

Locative Prepositions as Modifiers of an Unpronounced Noun

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1. Background and some first facts about Greek locatives

Locative P(reposition)s are puzzling for accounts that seek to understand whether Ps constitute a homogenous class of elements (van Riemsdijk 1990, 1998), and, most crucially, for those views which consider all Ps to be functional elements. We shed light on these issues by investigating the properties of Greek locative Ps in the beginning, and end up proposing that, by and large, locatives are the modifiers of an empty noun, *Place*, part of a DP which is the complement of a functional head, P_{Loc} .

Greek locatives may be encountered in what are known as Complex Preposition structures, (1). In this syntactic frame locatives are followed by a light P, *se* or *apo*, which introduces their complements with accusative case.¹ Note that *se* is always contracted on the definite determiner.

- (1) Kathisa *dipla apo/s' ti Maria*.
sat-1s behind *apo/se* the-acc Mary-acc
'I sat behind Mary.'

The same locatives may also be followed directly by their complements, appearing in the form of a clitic with genitive case. The corresponding full DPs are not possible in this environment.

- (2) Kathisa *piso tis/*tis Marias*.
sat-1s behind she-cl-gen/the-gen Mary-gen
'I sat behind her/Mary.'

There is both diachronic and synchronic evidence that the case of the clitic in (2) is genitive rather than the homophonous dative of Modern Greek (Terzi 2005). Genitive is associated exclusively with nominals in the contemporary language, nevertheless, the locatives we are investigating do not derive historically from nouns, (Skopeteas 2002), neither do they carry nominal (or other type of) inflection.

One may consider as a third frame, the frame in which locatives are encountered without a complement. It is because of this frame that they are referred to as intransitive Ps and even as adverbials by traditional Greek grammarians (Tzartanos 1945/2002).

2. Similarities between locative Ps and nominals in Greek

The genitive case of the clitics that follow locatives, (2), offers some first indication for a nominal structure. Further evidence for a nominal structure in which Greek locatives participate is provided when one compares locatives with adjectives that modify nouns.

a. Notice that while a (genitive/possessor) clitic is possible postadjectivally in the nominal domain, a full DP is not, (3a). (3b) demonstrates that a clitic, but not a full DP, may follow the locative.

- (3) a. To kenurio tu/*tu Niku aftokinito (tu/tu Niku)
the new his-cl-gen/the-gen Nick-gen car
'His/Nick's new car.'

¹ See Anagnostopoulou 2005 for other environments in which these two Ps are encountered.

- b. Epano tu/*tu Niku.
 on he-cl-gen/the-gen Nick-gen
 ‘On him/Nick.’

b. Full DPs could follow both adjectives and locatives, but ceased to be able to during similar periods, i.e., from the 12th to the 15th century, in both domains (see Alexiadou 2005, Manolissou 2000 and Theophanopoulou-Kontou 2000 respectively).

- (4) To proton tis tragodias meros.
 the first the-gen tragedy-gen part
 ‘The first part of the tragedy.’ (Aristophanes, *Frogs* 1120)
- (5) estratopedefsanto ekso tis poleos ...
 camped-3p outside the-gen city-gen
 ‘They camped outside the city.’ (Xenophon, *Hellenica* 5.2.25)

c. The clitic that follows the adjective in nominals, (6a), is associated with animacy restrictions (Alexiadou & Stavrou 2000), also manifested by the clitic following locatives, (7a):

- (6) a. O trelos tu odigos b. O trelos odigos tu
 the crazy his driver the crazy driver his
 ‘His crazy driver.’ ‘His/its crazy driver.’
 (i.e., the crazy driver of Mr. X) (i.e., the crazy driver of Mr.X or of the bus)
- (7) a. *I Eleni perimene brosta apo tin eklisia_i ke i Maria mesa tis_i.
 the Eleni was-waiting in-front *apo* the church and the Mary inside she-cl-gen
 b. I Eleni perimene brosta apo tin eklisia_i ke i Maria mesa se afti_i.
 the Eleni was-waiting in-front *apo* the church and the Maria inside *se* she-pron.-acc²

I believe that we can make sense of the above behavior and facts if we take locatives to also participate in a nominal structure. More precisely, I will consider the locative in (2), for instance, to be the modifier of a phonetically null noun, which I call *Place*, and which has a null determiner. *Place* amounts to a DP which denotes the physical space surrounding what appears as the Ground argument of the locative.

