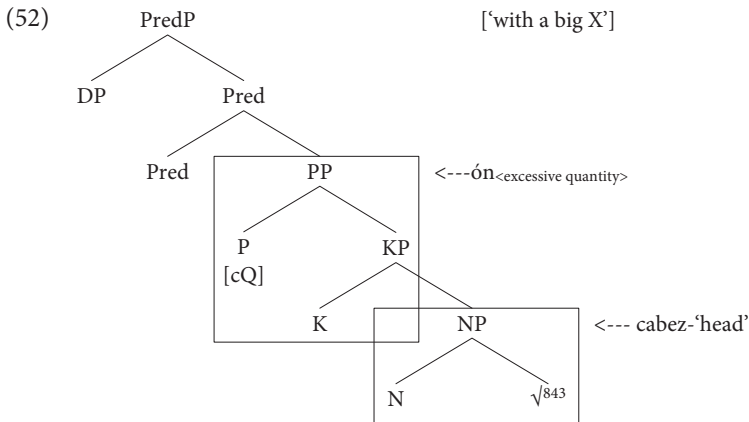
If the core meaning of the suffix *-ón* is excess, and the excess interpretation can in fact derive the habitual interpretation, it seems that there are plausible reasons to attempt a unified analysis of deverbal *-ón* and denominal *-ón*.

We propose to associate *-ón* with the information that it expresses a *with*-relation related to the constitutive quale. The subject is described as being characteristically accompanied by ‘something’. The conceptual semantics of the exponent *-ón* specifies that the ‘something’ is excessive in quantity. There are, then, two components in its meaning: the type of relation being one of accompaniment, and the valuation that the accompaniment is excessive.



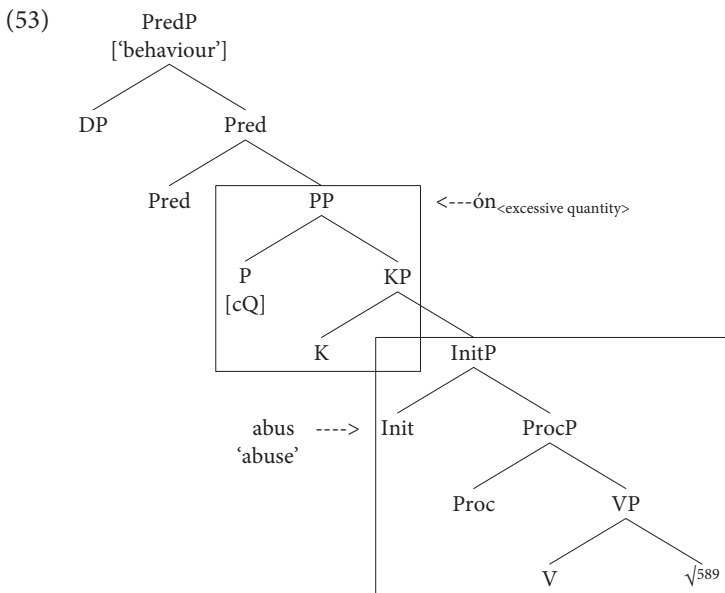
The structure in (51) is underspecified about the type of complement that it takes, that is, what the entity is that characteristically accompanies the subject in excess. What we claim is that ‘with’ is interpreted as possession when the complement is nominal, as in (52):



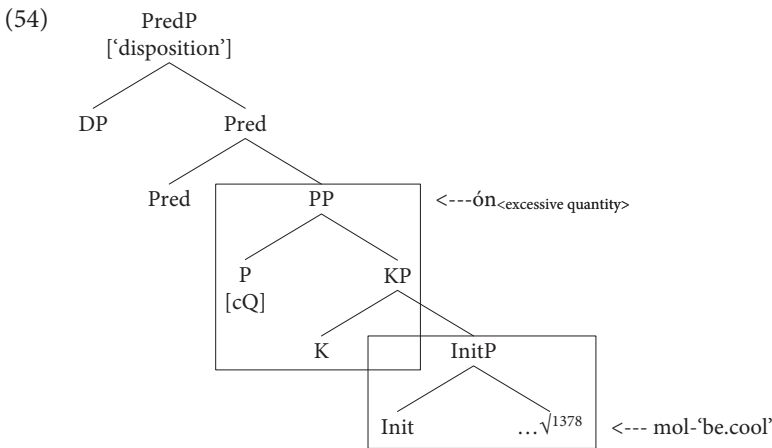


The ‘with’ relation is not interpreted as possession when the complement does not denote a physical entity. When the complement is an event essence, the idea that the subject characteristically comes with the base event is naturally interpreted as the subject participating very frequently in that event. In the same way that the subject could have been defined by a characteristic item of clothing that she has with her, the subject is defined by the event essence that normally is with him in the form of a characteristic behaviour that is perceived as excessive.

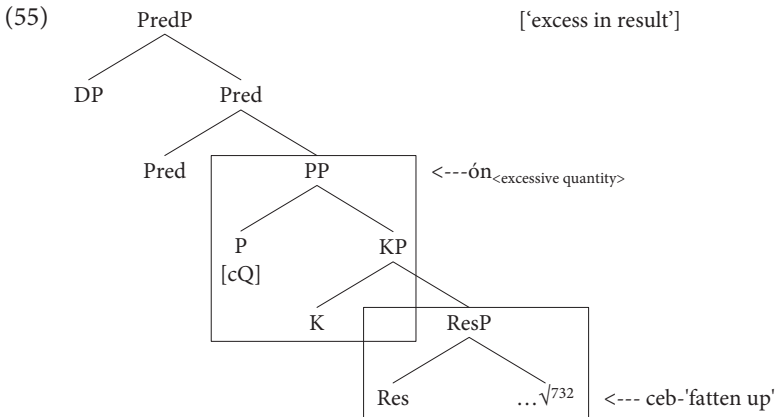
The behaviour interpretation, however, requires two things: that there is an event that exhibits that behaviour, and that the event is controlled by the subject. This translates in the Ramchandian system adopted here as requiring the presence of both Init and Proc in the complement of *-ón*:



The behaviour reading is derived from the excess meaning when the complement expresses a dynamic event where the participation of the human subject can be interpreted as triggered by a characteristic personality. In contrast, when the base verb is purely stative, there is no possible behaviour interpretation – because there is no eventive part that can be done in a particular manner, and the excess meaning needs to be interpreted in accordance with this. There are two ways in the data that we have. In the first one, the subject is interpreted as the cause of a state, by virtue of its internal properties: this, as in the case of *-dizo*, triggers a dispositional reading, only one where the state reached is related to a ‘high quantity’ reading.



In the other case, the subject is interpreted merely as the entity that experiences a particular effect, and therefore is found in a state where there is excess of a magnitude expressed by the verbal base. This is the case of *pint-ón* ‘with too much colour’ and *ceb-ón* ‘with too much fat’, where the subjects are interpreted as the entities that suffer the result of painting and fattening up.



With this we finish not only the analysis of habitual adjectives, but also of qualifying deverbal adjectives in general. It is time to take stock of what we have seen in this domain.

We have seen that the notions that are usable to characterise entities in the world by their relation to events are very restricted. We can characterise entities – that is, deduce internal properties of entities – by the events in which they can participate, by their tendency to participate in events, or by their behaviour through their regular participation in an event. In the first case we deduce properties that allow external entities to do things with them, using them as instruments or means to obtain something. In the second case, we deduce properties that define their nature, in the sense that the tendency is viewed as a natural disposition to participate in some eventuality. In the third case, we deduce personality traits through the behaviour that they display.

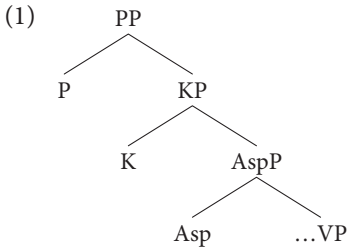
Importantly, we have proposed that there are PP layers expressing ability and tendency, but no PP layer that literally implies ‘habituality’: in all the cases, we have derived the habitual interpretation from another notion. This could be an accident of Spanish, in which case nothing could be deduced from it. However, it could also be a signal that there is a deeper property, specifically the deeper property that habituality is a property that can be exclusively defined in the situation domain – delimited by the presence of AspP, and therefore that deverbal adjectives built from event essences cannot codify it directly.

Therefore, in the next chapter we will take a deeper look at the case of adjectives with episodic interpretations, where we will argue that the base gets into the situation domain.

## On the episodic reading of participles

### 1. Overview of the analysis

This chapter does not provide a full account of participial structures, a category that encompasses many different constructions. It rather concentrates in integrating participles within the general analysis of deverbal adjectives, focusing on the property that participial deverbal adjectives might have episodic readings. The core of the analysis is the following: the participial morpheme minimally differs from other verbalisers in that it can select a verbal base that is projected up to AspectP.



As discussed in Chapter 6, §2.2, Asp has the semantic function of instantiating an event description in particular times and worlds. The presence of Asp, then, instantiates an event, and for this reason a participle has an episodic reading where it entails actual participation in an event corresponding to the base.

- (2) un visita-d-ísimo museo  
 a visit-part-SPLT museum  
 ‘a very visited museum’

We saw in Chapter 6, §4.3 that two morphemes, *-nte* and *-dor*, allow in a few instances episodic readings. Within my account, the reason for this is that these exponents are historically related to participles, and as such they can also allow embedding of an AspP below KP.

- (3) a. un Cristo yace-nte  
 a Christ lie-NTE  
 ‘a Christ that is lying’  
 b. un hombre conoce-dor de sus defectos  
 a man know-DOR of his faults

Thus, in this analysis the only difference between episodic and non-episodic deverbal adjectives is whether the adjectival structure can embed AspP or not, with only so-called participial morphemes being able to embed that instantiating projection.

## 2. What this chapter is not about

The literature of participial formation and participle structures is simply too extensive to do it justice in one single chapter within a monograph. Since Wasow's (1977) study proposing two classes of participles – adjectival and verbal, plenty of studies have concentrated on participles from two perspectives. The first one is more taxonomic, as an attempt to provide a classification of all the available classes of participles, their readings and the grammatical properties that are associated to these readings (see for instance Luján 1981; Levin & Rappaport 1986; Emonds 2006; Porroche 1988; Bosque 1999; Marín 1997, 2000, 2009; Kratzer 2000; Embick 2004; Di Tullio 2008, to name just a few). The second one relates to the first, but is more theoretical in nature: whether the established difference between adjectival and verbal participles supports a lexicalist approach to morphology or can be interpreted by the quantity of verbal projections that the base of the participle contains (Embick 2004; Anagnostopoulou 2003; Alexiadou & Anagnostopoulou 2008; Gehrke & Grillo 2009; Gehrke 2011, 2012, 2013, 2015; Sleeman 2011, 2014; McIntyre 2013; Bruening 2014, among many others).

