

Extraction without an escape hatch: The case of Greek possessor extraction*

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1. Introduction

Possessor extraction from a definite DP exhibits notable variation across languages, a fact that has long been recognized (see Gavruseva 2000 for discussion on cross-linguistic variation). This paper focuses specifically on Greek, which falls along with Hungarian, Chamorro or Tzotzil within the group of languages allowing possessor extraction from a definite DP. The main objective of this paper is to investigate why Greek diverges from languages such as standard English or Dutch in permitting such extraction. A previous study by Horrocks and Stavrou (1989) specifically addressed this question for Greek vs English. In Greek, possessor extraction can take place both from the verb's internal or external argument position, as shown below:

- (1) a. Pianu_i djavases [to vivlio t_i]?
 whose.GEN read.3SG the book.ACC
 'Whose book did you read?'
 b. Pianu_i ihe [o pateras t_i] djavasi to vivlio?
 whose.GEN had.3SG the father read the book
 'Whose father read the book?'

According to Horrocks and Stavrou's analysis, possessors undergo successive cyclic movement from their typical postnominal position in Greek to Spec,DP, and then to Spec,CP, as demonstrated in (2). This analysis posits a distinction between Greek and English, suggesting that the Spec,DP position in Greek resembles A-bar positions such as intermediate Spec,CP positions, which are known to serve as intermediate landing sites for successive

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cyclic movement. Conversely, Spec,DP of English has the properties of A-positions, which are typically not assumed to function as escape hatches (see also Alexiadou et al. 2007).

(2) $[_{CP} \text{Pianu}_i [_{TP} \text{djavase}_{ST} [... [_{DP} t_i [_{D'} \text{to}_D \text{vivlio } t_i]]]]?$

Horrocks and Stavrou's analysis made a substantial impact as it not only draws a parallel between the nominal and the clausal domain but also strengthens the idea that long-distance A-bar dependencies involve successive cyclic movement (see Van Urk 2020 for an overview). Nevertheless, their proposal has faced criticism on various grounds (see Theofanopoulou-Kontou 1993). We present a remnant movement analysis of possessor extraction. We propose that the apparent possessor (sub-)extraction in (1) is better explained under a remnant movement analysis in which the possessor itself is never moved outside of the DP in which it first merged (see also Angelopoulos 2019a). On such an analysis, the derivation of (1) involves three independently motivated movement steps: the possessor's to a DP-peripheral Spec,FocusP, the remnant DP's to the middle-field, and the FocusP-remnant's to the left periphery of the clause. We first lay out our analysis and its independently motivating underlying assumptions (Section 2). We then demonstrate that our analysis is superior to the one put forth by Horrocks and Stavrou (1987) in three specific contexts: recursive genitives (Section 3) and PPs (Section 4), as well as N+CP constructions (Section 5). The paper concludes with Section 6.

2. Possessor extraction as remnant movement

Based on the findings presented in Sections 3 and 4, which clearly demonstrate the absence of successive-cyclic movement through Spec,DP, we propose that DPs are impenetrable domains, i.e. possibly phases, but, crucially, without an escape hatch. Spec,DP is not an escape hatch either because it is an A-position, as in English, or because it is not projected at all. Therefore, the apparent (sub-)extraction from DPs in Greek must be the result of a distinct set of operations. We contend that these operations are independently available and that positing an escape hatch within the Greek DP would constitute an unnecessary additional assumption. In what follows, we present the core three tenets of the analysis. First, we propose the existence of an independently motivated left periphery just above DP, which allows for XP-fronting (typically of genitives/possessors). This left periphery serves interpretive and information structure purposes, such as marking of part-whole relationships (see Alexiadou and Gengel 2012, on partitivity in the DP). Therefore, only XPs compatible with a part-whole relationship can occupy this fronted position. Genitive possessors, exemplified in (3a), express part-whole relationships, allowing for fronting, as illustrated in (3b). On the other hand, in (4a), the genitive *ton Vrikselon* 'Brussels' does not convey a part-whole relationship; instead, it denotes the city itself, without ownership or inclusion. Consequently, it cannot be fronted in the left periphery of the DP, as shown in (4b). As shown in (5), this Focus-like marking of the possessor licenses deletion of the rest of the DP, which can be analyzed as NP-ellipsis, licensed after fronting of the possessor.