- (8) [DP \emptyset [XP piso tu [X [NP *Place* [DP $\#$]]]]]
 behind he-cl-gen he-cl-gen

I consider the (genitive) clitic complement of the locative to be the possessor of *Place*. Just like in the nominal domain, (6), there are two positions for possessive clitics: a) a post-*Place* one (corresponding to the postnominal position in ordinary DPs) and b) a post-locative one (corresponding to the postadjectival position). In Botwinik-Rotem & Terzi (2008) we propose that these two positions are not associated via movement. The postnominal is the default one, while the postadjectival becomes available only in the presence an adjective/modifier, and the clitic demonstrates animacy restrictions.

The proposed structure in (8) is not an instance of *substantivization* (Chierchia 1998, Giannakidou & Stavrou 1999), (9), although locatives may also be encountered in such contexts, (10):

- (9) a. I plusii [0] xsexnun apo pu ksekinisan.
 the rich forget-3p from where started-3p
 ‘The rich forget where they started from.’
 b. Tin Maria tin elkii to agnosto [0]
 the Mary her attract-3s the unknown [0]
 ‘Mary is attracted to the unknown.’ (from Giannakidou & Stavrou 1999)

² See Botwinik-Rotem & Terzi (2008) for an account of some exceptions to the animacy restrictions demonstrated by clitics following locatives.

4. Spanish *substantives* are also the modifiers of *Place*

Spanish locatives share a number of properties with their Greek counterparts. Just like in Greek, they are always followed by a light P, *de*, which is followed by their complement DP.

- (23) La facultad está cerca de un edificio gris.
the school is close *de* a building grey
'The school is close to a grey building.'

Like Greek locatives, Spanish locatives are grammatical without a complement, (24b), as a consequence of which they are also often referred to as intransitive Ps (or adverbs):³

- (24) a. Conoces a alguien que viva cerca de la Universidad?
Do you know someone who lives near the university?
b. Sí, conozco a alguien que vive cerca.
Yes, I know someone who lives near. (from Campos 1991)

Campos (1991), following Plann (1985), calls the locatives of (23) *substantives* and notices that they can be stranded after wh-movement of the *de*-PP, (25). Such extractions are also well-formed in Greek.

- (25) a. *De qué edificio_i* está cerca *t_i* la facultad?
'What building is the school near (to)?'
b. La pastelería *de la cual_i* vivo detrás *t_i* es buenisima
'The pastry shop behind which I live is excellent.'

Campos concludes that extractions such as in (25) are related to some [+N] feature of substantive Ps, or else, that they are similar to wh-extraction of complements of nouns (rather than being instances of the Germanic Preposition stranding). Thus, he essentially adopts Plann's (1985) diagnostics, according to which Spanish locatives have properties of both, nouns and adjectives, hence, share the categorial feature [+N], and for this reason they are 'neutralized categories'. For Plann (1985) substantives are like nouns because they can be the objects of prepositions, (26), and can be modified by possessive adjectives, (27).

- (26) El gato me espiaba [_P desde] [_{SP} debajo de la mesa]
'The cat was spying on me from under the table.'
(27) Venía un hombre detrás mío.
was-coming a man behind mine
'A man was coming behind me.'

On the other hand, they are also like adjectives because they can be modified by adverbs, (28), (even when modified by possessive adjectives, (29)), and may occur with the quantifier *muy* 'very', (30).

- (28) No estamos exactamente cerca de resolver el problema.
'We are not exactly close to solving the problem.'
(29) Venía un camion justamente detrás nuestro.
'A truck was coming exactly behind us.'
(30) En realidad no nives muy cerca.
'In reality you don't live very near.'

I believe that the facts in (26) are not sufficient to render locatives similar to nouns however. Unless one is able to argue that the complement of *desde* in (26) is a bare noun, we can safely assume that it is a full DP. If so, then *debajo* does not have to be the head noun of this DP but can occupy any other of a

³ Spanish substantives are referred to either as adverbs (Bello (1847), or as complex prepositions when used transitively and adverbs when used intransitively (Ramsey 1956). A more complete list of Spanish substantives includes: *alrededor* 'around', *dentro* 'inside', *fuera* 'outside', *enfrente* 'in front', *delante* 'in front', *encima* 'on'.

number of positions in the DP structure, one of them being the modifier of the empty *Place* proposed on the basis of the Greek. As for (27)=(31a), it seems entirely plausible to consider it the counterpart of the Greek frame in which the locative is followed by the possessive clitic, (31b).