In a sense, this is not a chapter on participles, but a chapter on how the existence of participles fits within the general picture that we have presented in the rest of the book. A big part of the literature refers to the discussion of the limits between the 'adjectival' use and the verbal use of the participle, including debates with respect to which tests are the best to differentiate between the two cases. This is not surprising, given the difficulty in providing a positive set of characteristics that define adjectives as a natural class (cf. Chapter 1): if finding a set of properties for adjectives as a grammatical category is difficult, we expect that any linguistic taxonomy that wants to diagnose the adjectival nature of an element in context will run into trouble when trying to determine the tests that single out this use.

Let us provide a few examples. In Wasow's (1977) seminal study, these were some of the properties that identified adjectival participles:

- a. Availability of *un*-prefixation: the negative prefix *un-* is assumed to attach only to adjectives (Siegel 1974), which means that a participle like *touched* can be verbal, but *untouched* should be adjectival. This criterion is adopted in Spanish through the equivalent prefix *in-*, but it does have the problem that some verbs do allow it (*in-habilitar* 'un-habilitate, disqualify; cf. Bosque 1999: 303).

- b. Selection by certain predicates, such as *seem*, *consider* or *appear*, which allow adjectival complements, but not verbal ones. Thus, *broken* could be verbal or adjectival, but in *The TV seems broken*, the participle would be adjectival.
- c. Preservation of idiomatic structures: adjectival participles do not preserve the idiomatic reading of idioms, as seen in (4): (4a), clearly an instance of a verbal participle, allows the idiomatic reading of *to keep tabs on someone*; (4b) loses the idiomatic reading.
- (4) a. Tabs seem to have been kept on the suspect.  
b. \*Tabs remain kept on the suspect.
- d. Availability of the argument structure and modifiers of the base verb, particularly in what refers to external arguments (5a), predicative modifiers (5b) and datives (5c) (see also Bosque 1999: 292–299). Only verbal participles would license these modifiers, while adjectival participles should not allow them.
- (5) a. Mary {was / \*seems} elected by the crowd.  
b. Mary {was / \*seems} elected president.  
c. The letter {was / \*seems} given to the director.

Finally, even though Wasow (1977) didn't mention it, degree is taken to be another difference in many works (cf. Emonds 2006, for instance).

- e. Degree modification is considered to be a sign of being adjectival for participles: in a structure such as *very broken* the participle should be adjectival.

There is disagreement about these tests in three senses: (i) there is no perfect correlation between the tests; (ii) some of the tests have been explicitly questioned as to their appropriateness for adjectives; (iii) some authors give different weight to each one of the tests, add other criteria or reject some of them.

Consider for instance *un*-prefixation: we have already seen in Chapter 6 that *ble*-adjectives can exhibit some argument structure, even when they carry the negative prefix *in-*. If the manifestation of some argument structure was incompatible with being adjectival, or with carrying a negative prefix, these data should not exist. For participles, Bruening (2014: 379) documents cases such as *undisturbed by Iraqi bombs* or *untaught by the original simian*. Also, with respect to degree modification, Bosque (1999: 297) does not deny that verbal participles allow degree modification, but points out that the modifier typically gives a frequency reading – not properly a degree-as-intensity interpretation – (6).

- (6) un museo muy visitado por los españoles  
a museum very visited by the Spaniards  
'a museum that is much visited by Spaniards'

In contrast, superlative forms in *-ísimo*, which also express degree, are taken by the same author (1999: 302) as a sign that the participle is adjectival.

- (7) un visita-d-ísimo museo  
 a visit-part-SPLT museum  
 ‘a very visited museum’

With respect to argument structure, Bruening (2014) explicitly denies that adjectival participles are unable to carry external arguments: participles in the context of *seem* can exhibit them (8). To the extent that stative passives are considered to contain adjectival participles (Wasow 1977; Levin & Rappaport 1986), there are well-known instances where they seem to contain arguments, including agents (9). In both cases, the non-specificity requirement on external arguments tends to be true.

- (8) a. No longer does Tim Thomas appear trained by Tim Hortons.  
 b. ...they seem taught by God more than by men [Bruening 2014: 379]
- (9) Este libro está escrito por Cervantes.  
 this book is written by Cervantes

Bosque (1999) places a lot of importance in his taxonomy on the availability of *by*-phrases as a test to determine whether a participle is verbal or adjectival, which leads him to the conclusion (Bosque 2014: 44) that so-called resultative participles are indeed verbal (contra the standard tradition, where the passive in 9 would be adjectival; cf. Kratzer 2000; Anagnostopoulou 2003; Embick 2004). In contrast, for Bruening (9) is adjectival, and one has to accept that adjectival participles – just like other adjectives derived from verbs, such as *ble*-adjectives (Chapter 7) or pseudo-relational adjectives (Chapter 6) – can carry argument structure.

These inconsistencies, debates and discussions simply reflect the fact with which we started this monograph: adjectives cannot be characterised as a natural class through their positive properties.

There are a lot of aspects of the grammar of participles that we will not discuss in this chapter. We will have very little to say about the relation between voice and participial formation, both in periphrastic passive structures and otherwise; we will have nothing to say about the well-known distinction between target-state and result-state participles (Kratzer 2000), or about the use of participles as predicates in so-called absolute constructions (Hernanz 1991; Marín 1996; Suñer 2013), or about the use of verbal participles with aspectual auxiliaries (Mittwoch 2008; Xiqués 2015). What we will concentrate on are the following set of questions:

- a. Under which conditions can participles be episodic, and what are the correlative properties associated with this?

- b. How does our system differentiate between participles without episodic behaviour and participles that are episodic?
- c. How do the other episodic uses of *-nte* and *-dor* relate to the episodic use of participles?

### 3. Two classes of deverbial adjectives and two classes of deverbial nouns

Given the difficulty in establishing clear criteria to differentiate between verbal and adjectival participles, it is necessary to make an explicit decision about the criteria that we will adopt here as a guiding principle; the decision will be somewhat arbitrary, but the arbitrariness will take into account what we have learnt from the previous chapters, and specifically from the study of *-ble*, *-dizo* and *-ón*. Assuming that words derived by these suffixes are not verbal, the interpretation of degree as frequently cannot be taken as a criterion, because it is also available with habitual adjectives (*muy olvidadizo* ‘very forgetful’ can be interpreted as ‘that very frequently forgets things’); expressing arguments, including agent arguments, would not work either, given the behaviour of *-ble*. We will concentrate on three properties: that the participle can combine with superlative degree *-ísimo* (10), that it can occupy a prenominal position (11) and that it can be the complement of a predicate like *considerar* or *parecer* (12).

- (10) a. educad-ísimo  
educated-ÍSIMO  
‘very polite’
- b. visitad-ísimo  
visited-ÍSIMO  
‘very visited’
- (11) a. un educado vendedor  
an educated seller  
‘a polite seller’
- b. una muy visitada ciudad  
a very visited city
- (12) a. Lo considero muy educado.  
him consider.1SG very educated  
‘I consider him very polite’
- b. Considero visitado un país en el que he estado fuera  
*consider.1SG visited a country in that have.1SG been out of.the*  
del aeropuerto.  
*airport*  
‘I consider visited a country where I have been out of the airport’ [google]



- c. La ciudad parece muy visitada estos días.  
 the city seems very visited these days  
 ‘It seems that the city is very visited these days’

With these criteria, we find two classes of ‘adjectival’ participles differentiated by their episodicity. The following list shows some adjectives with participial form (according to the terminology of RAE & ASALE 2009: §27.10k-ñ), where *educa-do* ‘educated, polite’ belongs:

- (13) *alarga-do* ‘lengthen-DO, long’, *aisla-do* ‘isolate-DO, lonely’, *agita-do* ‘shake-DO, nervous’, *anima-do* ‘cheer.up-DO, cheerful’, *complica-do* ‘complicate-DO, difficult’, *educa-do* ‘educate-DO, polite’, *eleva-do* ‘lift-DO, high’, *estudia-do* ‘study-DO, mannered’, *nega-do* ‘negate-DO, unable’, *organiza-do* ‘organise-DO, tidy’, *reduci-do* ‘reduce-DO, in a small amount’

None of these adjectives are episodic: something *alargado* ‘long’ does not need to have undergone a process of lengthening, as in (14). Something *complicado* ‘complicated’ does not need to have been complicated by someone (15), it can simply be difficult without having suffered a change of state through participation in an event.

- (14) Este valle es alargado.  
 this valley is lengthen-DO  
 ‘This valley is long’
- (15) La vida es complicada.  
 the life is complicate-DO  
 ‘Life is difficult’

Importantly, in contrast to the second class of adjectival participles, these combine with the copulative verb *ser* ‘be’, typically used for Individual Level predicates (cf. Luján 1981; Fernández Leborans 1995, 1999; Marín 2000; Arche 2006; Brucart 2012; Camacho 2012). The second class of adjectival participles combines with *estar*, the Stage Level predicate, and has an episodic reading.

- (16) a. Los verbos copulativos están estudia-d-ísimos  
 the verbs copulative are.SL study-DO-SUPL  
 ‘the much studied case of copulative verbs’
- b. la muy visita-da catedral  
 the very visit-DO cathedral  
 ‘the much visited cathedral’
- c. la transita-d-ísima calle  
 the walk-DO-sup street  
 ‘the street that is walked (by many)’

- d. un hombre casa-do  
a man marry-DO  
'a married man'
- e. una televisión averia-da  
a television break-DO  
'a broken-down TV'
- f. patatas demasiado fri-tas  
potatoes too fry-DO  
'too fried potatoes'

Here, the adjectival participles involve actual participation in the event: the case of copulative verbs must have been studied in the past, the cathedral must have been visited, the street must have been walked by specific people, the man must have gotten married, etc. Systematically, the verb *estar* is used here:

- (17) Está {estudiada / visitada / casada / averiada...}  
is<sup>estar</sup> studied / visited / married / broken-down...

Systematically, the meaning of this participle is compositionally the one expected from the base verb: if the base verb *estudiar* means 'study', the participle means 'studied'. Contrast this to the previous class, where non-compositional meanings abound: in that sense, *estudiado* means 'mannered, not spontaneous', *negado* means 'unable' and so forth.

Once we have singled out these two classes of 'adjectival' participles, the other traditional tests can be applied to them. Non-episodic adjectival participles systematically reject the expression of any argument structure (18); they reject adverbial and prepositional modifiers expressing aspect (19). We use the copulative structure so that the use of *ser* blocks the compositional interpretation (of course, an eventive passive reading should be avoided). These properties remind of the short-*ble* adjectives studied in Chapter 7.