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- (3) a. *Idhe ti meghali poli ton piraton/tu nisiu.*
 saw.3SG the big city.ACC the pirates.GEN/the island.GEN
 ‘She saw the big city of the pirates/of the island.’
 b. *Idhe [TON PIRATON/TU NISIU]_i ti meghali poli t_i.*
 saw.3SG the pirates.GEN/the island.GEN the big city.ACC
 ‘She saw the big city of the pirates/of the island.’
- (4) a. *Idhe ti meghali poli ton Vrikselon.*
 saw.3SG the big city.ACC the Brussels.GEN
 ‘She saw the big city of Brussels.’
 b. **Idhe [TON VRIKSELON]_i ti meghali poli t_i.*
 saw.3SG the Brussels.GEN the big city.ACC
 ‘She saw the big city of Brussels.’
- (5) *Dhen idhe tin poli ton ipoton, idhe [XP [DP ton_D PIRATON]_i*
 not saw.3SG the city.ACC the knights.GEN saw.3SG the pirates.GEN
[X’ X [DP tin poli t_i]]
 the city
 ‘He did not see the knights’ city, he saw the pirates.’

Fronted genitives, as in (3b), carry emphatic stress and are limited to one per phrase. Building on analyses such as Giusti (2006) i.a. that posit a split DP consisting of Topic- and Focus-projections, we suggest the existence of a criterial projection labeled as Foc_{part} over D. This Foc_{part} head is different from Focus in the CP-periphery, which serves different interpretive functions, such as separating the focused element from the presupposed part of the clause. Second, such peripheral heads like Foc_{part} are criterial in Rizzi’s (2007) sense: they attract an XP that matches the head’s criterial feature and impose criterial freezing of XP. Thus, if XP happens to also carry another criterial feature, which can be matched by some higher criterial head, this higher criterial head cannot attract XP itself. Instead, XP has to pied-pipe a phrase dominating it. We propose that this is how *wh*-possessors should be analyzed. The *wh*-D-head carries a [Q] criterial feature, as well as a [Part]-feature, as shown by the fact that *wh*-possessors too require a part-whole relationship.

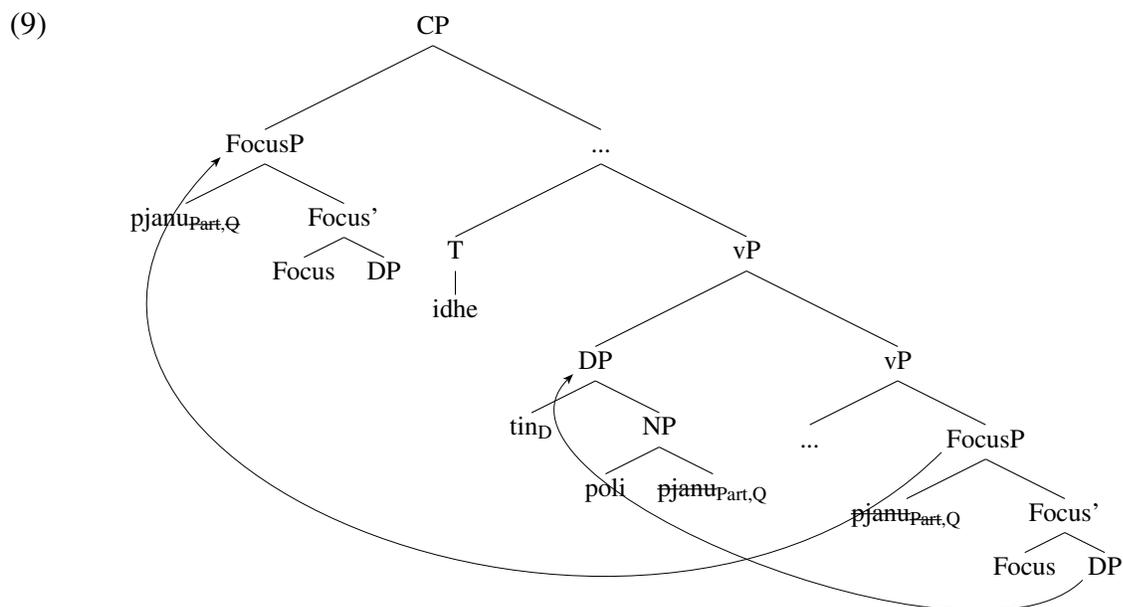
- (6) a. *Pjanu tin poli idhe? Ton ipoton/* Ton Vrikselon?*
 whose.GEN the city.ACC saw.3SG the knights.GEN the Brussels.GEN
 ‘Whose city did she see? The knights’ city/Brussels.’
 b. *Pjanu idhe tin poli? Ton ipoton/* Ton Vrikselon?*
 whose.GEN saw.3SG the city.ACC the knights.GEN the Brussels.GEN
 ‘Whose city did she see? The knights’ city/Brussels.’