- (31) a. Venía un hombre detrás mío.
 b. Erxotan enas andras piso mu.
 was-coming a man behind mine
 ‘A man was coming behind me.’

Thus, the claims for the noun status of Spanish locative *substantives* have no good reasons to be maintained. On the other hand, their adjectival status offers crosslinguistic support to the idea that they are the modifiers of *Place*, as in (32), (leaving aside the reverse order of adjective/noun in Spanish):

- (32) ... [_{P_{Loc}} [_{P_{Loc}} [_{DP} \emptyset [_{XP} detrás [_{NP} *Place* [_{PP} de [_{DP} una pasteleria]]]]]]]]
 behind de a pastry shop

Note, finally, that the interpretation of substantives differs from that of simple locative Ps, just like in the Greek pairs earlier: (33a) has a precise interpretation which is missing from (33b). We attribute this interpretation associated with substantives to the fact that *Place* is modified. By contrast, *en* in (33a) occupies the P_{Loc} of (32) and *Place* is not modified.

- (33) a. El libro está encima de la mesa.
 the book is on de the table
 b. El libro está en la mesa.
 the book is on the table

The advantages of proposing (32) for Spanish locatives are several: we dispense with the obscure notion ‘neutralized categories’, we do not employ (+N) categorial features, in the spirit of Chomsky (2001), and we are in a position to explain contrasts in interpretation such as between (33a) and (33b)

5. English locatives also modify an empty *Place*

English locatives seem different from Greek and Spanish at first glance. They are not often referred to as adverbs, neither have they been associated with nominal behavior in any obvious manner.⁴ It is therefore interesting that a small set of locative elements has recently been associated with an empty noun in English. Kayne (2004) proposes that ‘here’ and ‘there’ are demonstratives that modify an empty noun, PLACE, with an empty determiner. This empty noun may even be overt in some dialects of English:

- (34) This here/that there place.

The Greek counterparts of ‘here’ and ‘there’ resemble English in this respect, with the difference that the overt manifestation of *Place* is widely accepted:

- (35) Afto edo/ekino eki to meros.
 this here/that there the place
 ‘This here/that there place.’

The Greek locatives we have been discussing are also compatible with an overt *Place*.

- (36) To kato/brosta meros.
 the under/in-front place

⁴ With the exception of Bresnan (1994) who studies English locatives (and temporals) in subject and object position and associates their presence in such positions with the fact that they are the complements of empty *Place* (and time) nouns, i.e.,: [_{NP} (A PLACE) [_{PP} under the bed]] is a good place to hide.

Thus, the facts in (36) offer further support to my initial proposal concerning the presence of *Place* in Greek locatives. Presumably the phrases in (36) are not the complements of P_{Loc} , as is confirmed by the fact that they cannot be modified by *akrivos* ‘right/precisely’, (37) (while they can be modified by *poli* ‘very’, (38)).

- (37) To (*akrivos) kato/brosta meros.
 the precisely under/in-front place
 (38) To (poli) kato/brosta meros.
 the very under/in-front place

The counterparts of (36) are ungrammatical in English.

- (39) a. *This/the under place.
 b. *This/the in front place.

Postulating an unpronounced element, however, does not necessarily presuppose the existence its overt counterpart, see Kayne (2005) for this relationship crosslinguistically. Nevertheless, we notice that, even in English, ‘front’ may modify an overt place-like noun.

- (40) The (very) front part/side.

Notice that ‘in front’ can also be used intransitively, as in (41) below (from Svenonius 2004a).

- (41) I saw a line of soldiers. The one in front (of it) was talking on the telephone.

Furthermore, a number of other English locatives can be used intransitively, (42), also from Svenonius (2004a):

- (42) a. As the group approached the final summit, Espen stayed behind (them).
 b. There was a box in the table. Inside (it) was fine Swiss chocolate.
 c. We stood on a bridge. Below (it) we could see barges laden with port wine.
 d. Nils looked over the snowdrift. The frozen fjord beyond (it) was dotted with seals.

Moreover, comparing the above locatives with those involving only a ‘light’ P, we notice again a precise interpretation in the former, (43a), which is missing from the latter, (43b), (cf. (20) vs. (21)).