- (18) a. \*Este hombre es educa-do por sus padres  
this man is<sup>ser</sup> educate-DO by his parents  
'This man is polite (\*by his parents)'
- b. \*Este hombre es entrega-do a su mujer.  
this man is<sup>ser</sup> give-DO to his wife  
'This man is devoted (\*to his wife)'
- c. \*Ese gesto es estudia-do con instrumentos psicológicos.  
this gesture is<sup>ser</sup> study-DO with instruments psychological  
'This gesture is mannered (\*with psychological instruments)'

- (19) a. \*Este hombre es abier-to en un momento.  
 this man is<sup>ser</sup> open-DO in a moment  
 ‘This man is open-minded (\*in a moment)’  
 b. \*Este hombre es organiza-do durante horas.  
 this man is<sup>ser</sup> organise-DO for hours  
 ‘This man is tidy (\*for hours)’

With respect to the episodic adjectival participles, they allow several types of argument and argument-related modifiers. It allows (non-specific) agents (20a), instruments (20b), and manner adverbs visible from the result (20c), as noted by Gehrke (2015) for German. Additionally, it also allows datives (20d). Notice that we put the participle as complement to *parecer* ‘seem’ to guarantee that it is not fully ‘verbal’.

- (20) a. Esta carta parece escrita por un bebé.  
 this letter seems written by a baby  
 ‘This letter seems written by a baby’  
 b. Esta carta parece escrita con pluma.  
 this letter seems written with pen  
 ‘This letter seems written with a pen’  
 c. Esta carta parece escrita apresuradamente.  
 this letter seems written hastily  
 ‘This letter seems hastily written’  
 d. El paquete parece entregado a su destinatario.  
 the package seems sent to its addressee  
 ‘The package seems delivered to the addressee’

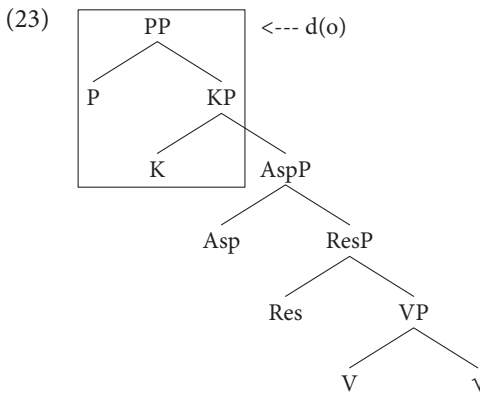
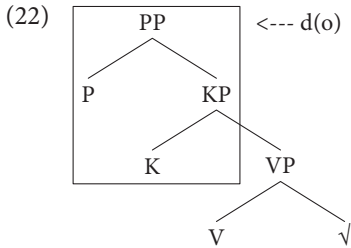
Similarly, this second type of adjectival participle also allows for aspectual modification, again provided that the modification is recognisable in the result state.

- (21) a. El trabajo parece escrito en un momento.  
 the essay seems written in a moment  
 ‘The essay seems written in a moment’  
 b. ...para conseguir que la escena parezca tomada durante  
 to achieve that the scene seems shoot-DO during  
 la noche.  
 the night  
 ‘in order to make the scene seem shot during the night’ [corpusdelespañol]  
 c. El pan parecía amasa-do durante horas.  
 the bread seemed knead-DO for hours  
 ‘The bread seemed kneaded for hours’

This set of properties remind of those exhibited by high-*ble* adjectives.

#### 4. The structure of adjectival participles in *-do*

Our proposal is that (22) reflects the structure of non-episodic adjectives in *-do*, while (23) corresponds to the structure of the episodic adjectives with the same suffix. Note that we propose that *-do* is introduced as the PP layer.



The main differences between the two structures is that the second carries Aspect, while the first lacks it. The second structure also projects some Aktionsart-related structure, which the first one lacks; the first structure, then, should be viewed on a par with the low *-ble* structure discussed in Chapter 7, §4.2. As we will see in Chapter 9, §4.3, Res(ult)P is not the only head that can appear within the verbal structure: other heads can appear – specifically, with adjectival participles coming from verbs which lack a result component, but then AspP must carry a value that creates a state from them.

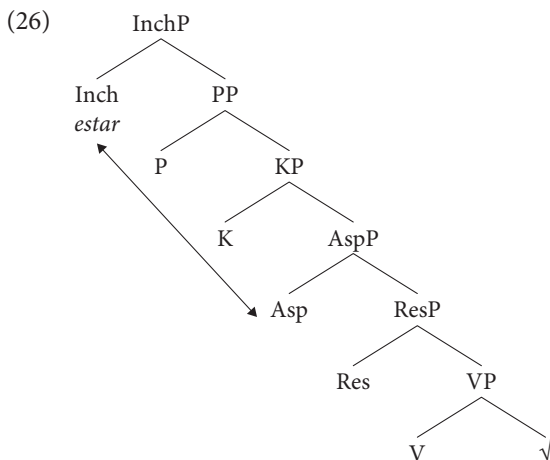
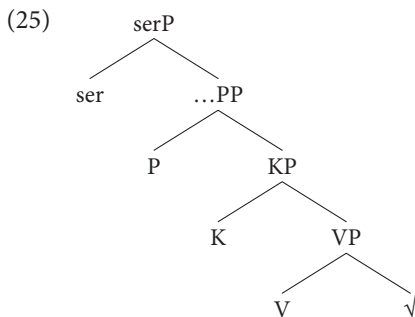
Having or lacking AspP does not just explain the episodicity of the second class of participles above the first. It also explains the combination with the copulative verbs in Spanish; let us see how.

- (24) a. Este niño es educa-do.  
 this child is<sup>ser</sup> educate-DO  
 ‘This child is polite’

- b. Este animal ya está educa-do.  
 this animal already is<sup>estar</sup> educate-DO  
 ‘This animal is already educated’

Brucart (2012) and Camacho (2012) treat the copula *estar* as an aspect-related head that carries an inchoative value – through a relation with a terminal coincidence preposition in Brucart (2012). It must establish a formal relation with a head marked as Aspect, without which it is not licensed in this context. *Estar* gives value to the aspectual head, turning it into an inchoative state (cf. Marín & McNally 2011). In contrast, *ser* lacks aspectual information, and does not combine with entities that lack aspectual information.

In our account, the contrast in (24) emerges naturally: the adjectives in *-do* lack aspect, and because of that they combine with *ser*. Adjectival participles, in contrast, carry AspP, and this forces them to combine with *estar*.



#### 4.1 Against Voice in participial formations

Several accounts have proposed that participles carry voice (McIntyre 2013, Bruening 2014, Alexiadou, Gehrke & Schäfer 2014), which has two roles: it imposes a passive meaning to the participle, and it licenses the external argument as a *by*-phrase. In our proposal, we do not associate *-do* to any voice projection, and we do not posit any type of Voice Phrase internal to the structure of the participle. In this section we will motivate this simpler structure, at least for the case of adjectival participles.

The first complication in proposing that adjectival participles codify voice is empirical: there is a set of participles which are interpreted actively with respect to their subject. A few of them are presented in (27) (cf. Borgonovo 1999; Varela 2002, 2003, 2008; Di Tullio 2008; Felú 2008; Armstrong 2016):

- (27) La considero {muy leída / bien comida / muy bebida / muy sudada}.  
 her consider.1sg very read / well eaten / very drunk / very sweated  
 ‘I consider her {well-read / well-eaten / very drunk / very sweaty}’.

In these examples, the subject of the predicate is interpreted, respectively, as the person that has read a lot, has eaten a lot, has drunk a lot (of alcohol) or has sweated a lot. There is no passive interpretation involved, and still the affix used is *-do*. We will not provide an analysis of active participles in *-do* here; see Armstrong (2016).

The second complication relates to how *by*-phrases are introduced, and specifically to the conditions for licensing that were discussed in Chapter 7, §4.1 in the context of passive complements of *-ble* adjectives. Gehrke (2015) discussed in detail that the agents of ‘adjectival’ passives are restricted to non-specific entities (‘known by everyone’), and when proper names are used they are taken as representative of some style that can be identified in the result state of the eventuality (‘painted by Picasso’). This contrasts with the verbal or eventive passives, where none of these requisites holds.

- (28) a. Juan fue atacado por este policía.  
 Juan was attacked by this policeman  
 b. Este cuadro fue pintado por mi cuñado.  
 this portrait was painted by my brother.in.law  
 c. El libro fue comprado por Pedro.  
 the book was bought by Pedro

Again, notice that the same affix *-do* is used in these cases. This, we believe, implies that *by*-phrases in adjectival passives are licensed through other means. Specifically, we will follow Gehrke (2015) in the claim that *by*-phrases have to

undergo pseudo-incorporation, a property that we want to relate to the lack of a proper Voice Phrase that licenses their presence structurally (cf. Chapter 9, §4.5 below). Eventive passives, in contrast – and as Bruening (2014) argues – do have a syntactically projected VoiceP, which licenses the by-phrase without the need for pseudo-incorporation.

In short, empirically we believe that it is necessary to dissociate *-do* from the presence of Voice.

#### 4.2 AspP does not involve a specific aspectual value

Similarly, it is empirically necessary to dissociate *-do* from any specific aspectual value. Even in the case of adjectival participles that contain AspP, the structural semantic role of this head is to make an event essence become a situation, without presupposing the specific aspectual value. Specific aspectual values depend on the specifiers hosted within AspP, or additional modifiers, but are not defined by the head. Bosque (2014) discusses the pair in (29), and notices that the participle is interpreted as a result state in (29a), from a telic verb codifying a change of state, but it denotes an ongoing situation in (29b), with a participle coming from the atelic verb *vigilar* ‘to watch over’.

- (29) a. Vi      la casa    construi-da.  
           saw.1SG the house build-DO  
           ‘I saw the house (that had been) built’.
- b. Vi      la casa    vigila-da.  
           saw.1SG the house watch-DO  
           ‘I saw the house (that was being) watched over’.

McIntyre (2013) also argues that it is not empirically correct to associate the participial morphology to one single aspectual value in terms of grammatical aspect. He offers an example like (30) as a case in which the participle expresses an in-progress event: that someone is driving that car badly. The facts also hold for Spanish.

- (30) The blue car seems badly driven, so keep away from it.
- (31) Ese coche parece mal conducido, así que aléjate de él.  
       that car seems badly driven so that keep.away from it  
       ‘That car seems badly driven, so keep away from it’.

Importantly, and we will go back to this property in the following section, it seems necessary in most atelic verbs to have a manner modifier in order to obtain the in-progress reading. However, the reading is possible.

- (32) a. una flauta torpemente tocada por alguien  
       a flute clumsily played by someone  
       b. un carro penosamente empujado por caballos  
       a cart effortfully pushed by horses

This excludes the possibility that AspP is specifically set to a result state interpretation, but the interpretation of Asp in the adjectival participles will be stative by default. Jaque (2014) has extensively argued that stativity is not a specific aspectual value defined by a set of features, but rather the standard interpretation that is obtained when the predicate lacks the information that would otherwise define it with a different value. This is, we argue, what happens in adjectival participles: the existence of an aspectual projection forces them to be interpreted by default as statives, and imposes a stative interpretation on the event essence that is embedded under it. There are four main types of states that are related to these participles:

- a. with telic verbs that have a result component, AspP picks that result state
- b. with telic verbs lacking the result component, AspP – sometimes with the help of a modifier like *recién* ‘newly’ – builds a state expressing the state of affairs that follows the culmination of the event
- c. with atelic verbs that denote a state, or express active maintenance of a state, AspP picks the state involved in the verb’s denotation
- d. with other atelic verbs in combination with manner modifiers, AspP gets an in-process interpretation, just like the progressive periphrasis, building an identifying state from the event.