Let us consider the string *pjanu tin poli idhe* ‘whose city did she see?’ from 6a. *Pjanu* has a [Q] and a [Part]-feature. The former feature, i.e. [Part], is matched by Foc_{part} , triggering movement to its Spec. The other criterial feature, i.e. [Q], is matched by C_Q , (7a). As the *wh*-possessor itself is frozen in $\text{Spec}, \text{Foc}_{\text{part}}$, $\text{Foc}_{\text{part}}\text{P}$ needs to move to C_Q , (7b).

- (7) a. *pro* idhe [_{FocusP} pjanu_[Part,Q] [_{Focus'} Focus [_{DP} tin poli pjanu]]]
 b. [_{CP} [_{FocusP} pjanu_[Part,Q] [_{Focus'} Focus [_{DP} tin poli pjanu]]] [_{C'} C_Q [_{TP} *pro* idhe FocusP]]

Third, we propose that apparent possessor sub-extraction from a DP is the result of remnant movement. The two steps illustrated in (7) underlie the derivation of (6a). The derivation of (6b) is only minimally different and follows if we assume an independently motivated position in Greek between T and the thematic position of external arguments. This position can host objects in VOS orders, which are fairly common (8a) (see also Angelopoulos 2019b). Indeed, in cases of possessor sub-extraction, the unmarked position of the accusative position is before and not after a postnominal subject, (8b). We therefore argue that apparent sub-extraction is the result of DP-movement of the accusative possessum—in fact, movement of a DP-remnant excluding the focused possessor—to the middlefield, followed by remnant movement of Foc_{PartP} (9).

- (8) a. Idhan to spiti ta pedhja.
 saw.3SG the house.ACC the kids.NOM
 ‘The kids saw the house.’
 b. Pjanu_i idhan (?? ta pedhja t_i) to spiti (ta pedhja t_i)?
 whose.GEN saw.3SG the kids.NOM the house.ACC the kids.NOM
 ‘Whose house did the kids see?’



In sum, there is no escape hatch in the DP. The only movements allowed are: (i) movement of the whole DP, (ii) movement of peripheral projections containing DP (e.g. whole Foc_{PartP}s), (iii) movement of remnants of such projections (DP-, FocP-remnants). The analysis relies on the availability of remnant movement, which is independently motivated and constrained (e.g. by the theory of criterial movement). In the following sections, we explain why (9) makes better predictions compared to an escape hatch-based analysis.

3. Possessor extraction from recursive genitives

In this section, we will explore recursive genitives and their implications for the analysis of possessor extraction. Specifically, we argue that recursive genitives challenge an analysis of possessor extraction as successive cyclic movement (Horrocks and Stavrou 1987) and support the remnant movement analysis sketched in the previous section. To begin with, we examine cases of recursive genitives, such as those in (10), where two genitive DPs follow the accusative DP argument. The most embedded genitive, *tis Afrikis* ‘Africa’s,’ is not related to the accusative noun, but rather serves as the possessor argument of the first genitive, *ton kalitehnon* ‘the artists.’ The first genitive, in turn, functions as the possessor argument of the accusative DP, *tus dhiskus* ‘the albums.’

