

A DISCOURSE REFERENT-RELATED RESTRICTION ON PRENOMINAL ADJECTIVES IN SPANISH?

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Resumen: La inaceptabilidad de los adjetivos relacionales en posición prenominal (*??un lingüístico problema vs. un problema lingüístico*) sigue sin una explicación convincente. En esta contribución propongo que se puede explicar esta incompatibilidad en un marco teórico que asigne un rol explícito a los referentes del discurso, como la Teoría de la Representación del Discurso (Kamp, 1981). La semántica de la modificación por parte de los adjetivos relacionales propuesta en McNally y Boleda (2004) puede reformularse como modificación sin la intervención de ningún referente discursivo, mientras el análisis de todos los casos de modificación prenominal parece exigir el recurso a un referente discursivo. De ahí se puede explicar la incompatibilidad de los adjetivos relacionales en posición prenominal.

Abstract: The unacceptability of relational adjectives in prenominal position in Spanish (*??un lingüístico problema vs. un problema lingüístico*) lacks a convincing explanation. In this contribution I suggest that we can explain this incompatibility if we adopt an approach that assigns a formal status to discourse referents, such as Discourse Representation Theory (Kamp, 1981). The semantics of relational adjective modification in McNally and Boleda (2004) can then be recast as crucially unmediated by any discourse referent, while all cases of prenominal modification are arguably necessarily mediated by a discourse referent, thus explaining the incompatibility.

Palabras clave: Orden de adjetivos, modificación, referencia, adjetivos relacionales, lengua española.

Keywords: Adjective order, modification, discourse reference, relational adjectives, Spanish.

1. INTRODUCTION¹

Manuel Leonetti and I shared an interest in nominal reference and adjective semantics. This short piece brings these interests together. I sorely wish it could have had the direct benefit of his insights, but certainly it will have benefitted indirectly from the many things I learned from reading his work, listening to his presentations, getting his feedback on my own research, and exchanging ideas and observations with him at countless workshops, conferences, network meetings, and doctoral thesis defenses over nearly 25 years.

As a non-native speaker of Spanish (or any other Romance language), I continue to find it a challenge to know when certain adjectives should go pre- or postnominally. In a given context, should I write, for example, *el siguiente comentario* ‘the following comment’, or *el comentario siguiente*? However, I have never had trouble with so-called relational adjectives such as *lingüístico* ‘linguistic’, *oriental* ‘oriental’, or *molecular* ‘molecular’: These invariably appear postnominally, as seen in (1)²:

- (1) a. un problema lingüístico
 a problem linguistic
 ‘a linguistic problem’
 b. ??un lingüístico problema

Despite the simplicity and clarity of this contrast, I have never seen a convincing explanation for the restriction on relational adjectives in prenominal position. In this short piece, I propose that the restriction is the result of two, incompatible requirements: On the one hand, that prenominal modification must be mediated in one way or another by a

¹ I am grateful to the editors of this volume for giving me the opportunity to honor the memory of Manuel Leonetti through this contribution. I am also grateful to Carla Umbach and Cécile Meier for inviting me to participate in the Semantics Colloquium at University of Frankfurt in November 2022, where I first developed the idea for this work.

² Two initial comments must be made. First, despite the general formulation I will use in the text, I will be exclusively concerned with two particular *uses* of relational adjectives, specifically their (typically non-gradable) thematic and classificatory uses (see Bosque and Picallo, 1990, on these terms; see Arsenijević, et al., 2014, for arguments that these uses are not, in fact, syntactically or semantically distinct). Uses of these adjectives to describe potentially gradable properties of token individuals are not necessarily blocked from prenominal position (e.g., *una muy económica solución* ‘a very economical solution’, NGLE, 2009: §13.13n.). Second, while the term “relational adjective” is typically used to refer to a subclass of adjectives that are morphologically related to nouns (e.g., *lingüista* ~ *lingüístico*) and I will limit my claims to such adjectives here, certain uses of other sorts of adjectives can manifest similar behavior (see, e.g., McNally and Boleda, 2004, Rainer, 2013, for additional discussion); in principle the proposal presented here should apply to them as well.

discourse referent (the latter, as understood in Discourse Representation Theory (DRT); Kamp, 1981); and on the other, that relational adjectives must effect their modification without the mediation of any discourse referent – for example, in a DRT analysis, via the use of thematic variables (Koenig and Mauner, 1999; Farkas and de Swart, 2003).

