Short Visit Grant ☒ or Exchange Visit Grant ☐

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Scientific Report

The scientific report (WORD or PDF file – maximum of eight A4 pages) should be submitted online <u>within one month of the event</u>. It will be published on the ESF website.

<u>*Proposal Title*</u>: Constraints on Adverb Formation: Morphology Meets Semantics

<u>*Application Reference N°:*</u> 7058

1)   Purpose of the visit

The aim of my research stay at the University of Tromsø has been joint work with Antonio Fábregas on the syntax and semantics of deadjectival items in Spanish such as 'hondo' and 'fino', illustrated in (1) and (2), which are often in free alternation with manner adverbs formed with -mente (cf. (1)), but whose meaning is closer to that of secondary predicates than of manner modifiers (cf. (2)).

(1) Juan respira {hondo/hondamente}.
    Juan breathes {deep/deeply}.
(2) Juan cortó {fin-o/fin-a} la cebolla-a.
    Juan cut {thin-MASC/thin-FEM} the onion-FEM.

There are two logical possibilities for an analysis of forms like 'hondo' and 'fino' in (1)-(2) (hereafter called Short Invariable Forms, SIFs). On the one hand, they may be argued to be adverbs formed by means of null -mente, differing in this respect from adverbs with overt -mente (Long Invariable Forms, LIFs). In this case, it must be explained which constraint is behind the fact that SIFs are formed without -mente and why they are interpreted on a par with secondary

predicates. On the other hand, SIFs may be argued to be a kind of secondary predicates; in this case, it needs to be explained which (implicit) argument of the verb they are predicated of, since it cannot be the subject or object, as in the case of canonical secondary predicates (Agreeing Forms, AFs).

Thus, more generally, the aim of this project is an analysis of the constraints on adverb formation and secondary predication from both morphosyntactic and semantic points of view, in the light of a recent reconception of adverbs as PP compounds (cf. Zagona 1990, Déchaine and Tremblay 1996, Baker 2003, Fábregas 2007, Alexeyenko 2015).

2)   Description of the work carried out during the visit

An important part of the work carried out during my stay at the University of Tromsø has been to gather and systematize properties of SIFs. These are briefly summarized below.

1. Semantic behavior
1.1. Physical properties
SIFs tend to denote different properties of the verb than LIFs. Thus, consider 'alto' (high) vs. 'altamente' (highly) in (3) and (4):

(3) hablar alto de alguien
    talk loud about someone
(4) hablar altamente de alguien
    talk praisingly about someone

In general, SIFs tend to denote physical properties associated with the verb's semantics, whereas LIFs often do not allow physical property interpretations and require metaphorical extensions. This also explains other contrasts, such as the one in (5)-(6).

(5) cavar {hondo/*hondamente}
    dig deeply
(6) lamentar {*hondo/hondamente}
    regret deeply

1.2. Lexical restrictions
SIFs are typically more restricted in their combination with verbs than LIFs, often forming with them tight collocation-like relations. This is suggested by the fact that the verb selects one of the meanings that a SIF can have. Consider, e.g., the following contrast with 'alto' (high):

(7) lanzar alto
    throw something high (spatial meaning)
(8) hablar alto

talk loudly (volume meaning)

Furthermore, this is also suggested by the fact that SIFs do not allow substitution for synonyms. For instance, on the volume interpretation, 'fuerte' is synonymous with 'alto', but (9) is nevertheless not possible.

(9) #hablar fuerte
intended: talk loudly

1.3. Secondary predication

In their interpretation, SIFs are closer to secondary predicates than to manner adverbs formed with -mente. Note that in many cases it is actually possible to paraphrase the semantic contribution of a SIF as that of an adjective that modifies a result object:

(10) respirar hondo 'breathe deep': take a deep breath
(11) cavar hondo 'dig deep': dig a deep hole
(12) hablar claro 'speak clear': produce a clear speach
(13) escribir fino 'write thin': produce thin lines of writing
(14) cortar grueso 'cut thick': make thick slices

2. Syntactic behavior
2.1. Unavailability of the preverbal position

Both LIFs and SIFs are admissible in the position (immediately) following the verb, cf. (15a). The preverbal position is, by contrast, only available to LIFs, but not to SIFs, as (15b) demonstrates. In this respect, SIFs pattern with depictives and resultatives, which cannot occur preverbally either. (However, there are a number of facts that speak against an analysis of SIFs as secondary predicates of implicit arguments, which will be presented in the following sections.)