- (10) Ihe tus dhiskus ton kalitexnon tis Afrikis.
had.3SG the albums.ACC the artists.GEN the Africa.GEN
‘She had the albums of Africa’s artists.’

We observe that the most embedded genitive cannot undergo long-distance A-bar movement into the matrix clause, (11a), but it can be moved along with the first genitive, i.e. as part of a larger constituent, (11b)

- (11) a. *Pjas horas_i ihe tus dhiskus ton kalitexnon t_i?
which.GEN country.GEN had.3SG the albums.ACC the artists.GEN
‘Of which country’s artists did he have albums?’
b. [Ton kalitexnon pjas horas]_i ihe tus dhiskus t_i?
the artists.GEN which.GEN country.GEN had.3SG the albums.ACC
‘Of which country’s artists did he have albums?’

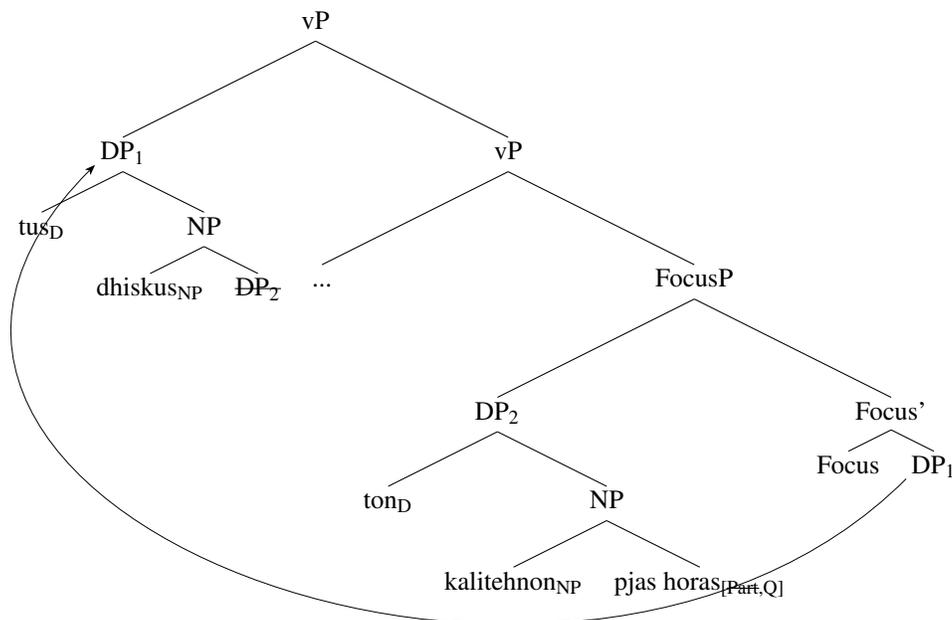
In Horrocks and Stavrou (1987), the fact that the most embedded genitive cannot be *wh*-moved was noted, but the proposed analysis relied on an *ad hoc* modification of the definition of barrierhood and thus failed to provide a satisfactory explanation. In contrast, the analysis presented here offers a straightforward account for the ungrammaticality of (11a). Similarly to plain possessor extraction, the genitive possessor *pjas horas* ‘which country’s,’ carries both a [Part]-feature and a [Q]-feature, which need to be licensed locally in a Spec-Head configuration. However, the [Q]-feature can only be satisfied in the clause’s left periphery and not in D’s. Based on this, we argue that (11a) is ungrammatical because the *wh*-item has no way of moving out of the DP where it is base generated. Direct movement of the *wh*-item from its base position into the matrix Spec,CP, as in (12a), is not possible because the definite DP where it is base generated is an opaque node for extraction and blocks *wh*-movement out of it. Similarly, successive movement of the *wh*-item into Spec,Foc_{part}P of *ton kalitehnon* and then into Spec,CP, as shown in (12b), is also prohibited due to a number of reasons. Firstly, Spec,Foc_{part}P is a criterial position, thus blocking movement of the genitive possessor to Spec,CP where it could satisfy its [Q]-feature. Secondly, a scenario involving movement of the DP-remnant *ton kalitehnon* into the middle-field followed by

remnant FocusP-movement of *pjas horas* is blocked as it would cross over the higher DP, which must also be impenetrable.