### 4.3 The productivity of high adjectival participles

So how are the aspectual properties of adjectival participles built? Marín (2009) discusses them in full and notes that the two classes of verbs that produce them most productively are purely stative verbs (33) and telic verbs that contain a result state (34).

- (33) aburri-do ‘bore-DO, bored’, ama-do ‘love-DO, loved’, anhela-do ‘long-DO, longed for’, enfada-do ‘make.angry-DO, angry’, disgusta-do ‘displease-DO, displeased’, odia-do ‘hate-DO, hated’, preocupa-do ‘worry-DO, worried’...
- (34) amarillea-do ‘make.yellow-DO, yellowed’, coloca-do ‘place-DO, placed’, en-carcela-do ‘EN-jail-DO, imprisoned’, en-rojeci-do ‘EN-redden-DO, reddened’, interrumpe-do ‘interrupt-DO, interrupted’, roto ‘broken’...



In other words: the two classes of verbs that produce them most easily are those that contain a stative component in their lexical meaning. Ramchand (2008) argues that purely stative verbs are projections of InitP (35), and proposes that InitP is identical as a head to ResP: both are stative projections, and the difference between them follows from the configuration. In order to interpret a state as result, it has to be selected by ProcP; otherwise, it is interpreted as InitP.

- (35) [<sub>InitP</sub> [<sub>DP</sub> Juan] Init <know> [<sub>DP</sub> English]]

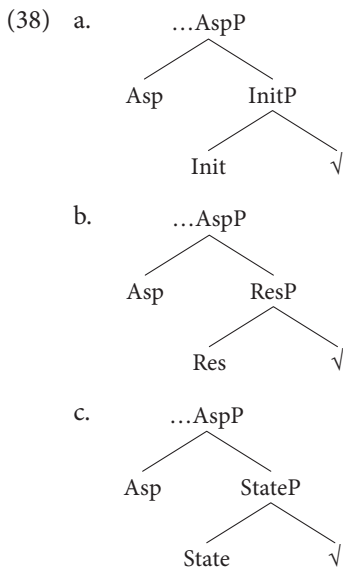
Evidence that the telic verbs in (34) have a result state comes from the available interpretation of for-phrases. With verbs that contain a result state, it can be interpreted as modifying the length of the result state – provided that it is conceptually reversible – (Fábregas & Marín 2012). Thus, in (36a), for instance, we can interpret that the substance was yellow for two hours – we are not forced to interpret that the substance got progressively more yellow for two hours.

- (36) a. Este producto amarilleó la sustancia durante dos horas.  
           this product made.yellow the substance for two hours  
       b. Las comunicaciones se interrumpieron durante dos horas.  
           the communications SE interrupted for two hours  
       c. Las negociaciones se rompieron durante dos semanas.  
           the negotiations SE broke for two weeks  
       d. Mi madre colocó la tarta en la ventana durante dos horas.  
           my mother placed the cake on the window for two hours

According to Fábregas and Marín (2017) some atelic verbs in fact also contain a stative component, and they denote the process of keeping that state unchanged (cf. Jackendoff's 1983 use of the primitive MAINTAIN). These verbs also productively produce adjectival participles (37).

- (37) vigila-do 'watch.over-DO', busca-do 'search.for-DO', gobierna-do 'govern-DO',  
       bloquea-do 'block-DO', sujeta-do 'hold-DO', sustenta-do 'maintain-DO',  
       sosteni-do 'hold-DO', reprimi-do 'supress-DO'

Thus, the generalisation is that the adjectival participle requires that the event expressed can be interpreted as a state. This is obtained through three types of structures whose common denominator is that AspP dominates a stative projection: InitP with purely stative verbs (38a), ResP with telic verbs that carry this head (38b) and a simple StateP with verbs that contain a Process head interpreted as MAINTAIN (38c).



With telic verbs that lack a (result) stative component, AspP needs to take a specific meaning that allows the situation to be interpreted as a state. Consider the contrasts in (39).

- (39) a. Parece \*(recién) nacido.  
 seems newly born
- b. Parece \*(recién) llegado.  
 seems newly arrived
- c. Lo considero \*(bien) comido.  
 him consider.1SG well eaten
- d. Lo considero ??(mal) conducido.  
 it consider.1SG badly driven

(39a) and (39b) have to do with *recién* ‘newly’. This element can allow a participle to be used as an adjectival one, as we see in the relevant examples, and in fact sometimes it can even license the prenominal position despite the fact that adjectival participles are stage level predicates and the prenominal position is associated to an individual level reading in many cases (RAE & ASALE 2009: §27.11e; see also Varela 2008; Armstrong 2016).

- (40) La \*(recién) nombrada presidenta  
 the newly appointed president  
 ‘The woman that has just been appointed president’

Plain adjectives, including those in *-do*, reject it, as noted in Varela & Martín García (1999: 5018):

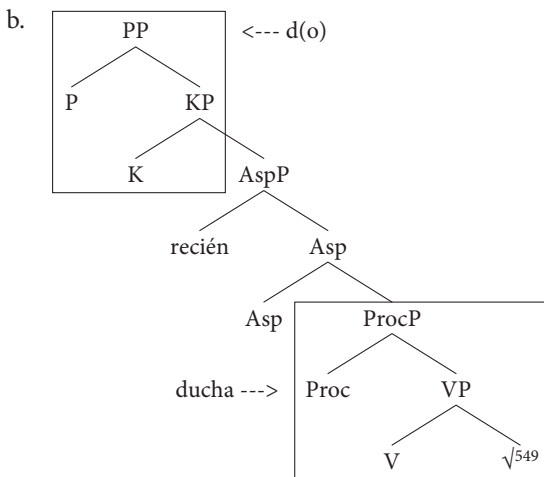
- (41) recién {hecho / \*enfermo}  
newly made / sick

In its meaning, *recién* marks temporal anteriority, creating a result state that is a consequence of the eventuality denoted by the base verb; just like the periphrasis *acabar de* ‘to finish of’ (García Fernández et al. 2006: 65), with which it shares a lot of properties, it adds that the eventuality has just finished.

- (42) a. Juan acaba de duchar-se  
Juan finishes of shower-SE  
‘Juan has just taken a shower’  
b. Juan está recién ducha-do.  
Juan is newly shower-DO  
‘Juan is freshly showered’

All these properties can be connected to each other if we treat *recién* as a specifier to AspP. In that specifier position, it creates a result state from the eventuality, allowing verbs that lack a stative component to be used as adjectival participles. Other adjectives do not combine with it because they lack AspP. (43b) represents it with the participle of the verb *duchar*, ‘to shower’, which lacks a stative component and where the verb only projects up to Proc.

- (43) a. Se duchó durante dos minutos.  
SE showered for two minutes  
‘He was taking a shower for two minutes’ (not \*‘She was showered for two minutes’)



Therefore, the role of *recién* in such adjectival participles is similar to the one that *ya* ‘already’ or *finalmente* ‘finally’ has in absolute participial constructions according

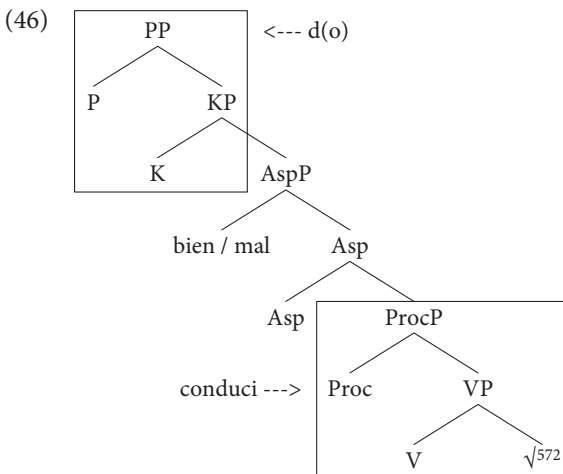
to Hernanz (1991): in her proposal the aspectual adverbial operates over the AspP projection and imposes a telic interpretation to an otherwise atelic verb.

- (44) a. <sup>??</sup>Conducido el coche, Juan se fue a casa.  
 driven the car, Juan SE went to home  
 Intended: ‘Once the car had been driven, Juan went home’  
 b. Ya conducido el coche, Juan se fue a casa.  
 already driven the car, Juan SE went to home  
 ‘Once the car had been driven, Juan went home’

With respect to (38c) and (38d), the adverbial modifiers there carry a manner interpretation. As in the examples that McIntyre (2013) discusses – cf. (32) above, these modifiers trigger an in-progress interpretation that is reminiscent of the progressive periphrasis with *estar* + gerund, which is also stative in nature.

- (45) a. El coche está siendo mal conducido.  
 the car is<sup>estar</sup> being badly driven  
 b. Ese coche está mal conducido.  
 that car is<sup>estar</sup> badly driven  
 ‘That car is badly driven’

We propose that the manner modifier is also licensed in AspP, and it triggers an interpretation where the aspectual node is seen as imperfective progressive. As in the progressive periphrasis, AspP here is interpreted as the identifying state for the event essence (Ramchand 2018: 60–64), that is, as a situation that exhibits all the external signs that allow the speaker to infer that the event essence is being instantiated in that particular moment. The manner modifier triggers the ongoing interpretation because only in its progression is it possible to determine the manner in which the event is being executed.



#### 4.4 The affix *-do* as a prepositional structure

Thus, our claim is that the participle is always the spell out of a prepositional structure, which explains why it cannot combine with prepositions – unlike infinitives – and why it can be used to turn a verb into an adjective.

The proposal that participles – and gerunds – are the spell out of prepositional structures over non-finite verbal forms has been made by Masullo (2008) and Gallego (2010). Gallego (2010) notes that if participles (and gerunds, which we will not discuss) are taken to be in essence infinitives dominated by a preposition, then the contrast in (47) follows naturally from the selectional restrictions of the main predicate.

- (47) a. Juan dijo haber sido atacado.  
 Juan say to.have been attacked  
 ‘Juan said that he had been attacked’  
 b. \*Juan dijo atacado.  
 Juan said attacked  
 Intended: ‘Juan said that he had been attacked’

If the verb *decir* ‘say’ selects DPs, not PPs, then (47b) is out simply because the participle is the projection of a category that is not selected by this predicate.