In section 2, I very briefly summarize the relevant distributional facts about adjective-noun ordering in Spanish, focusing on what has been claimed about relational adjectives specifically; I then lay out the limitations of previous accounts. In section 3, I explain the key components of the proposal and sketch the alternative explanation.

2. THE RECALCITRANT DISTRIBUTION OF RELATIONAL ADJECTIVES

2.1. Generalizations concerning prenominal adjectives in Spanish

Adjectival modifiers of nouns in Spanish famously fall into three categories. First, there are those that are attested only *after* a noun, such as *molecular* (2); a search of the 2-billion-word Web/Dialects portion of the Corpus del Español (Davies, 2016) for the lemma MOLECULAR followed by any noun (N*) yielded no valid hits.

- (2) peso molecular
weight molecular
'molecular weight'

Second, a few adjectives are attested exclusively *before* a noun (3), such as *mero* 'mere', which is does not appear as a postmodifier a noun in the "España" portion of the Corpus del Español Web/Dialects corpus³.

- (3) Lo que le molesta es la mera posibilidad de ser objeto de crítica.
it that 3SG.DAT bothers is the mere possibility of be-INF object of criticism
'What bothers him/her is the mere possibility of being the object of criticism.'

³ A search for N* followed by the lemma MERO yielded no valid hits. In other parts of the corpus one finds a few examples of *mero* as a postmodifier, such as (i), from "Puerto Rico" portion, but it is very difficult to evaluate how representative they are of the use of the word.

- (i) El hecho mero de estar presente...
the fact mere of be-INF present
'The mere fact of being present...'

Finally, the vast majority of adjectives can appear on either side of the noun, typically with some sort of difference in interpretation (4).

- (4) a. A menos que consideremos (que también me parece una opción interesante)
 unless consider-1PL that also 1SG.DAT seems an option interesting
 a Iniesta como relevo natural de Xavi....
 DOM Iniesta as replacement natural of Xavi
 ‘Unless we consider (which also seems like an interesting option to me) Iniesta as the natural replacement for Xavi....’
- b. La psicología de la personalidad debe contemplar un amplio rango de
 the psychology of the personality should contemplate a. wide range of
 unidades..., y para ello los modelos multinivel suponen una interesante opción.
 units and for that the models multilevel suppose an interesting option
 ‘Personality psychology should contemplate a wide range of units..., and for that multilevel models are an interesting option.’

These differences in interpretation have been the subject of a vast literature that I cannot review here (see e.g., Demonte, 1999, 2008; NGLE, 2009; Fábregas, 2017; and references cited therein; as well as, e.g., Cinque, 2010, 2014 on related Italian data). Rather, I will focus specifically on accounts of modification by prenominal adjectives, and how well these accounts explain the restriction on relational adjectives in prenominal position.

Demonte (2008: 75ff.) draws four semantic/functional generalizations about adjectives in prenominal position⁴. First, prenominal adjectives can modify “the denotation assignment function” of the modified noun – in other words, it can signal that the noun description holds of the noun phrase referent in some specific set of possible (but not necessarily actual) worlds, as is the case with *presunta estafa* ‘alleged swindle’. Second, they can modify the time at which the nominal description holds, as in *futura presidencia* ‘future presidency’. Third, she observes that prenominal adjectives can function as non-restrictive modifiers, focusing on examples such as *un/el horrible concierto* ‘a/the horrible concert’. On this use, the adjective serves not to restrict the set of entities the noun describes in the context but rather to add complementary descriptive content; in other words, if I say *Asistí a un horrible concierto* ‘I attended a horrible concert’, I am not

⁴ For expository purposes, I modify the order in which Demonte presents these generalizations in her article.

implying that there was any other concert that I attended – rather, the sentence is equivalent to *Asistí a un concierto, y fue horrible* ‘I attended a concert, and it was horrible’.