(15) a. fue cortado {finamente/fino}
b. fue {finamente/*fino} cortado
was thinly cut

2.2. Lack of agreement with the object/subject

Differently from true secondary predicates, SIFs do not agree in gender and number with the direct object when it is overtly present or with the subject, as (16b) shows. Note that already the fact that both agreeing and non-agreeing forms are possible in examples such as the one below indicates that SIFs are different from secondary predicates.

(16) a. cortar fin-a la cebol-a
b. cortar fin-o la cebol-a
cut thin-FEM/thin-MASC the onion-FEM

2.3. Independence of the object/subject

The occurrence of SIFs is not restricted to the presence of the direct object or the subject, as is the case with depictives, which characterize the subject, or with resultatives, which require the object (or the "fake object") to be present. This is shown by the following two facts. First, unlike true secondary predicates, SIFs can occur with intransitive verbs without being interpreted as affecting the subject:

(17) María respira {hond-o/*hond-a}.
     María breathes deeply.

Second, SIFs can also have the interpretation of secondary predicates with respect to prepositional objects; this possibility is not available to true depictives/resultatives though:

(18) Juan pensó {clar-o/*clar-a} en la respuest-a.
     Juan was thinking with clarity about the answer.

2.4. Strict adjacency to the verb

SIFs also differ from true secondary predicates insofar as they have to be strictly adjacent to the verb. Thus, unlike the resultative 'fina', the SIF 'fino' does not allow the direct object to intervene between it and the verb, cf. (19b).

(19) a. Juan cortó {fin-o/fin-a} la ceboll-a.
     b. Juan cortó la ceboll-a {*fin-o/fin-a}.

3) Description of the main results obtained

Based on the properties of SIFs described above, we propose the following analysis of their syntax and semantics.

Thus, we have seen that semantically SIFs are like secondary predicates rather than manner modifiers, and, at the same time, that they may not be predicates to (explicit or implicit) direct objects. Yet standard vP+VP syntax of the lower verbal domain does not imply the presence of any further arguments of the verb other than the canonical direct object. For this reason, we adopt the architecture of the lower verbal domain proposed in Ramchand (2008), according to which vP/VP is decomposed into the following functional layers that introduce the following event participants in their specifier positions:

(20) [initP initiator [procP undergoer [resP resultee ground]]]
[John]initiator broke [the stick]undergoer+resultee [in pieces]ground.
(21) [initP initiator [procP undergoer path]]
[Mary]initiator+undergoer ate [the mango]path.

Given this architecture, we argue on the basis of the following facts that SIFs occupy the complement position of (one of the first-phase projections of) the verb, in other words, that they are rhemes. First, in cases of do so anaphora, SIFs must be part of the constituent that is the antecedent of 'do so', which suggests that they are complements rather than adjuncts, like LIFs.

(22)a. *Juan cortó fino la cebolla, pero María lo hizo grueso.
        Juan cut the onion thin, but María did so thick.
    b. J cortó la cebolla finamente, pero M lo hizo gruesamente.
        Juan cut the onion thinly, but María did so thickly.
(23)a. Juan piensa mucho, pero no lo hace {claramente/*claro}.
        Juan thinks a lot, but he does not do it in a clear manner.
    b. Juan habló de María, pero no lo hizo {altamente/*alto}.
        Juan spoke of María, but didn't do it praisingly/loudly.

Second, SIFs must undergo pied-piping in, e.g., (inverted) pseudo-clefts, as in the example below. Again, the fact that they cannot be stranded follows if they are complements and not adjuncts of verbs.

(24)a. Respirar {hondo/hondamente} es lo que hacía Juan.
        Breathe deeply is what Juan was doing.
    b. Respirar es lo que hacía Juan {*hondo/hondamente}.
        Breathe is what Juan was doing deeply.

Third, the fact that there is a tight semantic relation between the verb and the SIF, which has been discussed earlier, is easier to explain if SIFs are arguments rather than adjuncts of verbs.

More specifically, we argue that SIFs occupy the complement position of proc, and that for the following reasons. First, SIFs are out when [Comp,procP] is already occupied by a path, e.g., by an incremental theme in creation verbs, such as 'la respuesta' in 'pensar la respuesta', cf. (25b). In this case, the SIF and the incremental theme cannot occur together because they compete for the same position, namely, complement of proc. Note also the contrast between (25b) and (25c): differently from 'la respuesta', 'en la respuesta' is an undergoer, and hence it is compatible with the SIF 'claro'.