Second, historically several participles have been reanalysed as prepositions introducing DPs, as discussed in Masullo (2008). This is the case of *salvo* ‘except’, etymologically *salvo* ‘saved’ (48a); *excepto* ‘except’, from *excepto* ‘taken out, removed’ (48b); *incluso* ‘included’ (48c); *dado* ‘given’ (48d); *visto* ‘seen’ (48e).

- (48) a. salvo María  
 except María  
 ‘except for María’  
 b. excepto los lunes  
 except the Mondays  
 ‘except for Mondays’  
 c. incluso Pedro  
 included Pedro  
 ‘Pedro included’  
 d. dado este problema  
 given this problem  
 ‘due to this problem’  
 e. visto lo que ha sucedido  
 seen it that has happened  
 ‘due to what has happened’

To these two observations, we can add the argument that participial structures can be interpreted as locative modifiers. Consider the sentences in (49) – note that English *past*, related to *pass*, is also used prepositionally in the translation.

- (49) a. Mi casa está cruzado el puente.  
 my house is cross-ed the bridge  
 ‘My house is past the bridge’  
 b. Mi casa está pasado el río.  
 my house is pass-ed the river  
 ‘My house is past the river’

Interestingly, the participial structure can be substituted by *allí* ‘there’ in both cases:

- (50) Mi casa está allí.  
 my house is there

The participle is identifying a location, specifically one that one reaches once the landmark is passed; that it can be substituted by a place adverbial further supports that its label should be a PP.

#### 4.5 Pseudo-incorporation of *by*-phrases

In relation to the referential restrictions on *by*-phrases with participles, Gehrke (2015; cf. also García-Pardo 2017) notices that the restrictions that these *by*-phrases follow for German are the same that license pseudo-incorporation in nominals (Massam 2001). In pseudo-incorporation, a whole nominal phrase – not a single head, as in standard incorporation (Baker 1988) – is reanalysed as part of the verbal predicate. As a result of this reanalysis, the noun phrase must be opaque to discourse, which forces a non-specific interpretation. Moreover, the resulting complex predicate must be institutionalised within the community of speakers, which explains that proper names referring to individuals that are significant or noteworthy in that community are also allowed. In other words, *painted by Juan* – assuming Juan is not a famous painter – cannot be a complex predicate that denotes an institutionalised set of properties, but *painted by Velázquez*, where the proper name refers to a famous painter with a defined style, can be. Similarly, compare the *by*-phrases in (51): the first one is non-specific, and together with the participle, produces a predicate with institutionalised properties (clumsy, below standard, etc.); the second one refers to a famous person that is noteworthy in the particular type of eventuality denoted by the participle; the third one fails both criteria, and therefore cannot be part of an adjectival participle.

- (51) a. Parece escrito por {un niño / Chomsky / \*Luisa}  
 seems written by a child Chomsky Luisa  
 b. Parece pintado por {un mono / Warhol / \*Luisa}  
 seems painted by a monkey Warhol Luisa  
 c. Parece dirigida por {un sádico / Hitchcock / \*Luisa}  
 seems directed by a sadist / Hitchcock / Luisa  
 d. Parece cocinada por {una abuela / Ferrán Adrià / \*Luisa}  
 seems cooked by a grandmother / Ferrán Adrià / Luisa

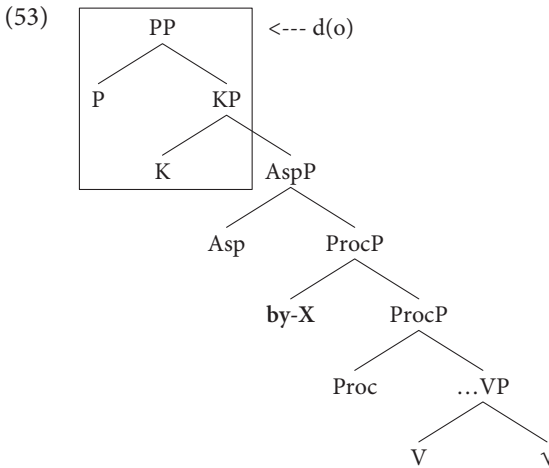
The question is why these by-phrases must be pseudo-incorporated.

Here we will follow García-Pardo (2017: 39). This author employs a well-known strategy in Neo-Constructionist approaches to how hybrid categories are built. A hybrid category is a form that has some properties of the category of its base, and some other properties of the category of the affixes that it combines with. Participles are hybrid categories in the sense that verbal participles have almost all the properties of verbs, while adjectival participles – as we have seen – have only some of those verbal characteristics. The strategy is to propose that the verbal projections are impoverished in the case of the forms that behave less as verbs and more like ‘adjectives’. A verbal participle would contain all the projections that build the lexical verb, and because of that they have no referentiality restrictions on the by-phrase.

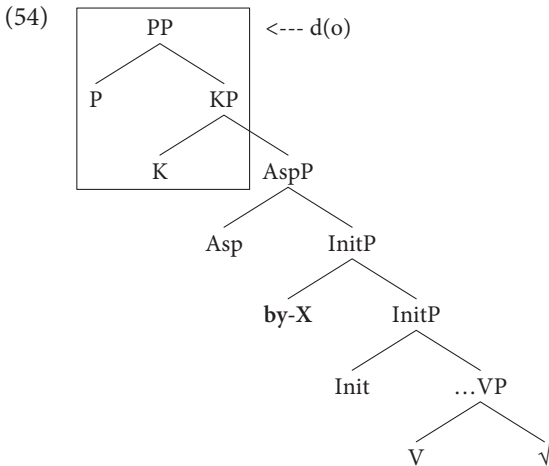
- (52) El libro fue escrito por Luisa.  
 the book was written by Luisa

In contrast, an adjective with participial form would almost completely lack verbal structure, and because of that they reject any type of by-phrases. Adjectival participles lie somewhere in between.

García-Pardo (2017) suggests, specifically, that adjectival participles built from eventive verbs only project up to ProcP, with InitP missing from their internal structure. The reason that by-phrases with adjectival participles have to be pseudo-incorporated is that they are not licensed by InitP, the head that would normally introduce agents. Adjectival participles coming from eventive verbs project maximally up to ProcP, and given that this head does not license agents syntactically, the by-phrase in combination with them can only be licensed through pseudo-incorporation.



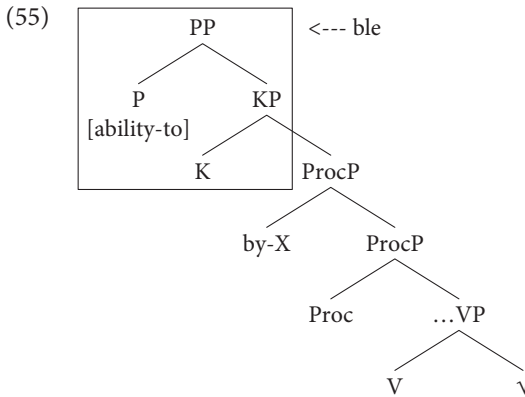
In contrast, eventive passives would project the whole structure of the eventive predicate, including InitP. We follow García-Pardo (2017) in also treating these by-phrases as adjuncts, but see Collins (2005).



The idea that the absence of InitP in the internal projection of a verb that otherwise carries it makes the participle behave less like the base verb and more ‘adjectival’; of course the ‘adjectival’ behaviour is simply the label that tradition has given to the cases where the verbal behaviour cannot be displayed, simply because adjectives lack positive properties that define them as a natural class.

Similarly, in *-ble* adjectives we find the same restrictions on agents, and the reason, again, is that the base verb projects only up to ProcP, resulting in the passive reading associated to the modal uses.





#### 4.6 The verbal nature of low adjectival participles

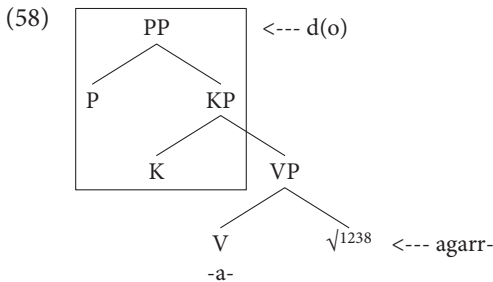
Let us finish this section by briefly discussing the structure for the low adjectival participles. The only verbal property that they display is morphological: they contain a theme vowel.

- (56) a. agarr-a-do  
 catch-ThV-DO  
 'stingy'  
 b. educ-a-do  
 educate-ThV-DO  
 'polite'

Proposing that the segment *-a-* in these formations is something else than the theme vowel characteristic of verbs misses two generalisations. The first one is that, even though the participle does not act like a verb, the base can be used as a verb. This is unlike the case of formations like *alcalde-a-ble* 'major-ThV-BLE, that can become a major', where there is no corresponding verb \**alcaldar*. The second is that the segment always corresponds to the theme vowel that marks the conjugation class on the base verb.

- (57) a. agarr-a-r  
 catch-ThV-inf  
 'to catch'  
 b. educ-a-r  
 educate-ThV-inf  
 'to educate'

Consequently, we must project enough verbal structure that the theme vowel is present, but no more than that. This is, we argue, what is obtained precisely by proposing that VP is present but all the Aktionsart-related projections that introduce lexical aspect and introduce arguments are missing – remember Chapter 6, §2, where we motivated the need to dissociate these projections from the VP layer through examples taken from the nominalisation domain. The theme vowel is projected in V, but no more structure is present.



## 5. Episodic adjectives with *-nte* and *-dor*

As we already noted in Chapter 6, §4.3, there are also adjectives with episodic interpretation in the case of *-nte* and *-dor*. The goal of this section is to analyse such cases. In short, we will argue that the historical fact that these two affixes are related to participles makes them able to select structures where the verb is projected up to AspP.

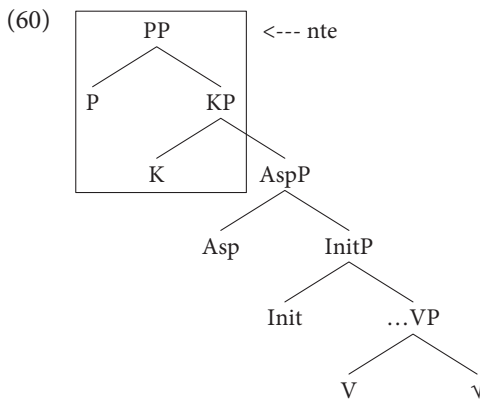
### 5.1 Episodic adjectives with *-nte*

(59) shows a few examples where adjectives in *-nte* are interpreted episodically.

- (59) a. suelo brilla-nte  
 floor shine-NTE  
 ‘floor that shines’
- b. un libro pertenecie-nte a Juan  
 a book belong-NTE to Juan  
 ‘a book that belongs to Juan’
- c. un Cristo yace-nte  
 a Christ lie-NTE  
 ‘a Christ that is lying’

- d. una figura suplica-nte  
 a figure beg-NTE  
 'a figure that is begging'
- e. San Juan bautista ora-nte  
 Saint John Baptist pray-NTE  
 'Saint John the Baptist praying'
- f. un puente colga-nte  
 a bridge hang-NTE  
 'a hanging bridge'

Why do such forms exist? Our claim is that they are possible because *-nte*, just like *-do*, can attach to structures that contain AspP. The episodic readings are represented in (60); see Chapters 6 and 8 for the non-episodic readings.