Finally, Demonte identifies a use on which the adjective modifies “one or more central properties of N, asserting either that they are completely or exclusively satisfied by N, or that the noun – which must have a perfectly identified referent – can efficiently fulfill such properties” (2008: 76). She notes (fn. 4) that this kind of modification is sometimes called “reference modification” (a term from Bolinger, 1967). Examples she gives include *perfecto fracaso* ‘perfect failure’, *un buen abogado* ‘a good lawyer’, *el despiadado crítico* ‘the merciless critic’, or *la olorosa rosa* ‘the fragrant rose’⁵.

What, if anything, do these four types of modification have in common? Bolinger (1967: 1), in a discussion of English data, describes reference modification as “allowing for a ‘kind of’ slot among the determiners [of reference, LMcN.]”, contrasting it with “referent-modification, being by way of a predication which is joined by conjunction rather than by subordination”. Bolinger does not provide a semantics for these kinds of modification; however, it is clear from his discussion in the paper that he would place relational adjectives (as in e.g. *medical student*) in the category of reference modifiers sooner than in the category of referent modifiers⁶.

Cinque (2014), for Italian, relatedly argues that prenominal position is reserved for what he terms “direct modification”, which he equates with Montagovian CN/CN modification, that is, a function from common noun (CN) denotations to common noun denotations (Montague, 1970; Siegel, 1976). He contrasts this kind of modification with modification achieved through derivation from a reduced relative clause structure, where the adjective functions effectively as a predicate of individuals⁷.

⁵ Except for the non-restrictive modifiers, Demonte’s classification is similar to that in Bouchard (2002), reported in Fábregas (2017: 73-4), on which prenominal modifiers contribute one of the following: a) a characteristic function f which provides the property that interprets the N[oun, LMcN.]; b) a specification for a time interval t ; c) an indication of the possible world w which allows us to know whether f holds in the actual world or not; or d) a variable assignment function g that associates each variable with a particular entity.

⁶ In fact, Bolinger (1967: 31ff.) raises – and leaves open – the question of whether it is possible to differentiate reference modification from compounding in at least some cases involving relational adjectives.

⁷ The syntactic mechanisms proposed to achieve surface noun-adjective order in the Romance languages are varied and complex (see, e.g., Bortolotto, 2016; Fábregas, 2017 for recent discussion). However, as these mechanisms do not explain the restriction on surface prenominal relational adjectives, but rather at most only stipulate it, I will not discuss their details here.

Neither Bolinger’s nor Cinque’s discussions account for non-restrictive uses of prenominal adjectives. In contrast, Demonte argues that the prenominal position is associated with two types of syntactic operations: Pair-Merge, on the one hand, and internal Merge, on the other (operations drawn from Chomsky, 2001). Though she does not associate these two operations explicitly with semantic operations, she proposes (2008: 99) that “non-predicative adjectives...Pair-Merge, or adjoin, to the maximal projection of N”, while “[a]djectives which ‘preserve’ their predicative interpretation in prenominal position...have been displaced to a Focus position above NP, which constitutes a case of internal Merge”. Demonte’s discussion makes it clear that she considers the Pair-Merge cases to correspond to attributive modification, or direct modification in Cinque’s sense, while internal Merge is presumably associated with a semantics compatible with non-restrictive modification.

2.2. The puzzling restriction on prenominal relational adjectives

The observations concerning prenominal adjectives in Spanish, however accurate they are otherwise, fail to explain the distribution of relational adjectives. To see this, consider the two main semantic analyses of relational adjectives. On the one hand, Fradin and Kerleroux (2003) analyzed relational adjectives as predicate modifiers, as in (5a) for *cerebral* ‘cerebral’ (non-essential details are modified for expository purposes). The adjective takes a predicate (which presumably could also be one-place) and returns a predicate of the same type, adding the condition that one of the arguments of the noun satisfies the description contributed by the nominal core of the relational adjective. Thus, the result of modifying a relational noun like *lóbulo* ‘lobe’ appears in (5b).