- (12) a. * $[_{CP} pjas horas_{[Foc,Q]} [C' C \dots [_{DP} tus_D [_{NP} dhiskus_{NP} [_{DP} ton_D [_{NP} kalitehnon_{NP} pjas horas_{[Foc,Q]}]]]]]$
 b. * $[_{CP} pjas horas_{[Foc,Q]} [C' C \dots [_{DP} tus_D [_{NP} dhiskus_{NP} [_{FocusP} pjas horas_{[Part,Q]} [_{Focus'} Focus [_{DP} ton_D [_{NP} kalitehnon_{NP} pjas horas_{[Part,Q]}]]]]]]]$

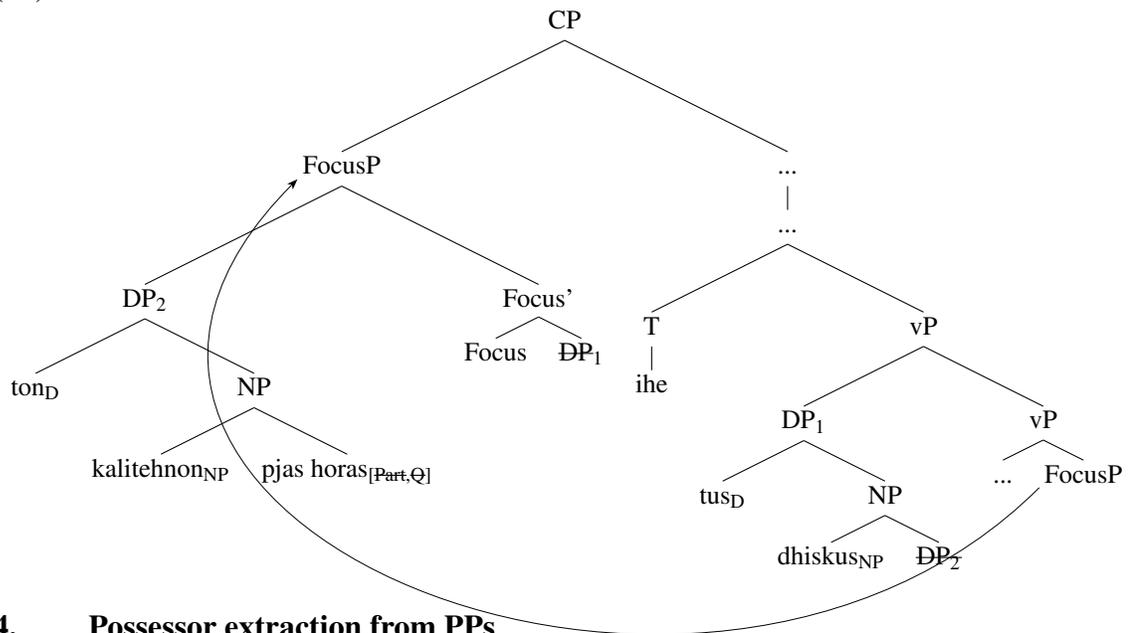
Turning now to the grammatical structure in (11b), we identify the accusative DP realized by *tus dhiskus* 'the albums,' as DP₁ in the derivation in (13). DP₂, which contains the two genitive arguments *ton kalitehnon* 'the artists' and *pjas horas* 'of which country', is embedded within DP₁. The latter argument, *pjas horas*, carries a [Part]-feature and a [Q]-feature, and the former is satisfied by pied-piping DP₂ into Spec,Foc_{Part}P of DP₁. Following this step, DP₁, that is, the accusative possessum, undergoes remnant movement in the middle-field, as shown in (13).