The reason is that *-nte* is historically related to a participle. The etymological origin of *-nte* is the so-called active participle in Latin in *-ns*, *-ntis*. According to Leumann and Hoffmann (1928: 602) this form had a mixture of verbal and adjectival properties that made it behave as the equivalent of the modern Spanish gerund. Penny (1993: 215) notices that in the *Disputa del Alma y del Cuerpo* (written c. 1201) there are *-nte* forms that are still used as present participles (61) where modern Spanish would use gerunds (62):

- (61) un sabado esie-nt, domingo amanezie-nt / ui una grant vision  
*a Saturday be-NT, Sunday dawn-NT had.1SG a big vision on*  
 en mio leio dormie-nt  
*my bed sleep-NT*  
 'Being Saturday, dawning Sunday / I had a great vision sleeping on my bed'
- (62) Siendo sábadó, amaneciendó el domingo, tuve una gran visión durmiendó en  
 mi cama.  
 Being Saturday, dawning the Sunday, had.1SG a great vision sleeping on my  
 bed

Lapesa (1981: §56.3) documents in the same period uses of *-nte* as present participles in Berceo and other authors (63). Eberenz (2004) points out that during the 15th Century some authors tried to rescue these formations as active participles, but the form had already lost in favour of gerunds.

- (63) a. Todos eran creye-ntes que era transida. [Apolonio]  
 all were believe-NTE that was gone  
 ‘All believed that she was gone’
- b. murmura-ntes estamos [Berceo]  
 murmur-NTE are.1PL  
 ‘We are murmuring’
- c. merezie-ntes érades [Berceo]  
 deserve-NTE were.2PL  
 ‘You were deserving’

It is noticeable that in all the episodic cases, the *-nte* adjective is interpreted statively, just as in the case of *-do* participles. Above, the examples (58a, 58b, 58c and 58f) come from stative bases, and the corresponding adjectives reflect this same stative interpretation. Other relevant examples (taken from Cano Cambroneró 2013) for verbs that are always stative or have a stative reading which is selected by the adjective in *-nte* are in (64).

- (64) a. un camino descende-nte  
 a road descend-NTE  
 ‘a descending road’ (cf. *El camino descende por ahí* ‘The road goes-downward around there’)
- b. un camino ascende-nte  
 a road ascend-NTE  
 ‘an upward road’ (cf. *El camino asciende por ahí* ‘The road goes-upward around there’)
- c. un hombre amante de los libros  
 a man love-NTE of the books  
 ‘a book-loving man’
- d. una mujer dolie-nte  
 a woman hurt-NTE  
 ‘a woman that experiences pain’
- e. una estrella lucie-nte  
 a star shine-NTE  
 ‘a shining star’

With non-stative verbs, the interpretation replicates the one obtained by combining the base verb with the progressive periphrasis in the gerund. In eventive verbs that contain some duration, the in-progress interpretation where the adjective expresses

the identifying state is typical. This is the case in examples (59d, 59e) above, where they express similar meanings to *está suplica-ndo* ‘is begging’ and *está ora-ndo* ‘is praying’, respectively. (65) presents some other cases; this use is particularly frequent in the title of paintings and sculptures.

- (65) a. herida sangra-nte  
wound bleed-NTE  
‘a bleeding wound’  
b. Aquiles asalta-nte  
Achilles attack-NTE  
‘Achilles attacking’  
c. la bella durmie-nte  
the beauty sleep-NTE  
‘Sleeping Beauty’  
d. Alejandro celebra-nte  
Alexander celebrate-NTE  
‘Alexander celebrating’  
e. Dalila danza-nte  
Dalilah dance-NTE  
‘Dalilah dancing’

Of particular relevance for the claim that the stative interpretation obtained in these cases is the one we would expect from the progressive periphrasis comes from the interpretation of the adjectives in (66), which originally come from achievements without any duration.

- (66) a. entra-nte  
enter-NTE  
‘that will begin to be’  
b. salie-nte  
exit-NTE  
‘that will stop being’  
c. nacie-nte  
be.born-NTE  
‘nascent, rising’

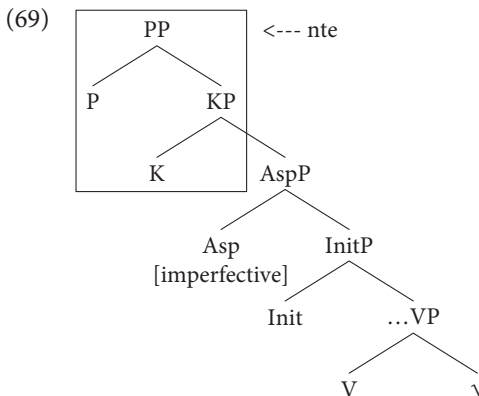
The three adjectives, as noted in Cano Cambronero (2013: 111–115), have a preparatory stage interpretation: they do not express the ongoing event, but express the state that precedes the achievement itself. Thus, (67a) means ‘the person that is about to become a president’; (67b) means ‘the person that is about to quit as a president’, and (67c) means ‘the State that is about to be born’.

- (67) a. el presidente entra-nte  
the president enter-NTE  
b. el presidente salie-nte  
the president exit-NTE  
c. el estado nacie-nte  
the State be.born-NTE

This is the same reading that these achievement verbs obtain in the progressive (Piñón 1997).

- (68) a. Juan está entrando  
Juan is enter-ing  
'Juan is about to enter'  
b. Juan está saliendo  
Juan is exit-ing  
'Juan is about to exit'  
c. El bebé está naciendo.  
the baby is being.born  
'The baby is about to be born'

Historically, this connection between episodic *-nte* adjectives and progressive forms with the gerund is not surprising. We propose to implement it in the analysis by proposing that the AspP head that can combine with *-nte* is valued as Imperfective.



In combination with stative bases, nothing remarkable happens because states are, by definition, imperfective. When they combine with an eventive verb with a duration, the in-progress state is selected – excluding the starting and ending points of the event, and when the eventive verb lacks duration the preparatory state interpretation is created by coercion, just as is the case in the progressive periphrasis.

5.2 Episodic readings with *-dor*

A few adjectives in *-dor* also have episodic readings.

- (70) a. Juan, sabe-dor de esto...  
 Juan know-DOR of this  
 'Juan, knowing this...'
- b. una propuesta abarca-dora  
 a proposal cover-DOR  
 'a proposal that covers many things'
- c. una mujer admira-dora de la música  
 a woman admire-DOR of the music  
 'a woman that admires music'
- d. un hombre conoce-dor de sus defectos  
 a man know-DOR of his faults  
 'a man that knows his faults'
- e. el equipo gana-dor  
 the team win-DOR  
 'the winning team'
- f. un hombre merece-dor de un premio  
 a man deserve-DOR of a prize  
 'a man that deserves a prize'
- g. el equipo perde-dor  
 the team lose-DOR  
 'the losing team'

Historically, there is also a connection between agentive adjectives in *-dor* and participles. Latin agent nouns were formed on top of participial bases (Benveniste 1948), as (71)–(75) illustrates:

- (71) a. script-or  
 written-OR  
 'writer'
- b. script-us  
 written-nom.M  
(*scribere* 'to write')
- (72) a. act-or  
 done-OR  
 'agent'
- b. act-us  
 done-nom.M  
(*agere* 'to do')
- (73) a. deprecatur-or  
 warned.off-OR  
 'the one that warns off'

- b. deprecāt-us (deprecari 'to warn off')  
warned.off-nom.M
- (74) a. monit-or  
warned-OR  
'counselor'
- b. monit-us (monere 'to warn')  
warned-nom.M

This connection is not formally preserved in Spanish, where the suffix *-dor* (with individual exceptions, 75) does not select the participial stem, but the present stem (76).

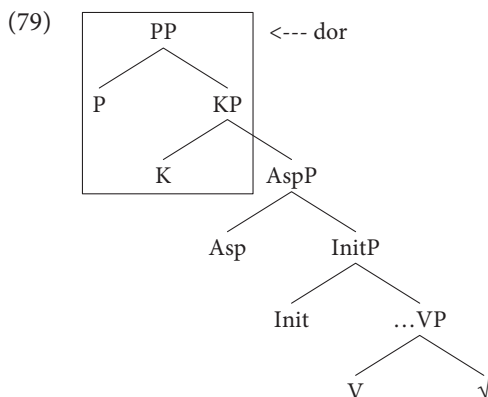
- (75) a. escri-t-or  
write-DO-DOR  
'writer'
- b. escri-to  
write-DO  
'written'
- (76) a. hace-dor  
make-DOR  
'that makes'
- b. hecho  
made
- (77) a. pone-dor  
lay-DOR  
'that lays eggs'
- b. pues-to  
lay-DO  
'laid'

Despite this difference in the formal requisites, *-dor* adjectives have been historically used as active participles. Lapesa (1981: §56.3) documents the following cases in *Mio Cid* and Berceo (13th Century), which parallel the *-nte* cases mentioned in (62):

- (78) a. temblar querié la tierra dond eran move-dores [Mio Cid]  
shake wanted the land where were.3PL move-DOR  
'the land they were leaving wanted to shake'
- b. arrancar moros del campo y seer segu-dor [Mio Cid]  
remove Moors from.the field and be hunt-DOR  
'to remove Moors from the land and to be hunting them'
- c. de todo fue el fijo después confirma-dor [Berceo]  
of all was the son afterwards confirm-DOR  
'the son confirmed it all afterwards'



As in the case of *-nte*, we propose that this connection with the participial form allows *-dor* to embed a structure where AspP is projected:



Unlike *-nte*, AspP does not carry a specific aspectual value. Note that it is the Aktionsart of the embedded predicate that determines the aspectual interpretation. In *gana-dor* ‘win-DOR’ and *perde-dor* ‘lose-DOR’ the interpretation is perfective: respectively, ‘that won’ and ‘that lost’; the bases are of course telic achievements. The rest of the cases above contain stative verbs, and the interpretation focuses on the ongoing state, not its termination or starting point (for instance, from *saber* ‘to know’, *sabe-dor* ‘know-DOR, that knows’).

With this, we finish our overview of deverbal adjectives in Spanish. The general picture can be summarised as follows:

- a. just like in the denominal domain, it is possible to grammatically diagnose both relational deverbal adjectives and qualifying deverbal adjectives. We have argued that the structural relation is identical to the one documented in the denominal domain: relational adjectives project up to KP, while qualifying adjectives additionally project PP.
- b. in the deverbal domain, there is a second relevant distinction, between episodic and non-episodic adjectives. Episodic adjectives are a subset of participles, those that embed AspP as part of the structure of the base.
- c. non-episodic adjectives, descriptively, can be classified in three groups: modal, dispositional and habitual, but habitual readings – we have argued – are always deduced from information contained in the subject or the event and they are never marked grammatically as distinct.