- (5) a. *cerebral*: $\lambda P\lambda y\lambda x[P(x, y) \wedge \mathbf{cerebro}(y)]$
 b. *lóbulo cerebral*: $\lambda y\lambda x[\mathbf{lobulo}(x, y) \wedge \mathbf{cerebro}(y)]$

This analysis clearly falls into Cinque’s direct modification category; insofar as the adjective is treated as modifying a part of the noun’s denotation without predicating anything of the noun referent itself (i.e., the lobe is not “cerebral”), this account treats relational adjectives as the prototype of the sort of modifier that should go in prenominal position in Romance. Why they are excluded from that position remains a mystery.

On the other hand, McNally and Boleda (2004), noting that relational adjectives contrast with prototypical non-intersective adjectives such as *mero* in appearing only in postnominal position, opt to treat them as a special sort of intersective predicate, namely a predicate of kinds, where a kind is a distinct sort of entity (see (6a)). This proposal carries with it two additional assumptions. First, nouns are generally assumed to denote relations between kinds and the token entities that realize those kinds, as in (6b). Second, an intersective modification rule allows the predicate associated with the relational adjective to apply just to the kind argument, adapting a proposal in Larson (1998) for other sorts of adjectives. The result of modification, once the kind argument has been given a value indexically, appears in (6c), where **R** is Carlson’s (1977) realization between token entities and kinds.

- (6) a. $\lambda x_k[\mathbf{cerebral}(x_k)]$
 b. $\lambda x_k \lambda y_o[\mathbf{R}(y_o, x_k) \wedge \mathbf{cerebral}(x_k)]$
 c. $\lambda y_o[\mathbf{R}(y_o, k_j) \wedge \mathbf{lobulo}(k_j) \wedge \mathbf{cerebral}(k_j)]$

This latter analysis may seem initially better suited to accounting for the failure of relational adjectives to appear in prenominal position, but in fact, it does no more than make sense of why the adjectives *could* appear in *postnominal* position. That is, McNally and Boleda were more concerned about differentiating relational adjectives from obligatorily prenominal adjectives like *mero* than they were about accounting for the failure of relational adjectives to appear in prenominal position. Since Demonte offers examples of other classes of adjectives that appear prenominally despite arguably exemplifying Bolinger’s reference modification – which included, on his view, modification by relational adjectives – McNally and Boleda’s analysis, like Fradin and Kerleroux’s, also fails to offer any insight into the prohibition on relational adjectives from prenominal position.

3. A ROLE FOR DISCOURSE REFERENCE

The discussion in the previous section ultimately reveals that semantic notions like predicate modifier vs. intersective modifier, or direct vs. indirect modification, are not helpful in explaining the distribution of relational adjectives in Spanish. Fortunately, a second look at Demonte’s descriptive generalizations suggests a way forward.

The first two categories, exemplified by *presunta estafa* and *futura presidencia*, share the property that the modifier introduces an additional parameter – temporal or modal – which influences the denotation of the nominal. The third category, non-restrictive modification, involves cases where the noun referent is identified independently of the modifier. This leaves the last category, exemplified by *perfecto fracaso*, *un buen abogado*, *el despiadado crítico*, or *la olorosa rosa*. Although this category may appear somewhat heterogeneous, and although Demonte suggested that they correspond to cases of “reference modification” (as opposed to referent modification), in fact her description of the category (repeated from above) suggests a very different intuition: “they are completely or exclusively satisfied by N, or...the noun – *which must have a perfectly identified referent* [italics added, LMcN.] – can efficiently fulfill such properties”. In other words, according to Demonte’s intuition, this last category shares with non-restrictive modification that a discourse referent is established for the nominal independently of the modifier. With the help of a framework like DRT, we can bring these generalizations together and establish a contrast with modification involving relational adjectives.