- (43) a. *The plane is inside the air.
 b. The plane is in the air.

The above make me suggest that ‘in front’ also has a structure such as that proposed for Greek and Spanish in (17) and (32) respectively, namely, the structure below:

- (44) ... [P_{Loc} [P_{Loc} in [DP \emptyset [XP front [NP *Place* [PP of [DP Mary]]]]]]]

Hence, in English as well, the P_{Loc} functional head, now hosting ‘in’, takes a DP complement with *Place* as its head noun, and ‘front’ modifies this noun. I believe that similar considerations hold for the structure of the locative Ps in (42) as well.

5.1 The different pieces of English complex prepositions

Although the similarities between Greek and English locatives pointed out in the previous section may support an analysis of English locatives on a par with that of their Greek counterparts, there are a number of differences as well (and see also Terzi (2006) for an additional puzzle posed by English, with respect to the morphological case of the pronominal complements of locatives):

a. By contrast to ‘in front (of)’, the P that arguably occupies P_{Loc} in instances such as ‘inside’ or ‘behind’ forms a compound with the modifier of *Place*. I will consider this compounding to be the result of some post-syntactic process that does not bear on my claims in any crucial manner.

b. While the second part of locatives such as ‘below’ is an adjective, this is not the case with ‘behind’, ‘inside’, ‘beneath/underneath’ (but also ‘in front’), in which it is a noun. One could, therefore, argue that, at least in these instances, locatives are not the modifiers of *Place* but the phonological instantiations of it. There are empirical and conceptual reasons not to adhere to this view however:

1. Although there are a number of English locatives whose second part is a noun rather than an adjective, there are also others of which the second part is clearly an adjective, i.e., ‘be-low’.

2. Nouns such as ‘side’, can function as modifiers of other nouns, moreover, even of nouns other than *Place*, i.e., ‘side dish’. This is much more common with nouns such as ‘front’ or ‘back’, i.e., ‘front/back door’, etc. Furthermore, nouns may modify other nouns in English; modification is not an exclusive or defining property of adjectives (Baker 2003: 195). Interestingly, Liu (2006) proposes that Mandarin locatives also modify an unpronounced noun, but they are nominal rather than adjectival.

3. It is unrestrictive to hold that a locative is sometimes the modifier of *Place* and sometimes the instantiation of it within the same language, but also crosslinguistically (Kayne 2005). More specifically, it goes against Kayne’s (2005: 289) claim according to which: *UG imposes a maximum of one interpretable syntactic feature per lexical or functional element*.⁵

6. Conclusions

In this work I investigated the status of locative Ps by focusing on their internal structure and, in particular, on the relationship they bear with their complements. On the basis of Greek initially, I proposed that what we think of as locative Ps are elements that modify an unpronounced noun, *Place*. This noun denotes the physical space surrounding the reference landmark (i.e., what is considered the Ground argument of the locative). These claims shed light on the widely common, but often vague, view that locatives implicate some type of nominal crosslinguistically, as a result of which they pose problems for theories that seek to adopt a functional status for all Ps (Grimshaw 1991, Botwinik-Rotem (2004).

I also claimed that the unpronounced noun *Place* that is modified by locatives is the complement of a P_{Loc} functional head, a claim which provides (partial) empirical support to the above theories. Furthermore, I showed that P_{Loc} can also host overt elements and, if a modifier of *Place* is absent, we then obtain imprecise denotation of location. As for the DP complement of locatives, I hold that it is the possessor of the non-phonologically realized noun *Place*. With respect to this issue, English instigated the search for an alternative analysis, according to which some type of partitive (rather than a possessive) relation holds between locatives and their complements, but no such relationship could be established (see Terzi 2006 for details).

Finally, I demonstrated that the approach to locative Ps developed here on the basis of Greek is able to extend to Spanish and English (and presumably to other languages as well) with potential differences across and within languages, such as whether P_{Loc} is overt or not, whether the modifier of *Place* is present, and whether it is adjectival or nominal

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⁵ Nevertheless, in a detailed study of the various types of the English noun ‘home’, Collins (2006) considers the *-side* of ‘inside’ or the *-neath* of ‘underneath’ to be the overt instantiations of a ‘light’ noun, counterpart of the unpronounced noun *Place*.

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