In the next chapter, we will take stock of what we have seen in this monograph in order to discuss the wider picture produced by the analysis of derived adjectives.

## Conclusions and further research paths

### 1. Main conclusions in the book

In this monograph I have argued that Spanish builds adjectives with the syntactic heads characteristic of prepositional structures, as Mateu (2002) suggested following Hale and Keyser (1993). This hypothesis has been explored through a detailed study of morphologically derived adjectives. We believe that looking at adjectives built over bases belonging to other categories is the best way to focus on the internal syntactic and semantic properties of the adjective. The reason is that the differences between the base and the adjective should be then due to the prepositional structure that we have hypothesised.

The hypothesis that prepositional structures underlie adjectives in Spanish explains several wide-ranging properties of derived adjectives. First of all, it explains in a principled way why relational adjectives should exist, and moreover why the properties that they display are independent of whether the base is nominal or not – as argued in Chapters 3 and 6 with respect to relational adjectives. We have argued that relational adjectives are deficient prepositional structures that only project up to KP, a head that defines a general relation with another entity without determining any conceptual domain to restrict it. In contrast, qualifying adjectives project the lexical prepositional layers, which we have labeled PP as a covert term for both ‘preposition’ and ‘property’, and which include a Path-like projection where the scale is syntactically present. Additionally, they are able to project PredP to introduce a subject of predication.

- (1) a. [KP K [Base]]  
 b. [PredP Pred [PP P [KP K [Base]]]]

Second, we have argued that the different classes of qualifying adjectives are not differentiated in structural syntactic terms – as discussed in Chapters 5 and 7. They are distinguished by the semantic information provided by qualia structure (Pustejovsky 1995). In denominal adjectives there are precisely four classes because they correspond to the four types of qualia that have been independently identified in the study of conceptual semantics (2). Deverbal adjectives, depending on the suffix, identify the agentive, the telic or the constitutive quale, determining the specific reading attending to other conceptual properties such as the notion of behaviour, humanness and the internal or external causation of events.

- (2) a. Possessive and habitual adjectives – Constitutive quale
- b. Similitudinal adjectives – Formal quale
- c. Causative and dispositional deverbal adjectives – Agentive quale
- d. Dispositional denominal and modal adjectives – Telic quale

Some of the adjectivalisers can be even more specific than the division in (2), or vaguer, activating more than one qualia. In this second case, we have seen that two relations are recurrent. In denominal adjectives, many affixes produce both possessive and similitudinal adjectives – the two qualia that do not have any agent-like entailment; in deverbal adjectives, several affixes produce both modal and dispositional adjectives – relating respectively to the telic and agentive quale.

This summarises the extended argument that we have built in Chapters 3 to 8 in order to empirically support the hypothesis that Spanish adjectives are prepositional structures. However, this has not been the only issue discussed in this book.

In Chapters 6 to 9 a secondary issue has been to explain why adjectives that do not directly relate to participles have non-episodic readings even when built from verbs that can be eventive. We have rejected an analysis based on modal operators because it would treat this property as a lexical accident and it would be virtually impossible to implement for the case of deverbal relational adjectives. Instead, we have accepted a view of domains where the verbal domain defines Event essences without time and world parameters. Episodicity emerges when one abandons the verbal domain and moves to the domain of situations, something that syntactically implies projecting at least grammatical aspect (AspP) in the verb. This produces two types of deverbal adjectives, depending on whether they are episodic or not.

- (3) a. [PP P [KP K ...[VP V [ $\sqrt{\quad}$ ]]]]
- b. [PP P [KP K [AspP Asp ...[VP V [ $\sqrt{\quad}$ ]]]]

Suffixes able to produce participles – and thus episodic readings – are those that can embed AspP. The difference between the two types of adjectives, episodic and non-episodic, thus relates to a difference in the height at which different suffixes are introduced.

Beyond this, and going down to the individual classes, we have argued for a syntactic decomposition of the derived adjectives where their ultimate properties come from the interaction between three components:

- a. The syntactic structure, which is the one that most strongly determines the distribution, interpretation and grammatical properties of the derived adjective classes: it determines whether they will be used as predicates or not, whether they allow negation, what type of reading they will trigger through the choice of PP, whether they have the distribution of paths or places, whether they are episodic or not, etc.

- b. The spell out procedure, which determines which heads can be spelled out by one single affix and what syncretism options are available through a combination of the Exhaustive Lexicalisation Principle, Phrasal Spell Out and the Superset Principle
- c. The conceptual semantics associated to the individual exponents, which determine further properties of the words produced by that affix, such as whether they would express an excessive quantity component or whether they would relate the base to a specific ideology.

## 2. The path forward

The Spanish grammarian Salvador Fernández Ramírez (1896–1983) used to describe the job of a linguist as a *búsqueda infinita* ‘infinite search’: as soon as one believes they have found an answer, the new answer triggers new questions that couldn’t be asked before. This section concentrates on some of the questions that are raised by the hypothesis that Spanish adjectives are prepositional structures.

### 2.1 The position of adjectives and the position of prepositional structures

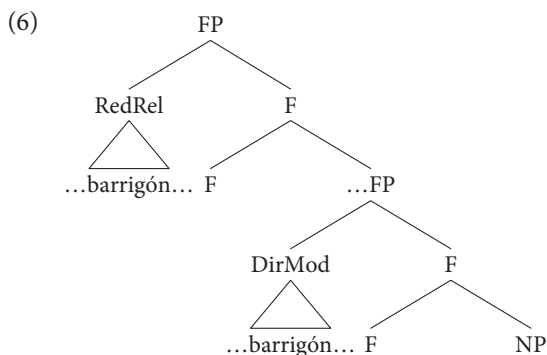
On the surface, the position of adjectives and the position of prepositional structures is not the same. For the case of relational adjectives, they coincide perfectly with bare noun-PPs introduced by *de* ‘of’ because they are not predicates, but there is an asymmetry between qualifying adjectives and prepositional structures similar to them.

- (4) a. mi barrig-ón amigo  
my belly-ÓN friend
- b. mi amigo barrig-ón  
mi friend belly-ÓN  
‘my big-bellied friend’
- (5) a. \*mi de gran barriga amigo  
my of big belly friend
- b. mi amigo de gran barriga  
my friend of big belly  
‘my friend with a big belly’

While qualifying adjectives can precede (4a) or follow (4b) the noun, with well-described differences in meaning, a prepositional phrase that on the surface expresses the same meaning is restricted to post-nominal position (5). From the

perspective that essentially the same syntactic structure underlies both the adjective and the PP structure, this asymmetry deserves independent analysis.

We will not offer a fully-fledged answer to this problem, but we believe that we can suggest some directions that might provide a principled answer. The first property that should be noted is that, semantically, the adjective and the PP are equivalent in that they describe a property of the head noun and the property is of the same type. Assuming a tight relation between interpretation and syntactic structure, this suggests that the two modifiers cannot be generated in very different positions. If we assume Cinque (2010), in the adjective the prenominal position is related to direct-modification, and the postnominal position is related to a reduced relative clause structure. The area where direct modifiers are introduced is syntactically lower than the one where reduced relative clauses are introduced. If the constituent containing direct-modifiers and the NP moves to a position higher than reduced relative clauses, the linear order is automatically derived.



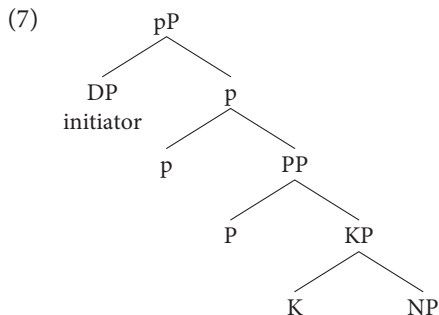
The two types of modifiers are differentiated by several properties, among them that direct modifiers are related to Individual Level readings. Individual Level readings characterise the entity modified independent of its temporal and locative slices. In other words: while in (4b) one could say that having a big belly is not a characteristic property of the friend, in (4a) this property classifies the friend among individuals that have a big belly.

Importantly, in (5b) the Individual Level reading is possible – and in fact, quite salient. This suggests that the syntactic position for direct modifiers should also be available for prepositional phrases, even if in Spanish they must linearise to the right of the noun. The position occupied by the prepositional phrase – compulsorily to the right of the noun – seems to be independent of its interpretation, then.

The most intuitive way to interpret this dissociation between position and interpretation is to treat the position of prepositional phrases as a Phonological Form (PF) property. PP-position would then be a property dictated purely by

the component where objects are linearised – without real syntactic or semantic consequences.

If the problem has to do with the linearisation, it is tempting to relate the asymmetry between adjectives and prepositional phrases to another fact about linearisation where they differ. Starting from basically the same structure (ignoring NumP and other possible projections between the preposition and the noun) (7), the adjective linearises its head as a suffix – that is, to the right of the structure – while the prepositional phrase linearises the head to the left, as a preposition.



- a.  $[[\text{barrig-}]_{\text{NP}} \text{ón}]_{\text{K+P+P}}$   
 b.  $[_{\text{P+P}} \text{con } [_{\text{NP}} \text{barriga}]]$

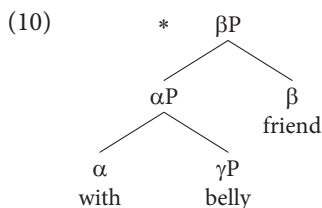
On the surface, then, the adjective is a structure where the head is final, while the prepositional phrase is a structure where the head is initial. Thus we can reduce the asymmetry to the statement in (8):

- (8) A modifier whose head is initial cannot be linearised to the left of an NP

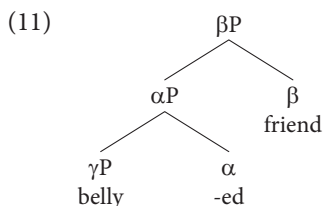
This is reminiscent of the Final-over-Final constraint (Biberauer, Holmberg & Roberts 2007, 2008, 2014), only that stated in PF terms.

- (9) A head-initial structure cannot be dominated by a head-final structure.

In a modification structure, the NP must be interpreted as the head that is being modified at the semantic interface. If the prepositional structure preceded the noun, we would obtain a structure like (10), which violates the Final-over-Final constraint.



However, in pure linearisation terms, when the modifier is an adjective, the head is final and the resulting structure is compatible with the Final-over-Final constraint.



This approach forces a reinterpretation of the constraint in pure interface terms, because obviously (10) and (11) are not identical to the syntactic structures that introduce modifiers. However, we believe that the asymmetry between linear position and syntactic behaviour in the case of prepositional phrases grants this move. This is the line of research that we believe could lead to a general explanation of the asymmetry between prepositional phrases and adjectives: just the effect of a constraint in the linearisation of structures at PF.