In DRT, meaning representations include two distinct components: A set of discourse referents, and a set of possibly complex conditions on those referents, as shown in (8) below. In a version of DRT developed for the analysis of semantic pseudo-incorporation in Hungarian (exemplified in (7b) below), Farkas and de Swart (2003) propose that conditions on referents can be constructed in two ways: Either by applying a predicate directly to a discourse referent, or by combining two predicates using what they refer to as “thematic arguments” – variables that serve exclusively to connect conditions on a specific argument of some predicate, without a corresponding discourse referent (an idea drawn from Koenig and Mauner, 1999). The contrast between the two sorts of representations can be illustrated using the Hungarian data in (7) (Farkas and de Swart, 2003: 135, examples slightly adapted). The key observation is that while a typical, article-bearing indefinite, like *egy betegeti* ‘a patient’ in (7a), readily licenses discourse anaphora, the semantically incorporated bare nominal *betegeti* ‘patient’ in (7b) does not.

- (7) a. János egy betegeti vizsgált ... őti ... [Hungarian]
 János a patient-ACC examine-PST him
 ‘Janos examined a patient_i ... him_i ...’
 b. János betegeti vizsgált ... ??őti ...

Janos patient ACC examine-PST him
 ‘Janos patient_i-examined ... ??him_i ...’

Farkas and de Swart argue that the difference between the non-incorporated indefinite in (7a) and the pseudo-incorporated bare noun in (7b) is that only the former introduces a discourse referent that can support discourse anaphora. In contrast, in (7b) the bare noun *betegeti* ‘patient’ is claimed to contribute only a thematic argument. The two sorts of nominals combine with the verb through distinct compositional mechanisms: “Argument Instantiation”, essentially a kind of saturation of a predicate by an argument, occurs when a discourse referent is involved; whereas “Unification of thematic arguments”, essentially a kind of predicate conjunction, occurs when only thematic arguments are involved. The final representations (known as Discourse Representation Structures, DRSs) of the sentences in (7a) and (7b) appear in (8a) and (8b), respectively, where the first set in the ordered pair corresponds to the discourse referents, and the second set, to the conditions; u and v are variables over discourse referents; and x is a variable over thematic arguments (other details simplified).

- (8) a. $\langle \{u, v\}, \{v = \mathbf{Janos, patient}(u), \mathbf{examine}(v, u)\} \rangle$
 a. $\langle \{v\}, \{v = \mathbf{Janos, patient}(x), \mathbf{examine}(v, x)\} \rangle$

Although Farkas and de Swart developed their analysis for pseudo-incorporation in verb phrases, their proposal can be extended with minor changes to nominal modification.

On McNally and Boleda’s (2004) analysis of relational adjectives, the adjective does not apply to the referent of the nominal that it modifies, but rather it acts on the semantics of the noun, understood as a kind description, to form a new subkind description. In subsequent work (McNally and Boleda, 2017), they suggest that relational adjectives compose with the nouns they modify without the intervention of a discourse referent⁸. There are different ways to implement this sort of modification. McNally and Boleda appeal to a distinct, distributional vector-based semantics for content words that allows for composition without the intervention of any sort of variables at all (e.g. through vector

⁸ See also Gehrke and McNally (2019) for a related analysis of adjectival modification of nouns within verb phrase idioms.

addition or multiplication, or more novel techniques; see Lenci, 2018 for an overview). This is sketched in (9), where **comp** stands for the relevant composition operation on the vector representations for *lóbulo* and *cerebral*; **R** is the counterpart of the realization relation in (6c), now understood to hold between a token-level thematic argument x and the complex description (formally distinct from, but conceptually analogous to, a Carlsonian kind) that results from vector composition. Note that at this stage, prior to the addition of any other modifier or determiner, no discourse referent is introduced.

$$(9) \quad \langle \{\}, \{\mathbf{R}(x, \text{comp}(\text{lobulo}, \text{cerebral}))\} \rangle$$

We can hypothesize that this sort of composition is limited to specific syntactic positions – for example, to a postnominal position suitably “low” or close to the noun in Spanish (in the syntactic framework of one’s choice) in comparison to other modifiers, just as pseudo-incorporation is limited to preverbal position in Hungarian.

Let us now turn to prenominal position. An obvious way to account for the exclusion of relational adjectives prenominally would be to associate all prenominal modification with composition that necessarily involves the intervention of a discourse referent in one way or another⁹. Doing this requires conceiving of the different sorts of prenominal modification ways that are in some cases conceptually distinct from familiar analyses.