(25) a. pensar [la respuesta]path
        think the answer
     b. *pensar claro [la respuesta]path
        intended: think the answer clearly
     c. pensar claro [en la respuesta]undergoer
        think about the answer clearly (with clarity)

Second, VPs that contain SIFs do not have a resP, which is witnessed by the fact that a ground of result, such as e.g. 'en rodajas' (in slices), is not possible in this case:

(26) a. cortar fino la cebolla
        cut the onion thin
     b. cortar la cebolla en rodajas
        cut the onion in slices
     c. *cortar fino la cebolla en rodajas
        cut the onion thin in slices

Having established that SIFs are complements of proc syntactically, in other words, a variety of paths semantically, the question is what their syntactic category is. Available possibilities are in this case that they are (a) APs, (b) PredPs, (c) PPs, or (d) DPs, as these are the types of rhemes that are allowed in Ramchand's (2008) system.

(a) SIFs cannot be AP-complements of proc, i.e., AP-rhemes that specify a property of the undergoer, since it would be unclear in this case why they do not agree with the undergoer DP which is located in the [Spec,procP] position.

(b) SIFs also cannot be PredPs (or APs mediated by a special predicative res head ⌀п, cf. Ramchand (2008)), since the presence of PredP between AP and proc would make it difficult to account for selectional restrictions discussed earlier.

(c) Another possibility is that SIFs are (null-headed) PPs that contain an empty noun modified attributively by the SIF-adjective. However, in this case, the empty noun would be unlicensed: it could not be licensed by the verb because of the presence of an intervening P head (unless this P head is assumed to be part of the extended projection of the noun).

(d) Rather, we suggest that SIFs are DPs containing an empty noun that is licensed by the verb and whose interpretation is determined by the semantics of the verb and further restricted by the semantics of the SIF-adjective, which modifies it attributively, as shown in (27) below.

(27) [initP Juan [init' cortar [procP la cebolla [proc' <cortar> [DP D [NP PIECE fino]]]]]]

Note that this analysis does not imply additional stipulations compared to Ramchand (2008), as the empty noun that it assumes to be present in the structure of the DP in the complement position of proc must be assumed by Ramchand (2008) anyhow for reasons of semantic composition. Furthermore, this analysis also allows a straightforward compositional semantics with the proc head that has

been defined by Ramchand (2008) for cases when resP is absent, as shown below.

$[[NP]] = \lambda x.[thin(x) \wedge piece(x)]$

$[[DP]] = \lambda P.\lambda y.\lambda e.\exists x[thin(x) \wedge piece(x) \wedge P(x)(y)(e)]$

$[[proc]] = \lambda x.\lambda y.\lambda e.[path(x)(e) \wedge cut(e) \wedge process(e) \wedge subject(y)(e)]$

$[[proc']] = \lambda y.\lambda e.\exists x[thin(x) \wedge piece(x) \wedge path(x)(e) \wedge cut(e) \wedge process(e) \wedge subject(y)(e)]$

$[[procP]] = \lambda e.\exists x[thin(x) \wedge piece(x) \wedge path(x)(e) \wedge cut(e) \wedge process(e) \wedge subject(\imath z.onion(z))(e)]$

$[[init]] = \lambda P.\lambda y.\lambda e.\exists e1\exists e2[P(e2) \wedge cut(e1) \wedge state(e1) \wedge e = e1 \rightarrow e2 \wedge subject(y)(e1)]$

$[[init']] = \lambda y.\lambda e.\exists e1\exists e2\exists x[thin(x) \wedge piece(x) \wedge path(x)(e2) \wedge cut(e2) \wedge process(e2) \wedge subject(\imath z.onion(z))(e2) \wedge cut(e1) \wedge state(e1) \wedge e = e1 \rightarrow e2 \wedge subject(y)(e1)]$

$[[initP]] = \lambda e.\exists e1\exists e2\exists x[thin(x) \wedge piece(x) \wedge path(x)(e2) \wedge cut(e2) \wedge process(e2) \wedge subject(\imath z.onion(z))(e2) \wedge cut(e1) \wedge state(e1) \wedge e = e1 \rightarrow e2 \wedge subject(juan)(e1)]$

Finally, the proposed analysis accounts for all the semantic and syntactic properties of SIFs that have been discussed earlier.

4)   Future collaboration with host institution (if applicable)

It is planned to continue the joint project with Antonio Fábregas on the syntax and semantics of SIFs, and, more generally, secondary predication and manner modification, which might lead to another visit of the University of Tromsø in the future.

5)   Projected publications / articles resulting or to result from the grant (ESF must be acknowledged in publications resulting from the grantee's work in relation with the grant)

The results of the work summarized in this report are planned to be submitted for publication in a journal, possibly 'Linguistic Analysis' or 'Probus'.

6)   Other comments (if any)