## 2.2 Agreement, adjectives and determiners

In the discussion of the coordination properties of relational adjectives at the end of Chapter 3, we argued that agreement is suspended in their case (12a) precisely because they are not predicates (12b). Qualifying adjectives, we suggested, must agree because they come endowed with PredP and in Spanish PredP is the head that carries the agreement of an adjective.

- (12) a. los embajadores<sub>PL</sub> mexicano<sub>SG</sub> y argentino<sub>SG</sub>  
 the ambassadors Mexican and Argentinean  
 ‘the Mexican ambassador and the Argentinean ambassador’
- b. \*los embajadores<sub>PL</sub> alto<sub>SG</sub> y bajo<sub>SG</sub>  
 the ambassadors tall and short  
 Intended: ‘the tall ambassador and the short ambassador’

The question is how general the claim that adjective agreement is contained in PredP can be. Does one want to claim that all agreeing adjectives contain PredP, including the apparently non-predicative cases in (13)?

- (13) a. un presunto asesino  
 an alleged murderer  
 ‘an alleged murderer’

- b. un antiguo militar  
a former military  
'a former military'
- c. un elegante bailarín  
an elegant dancer  
'someone that dances elegantly'

In Chapter 2, §2 we presented the proposal advocated by several semanticists that some of these adjectives should be considered predicative, but we pointed out that this approach is forced to posit a high number of silent variables inside the NP structure. Moreover, while some of these adjectives syntactically support the view that they can be directly predicated from nouns (remember Larson's 1998 *His communism is alleged* example), this does not extend to all cases (*\*His role as a military is former*).

Additionally, the approach would be very difficult to extend to number and gender agreement in determiners and quantifiers such as *el* 'the', *un* 'a' or *mucho* 'many/much', which display the same morphological patterns as adjectives but are not used as modifiers in any obvious sense.

One is, then, faced with the conclusion that even if the locus of agreement in qualifying adjectives could be PredP, agreement features can appear in other heads – which is in fact something that we accepted in Chapter 2, §3.3 when discussing the difficulty in defining adjectives through agreement. We still lack a theory about which heads can host agreement, or beyond this a theory about why some natural languages mark agreement overtly. The study of derived adjectives helps us focus the question in an interesting way: if agreement in PredP is used to mark the relation between the subject and the predicate, what is its role in determiners and non-predicative adjectives? At this point, we cannot offer any answer to this question, but we believe the question is real.

### 2.3 Affix selection

Throughout this monograph we have seen that many cases that were previously conceived as pure morphological allomorphy can be re-stated in semantic or syntactic terms, making morphology unnecessary to deal with them. Some affixes are chosen depending on the nature of the P head that is involved in building them. For instance, *-il* is only used when the head activates the formal quale, *-udo* is used with a P head that activates the constitutive quale, and *-oso* is used when the P layer does not specify which quale is activated. In other cases, there is a syntactic restriction that allows a choice between affixes: *-ble* and *-dizo* are differentiated in dispositional



readings because *-ble* imposes the requisite that in the verbal base the external and the internal argument must be distinct, while *-dizo* does not have this restriction. Thus, internally-caused events can only make dispositional adjectives with *-dizo*, while *-ble* specialises in the externally-caused events. Finally, in some other cases the Exhaustive Lexicalisation Principle explains the choice of adjectivaliser: if *-ical* can only identify the KP layer, it cannot be used in a qualifying adjective because the PP layer that it contains would not be spelled out.

However, there are still many cases where there is more than one possible affix that could have been introduced, given the structure. One first sub-case is lexicalised situations where the productivity of the affix is not high in a particular context. We have argued that such cases are lexically stored (for instance, *-dero* as a modal adjectivaliser; Chapter 7, §5).

A second sub-case is when the conceptual semantics of the base favours one affix over the other, as for instance in the case of *-ero* in possessive or similitudinal adjectives (Chapter 5, §4.1), where the bases are almost always those that denote specific time periods.

The third and final sub-case is more recalcitrant: instances where the affixes seem to be identical both in terms of the features spelled out and the conceptual semantics associated to them, or to the base. The best illustration is perhaps relational adjectives (Chapter 3, §2), where the suffixes *-ico*, *-al*, *-és*, *-eño* or *-ista* are arbitrarily chosen by different bases, without clear systematic differences in the type of base or the type of relational adjective produced.

All these cases require a certain amount of lexical listing, either by storing whole forms or by introducing idiosyncratic selectional restrictions in the entries of the exponents involved. The situation might not be very different from what is required with syntactic idioms such as those in (14), where one has to guarantee for instance that *kick* will combine with *bucket* and not *can*, *vessel*, *pail* or *scuttle*.

- (14) a. to kick the bucket ('die')  
 b. to burn the midnight oil ('to work late')  
 c. to cry over spilt milk ('to regret')  
 d. to steal someone's thunder ('to take credit for someone's work')

However, this means that our system still has to accept a certain degree of lexical listing, and that the competition between exponents cannot purely be reduced to differences reflected in the syntax or semantics of the word.

## 2.4 Parasynthesis, theme vowels and other current mysteries

Our analysis has briefly touched upon three traditional morphological problems that have been left unresolved.

The first one is the nature of parasynthetic formations, those where both a prefix and a suffix must combine with the base in order to produce a word from a different category. Even though we have not proposed an analysis of parasynthesis, we have noted that the cases in adjectival formation are remarkably regular: they all involve the suffix *-ado* in its possessive or similitudinal reading, and they all involve the prefix *a-*. We have suggested that this might indicate that the P layer for possessive and similitudinal adjectives might itself be prepositionally complex in a way that the prefix and the suffix spell out distinct layers, with the base linearising to a position between the two. The main reason why we have not developed this suggestion is that it remains to be seen how an account along these lines fares in the case of verbal parasynthesis, where the picture is much more complex in terms of the types of prefixes allowed, the suffixes involved and the readings obtained with them (see Serrano Dolader 1995 for a detailed overview). This issue, and its relation to verbalisations in the general sense, probably deserves its own monograph.

We have also found situations where the theme vowel has been problematic for analysis. We have provided independent evidence that AspP should not be postulated inside denominal *-ble* adjectives such as *alcald-a-ble* ‘major-ThV-BLE, that can become a major’. Given that there is no verb related to the base, this means that below the structure of *-ble* there are simply no projections to host the theme vowel. One could have proposed – by brute force – that Spanish has a second modal affix *-able* that happens to be historically related to the deverbal one, and that the segment /a/ is just part of its phonological shape. This solution would be empirically arbitrary. First, a similar situation, as we saw, emerges with the nominalising use of *-dor*, and second, that solution cannot explain why the suffix could not have been *\*-oble* or *\*-uble*, with vowels that do not coincide with conjugation class markers.

Of course, theme vowels are one of the main arguments used by Lexicalist theories to argue that there are purely morphological facts that language must make room for. Theme vowels define conjugation classes which are just differentiated by the inflectional form of the paradigm, without any impact on the semantics or syntax of the form. The assignment of a root projected as a verb to a conjugation class seems equally arbitrary, without clear semantic, syntactic or phonological predictors. Oltra-Massuet’s (1999) groundbreaking analysis of theme vowels in Romance manages to partially syntacticise these objects by proposing that they mark the presence of a verbal functional head, but they are still morphemes that do not project in the syntax. Kayne (2016) notwithstanding, it seems that at this

point Neo-Constructionist theories still have to admit that there is something ‘morphological’ about theme vowels, at least if they have the properties displayed in Romance languages. Time – and further research – will tell if a purely syntactic account of these objects is workable, or if their existence should lead us to a weakening of the main conclusions of the Neo-Constructionist enterprise. These two questions that are crucial for the internal structure of verbs will be the topic of a future monograph.

Finally, the third unresolved issue has to do with the well-attested empirical generalisation that the functional material is reduced in the base of a word, whatever that term refers to. This has been quite prominent in the case of the comparison between (15a) and (15b).

- (15) a. de metal  
of metal  
b. metál-ico  
metal-ICO  
‘metallic’

Empirically, the bare noun inside the prepositional structure can inflect for number and displays overt gender marking (*con pec-a-s* ‘with freckle-NM-pl, with freckles’ vs. *pec-oso* ‘freckle-OSO’). The general view has been that the presence of intermediate structure between the noun and the preposition blocks head-to-head movement, and head-to-head movement is required to build a word. Specifically, Baker (1988) famously argued that intermediate functional heads block incorporation of one lexical item to another lexical item in order to form a word. The problem is, in the current theoretical universe, that it is unclear what counts as a functional and what counts as a lexical head (remember, for instance, that Distributed Morphology treats the traditional lexical categories as produced by functional heads such as *a*, *n* and *v*).

Moreover, different studies have suggested that incorporation is not necessarily blocked by functional heads. Alexiadou (2001) shows evidence that nominalisations might be built from verbal bases that include aspect and voice. Borer (2013) argues that complex event nominalisations contain a functional head that introduces internal arguments. Marantz (2000) and Arad (2005) argue that verbs can be derived from nominal bases that already contain NP-related functional structure. Alexiadou et al. (2015) argue that some participles contain voice and aspect. Either we redefine the grammatical properties of aspect, voice or gender as lexical heads, or the simple approach would not work.

We are currently left with a generalisation – namely, that the base is functionally impoverished inside a complex word, but it is still unclear which specific restrictions this generalisation reflects – that is, how much structure must be

impoverished – and what the ultimate explanation for this fact is – that is, why bases would have to become functionally impoverished, or why functional heads would interfere with word-formation processes. This is also a potential place where the Neo-Constructionist enterprise might eventually be weakened, again pending further research.

It is generally said that research is interesting more for the questions that it reveals than for the answer that it provides to those questions. While we have not found a solution for any of these three questions, we hope to have at least contributed to defining the questions themselves in a precise way through the study of Spanish derived adjectives. More generally, we also hope to have encouraged others to explore derived adjectives in other morphological systems, or related objects in Spanish, in order to refute or confirm our hypothesis that adjectives are built with heads belonging to other domains.



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This is the first book that presents a complete empirical description and theoretical analysis of all major classes of derived adjectives in Spanish, both deverbal and denominal. The reader will find here both a detailed empirical description of the syntactic, morphological and semantic properties of derived adjectives in contemporary Spanish and a cohesive Neo-Constructionist analysis of the syntactic and semantic tools that contemporary Spanish has available to build adjectives from other grammatical categories within a Nanosyntactic-oriented framework. In doing so, this book throws light on the nature of adjectives as a grammatical category and argues that adjectives are syntactically built by recycling functional heads belonging to other categories. The book will be useful both to researchers in Spanish linguistics or theoretical morphology and to advanced students of Spanish interested in the main ways of building new adjectives through suffixation in this language.

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