The simplest case is nonrestrictive modification. If we follow Morzycki (2008: 114ff.), nonparenthetical nonrestrictive modifiers are ascribed to an effectively speaker-presupposed discourse referent associated with the full noun phrase containing the modifier, in a proposition parallel to the one containing the full noun phrase, in the spirit of Potts’s (2003) treatment of appositives. Morzycki discusses cases where, without an independently posited discourse referent associated with the full nominal, it is difficult to see how such modification would work.

Now consider adjectives such as *presunto* or *futuro*, which crucially fail to entail that the property described by the noun holds of the noun phrase referent in the actual world or time. The obvious way to represent the semantics of these in DRT is to introduce

⁹ This generalization would not necessarily require there to be a single syntactic position, composition mechanism or discourse function associated with prenominal modification – in this respect, it would not be incompatible with Demonte’s (2008) syntactic proposal. The claim would simply be that all sorts of prenominal modification share the feature of involving a discourse referent corresponding to the noun phrase referent.

subordinate DRSs within the main DRS, indexed to alternative worlds or times, in which the condition contributed by the noun can apply to the referent of the noun phrase as a whole¹⁰. This referent may, but need not, be present in the main DRS – *presunta estafa* may be used to describe a real event that was not, in fact, a swindle, but it might equally well be used to describe a pure figment of someone’s paranoid imagination. Without such discourse referents – be they subordinated or not –, it is difficult to see how the semantics for such adjectives could be captured in DRT.

Finally, consider cases such as *el despiadado crítico*, or *el buen abogado*¹¹. Given the history of considering the adjectives in these cases as direct (CN/CN) modifiers rather than as properties of the noun phrase referent, it might seem surprising to claim that they are ascribed to a discourse referent rather than composed with the noun semantics as was proposed for relational adjectives in (9). However, Demonte’s intuition that the noun must have a perfectly identified referent is the key to solving this puzzle.

Adjectives are notoriously polysemous. What it means for something to be red, for example, depends on whether that thing is a piece of clothing, hair, wine, skin, eyes, a pen, or a traffic light. Similar comments apply to adjectives such as *merciless* or *good*. It has arguably been a conceptual error to assume that simply because we take into consideration under what description, or in what guise, we conceive of an entity on a given occasion (for example, as a person, a critic, or a lawyer) that we are not ascribing a property to that entity, and indeed, these adjectives function well as predicates with the relevant interpretation (e.g., good as a lawyer, merciless as a critic), as (10) shows.

- (10) a. El abogado es bueno.
b. El crítico es despiadado.

There is thus no reason to think that the representation of the conditions imposed by these adjectives could *not* involve ascription to a discourse referent. This claim by itself does not fully explain the well-known differences between pre- and postnominal

¹⁰ See e.g. Roberts (1987) for extensive discussion of subordinate Discourse Representation Structures and their implications for discourse reference.

¹¹ The case of *perfecto* is more complex, as in this use it appears to be what Sánchez Masià (2017) calls an adjective of completeness, and thus space limitations prevent me from being able to discuss it in the necessary detail here. However, it is worth noting that Masià takes adjectives of completeness to function as “maximizers”, with an effect similar to universal quantification. This is consistent with their semantics crucially accessing a discourse referent corresponding to the modified noun – otherwise, it is difficult to see how maximization could be guaranteed.

uses of adjectives such as *bueno* or *viejo* ‘old’, but it does signal a way in which these adjectives differ from relational adjectives, and a clear starting point for future research should be to consider the role that the prior identification of the referent (versus ascription of the adjective’s semantics to a perhaps unidentified token referent) might play in facilitating one sort of interpretation over another.

4. CONCLUSION

Relational adjectives have a distinctive distribution in Spanish which has resisted any semantically-grounded explanation. Here I have suggested that what makes relational adjectives distinctive semantically is their composition with the noun they modify in the absence of any discourse referent, and that what makes prenominal modification distinctive in Spanish is that, in one way or another, it is always mediated by a discourse referent. Although I have been able to provide only the barest sketch of an account, I hope this work can inspire further interest in the distinctive analytical tools and representations that I have appealed to here.

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