(13)



Note, however, that the derivation in (13) is not complete because *pjas horas* also has a [Q]-feature that needs to be satisfied. Yet, *pjas horas* is frozen in Spec,Foc_{Part}P due to criterial freezing. So, after remnant movement of DP₁ into the middle field, DP₂ can satisfy its [Q]-feature pied-piping Foc_{Part}P into the clause's left periphery, where the [Q]-feature of *pjas horas* can be satisfied, as shown below:

(14)



4. Possessor extraction from PPs

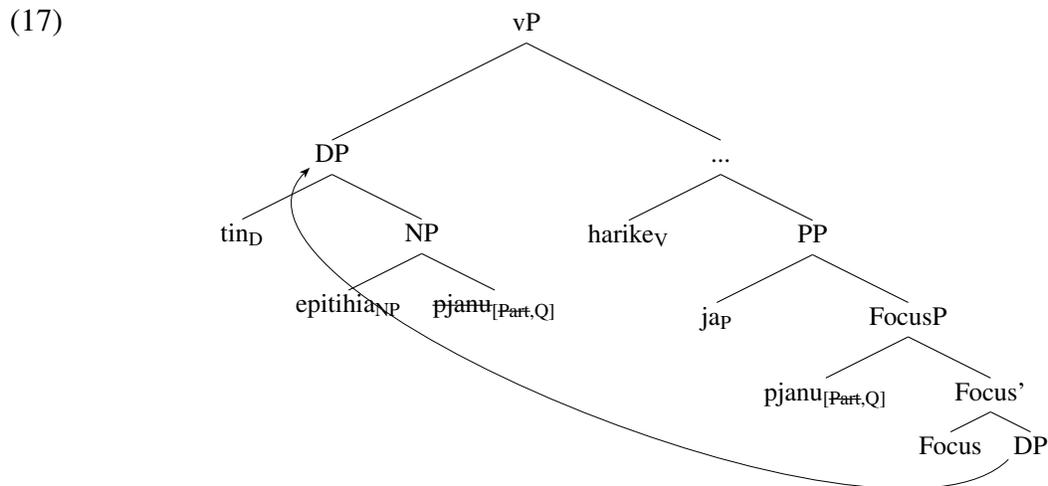
Building on Angelopoulos (2019a), we examine the distribution of possessors in PPs. Specifically, we begin by noting that a genitive possessor, typically positioned postnominally in Greek, can surface preminimally within PPs, in which case the possessor is interpreted as focused, mirroring its behavior in plain DPs, as shown in (15a), where the PP has been moved to the clause’s left periphery. Note, however, that when a DP is embedded under a preposition, the possessor and the accusative possessum cannot be separated, unlike in the case of plain DPs arguments of verbs. This restriction is illustrated in (15b) where it is shown that the genitive possessor *pjanu* cannot surface to the left of the clause separate from the P, *ja*, and the accusative possessum, *tin epitihia*. It is worth noting, however, that this restriction cannot be attributed to the PP acting as an island. This is supported by examples such as (15c), first noted in Angelopoulos (2019a), where, as shown, the accusative possessum, *tin epitihia* ‘the success’ can surface into a postverbal position, which is outside the DP where it was base generated, and, crucially, outside the PP. In this case, it is worth noting that the possessor is allowed to occur in the clause’s left periphery, but together with P, stranding the possessum in the postverbal position.

- (15) a. Ja (PJANU) tin epitihia (pjanu) harike?
 for whose.3SG the success.ACC whose.GEN was.happy.3SG
 ‘For whose success was she happy?’
- b. *Pjanu_i harike [ja tin epitihia t_i]?
 whose.GEN was.happy.3SG for the success.ACC
 ‘For whose success was she happy?’
- c. [Ja t_i pjanu] harike tin epitihia_i?
 for whose.GEN was.happy.3SG the success.ACC
 ‘For whose success was she happy?’

We begin by noting that the successive cyclic analysis of possessor extraction cannot account for the data in (15b) and (15c). As PPs are not islands, as evidenced by the movement of the accusative possessum out of them in (15b), the successive cyclic movement analysis proposed by Horrocks and Stavrou (1987) fails to account for the restriction on possessors being able to move out of PPs, as seen in (15c). On the other hand, we show that (15b) and (15c) can be accounted for under the proposed analysis. Specifically, as previously assumed, the genitive possessor, *pjanu* ‘whose,’ carries a [Part]-feature and a [Q]-feature. The first is satisfied via DP internal movement to Spec,Foc_{part}P, as shown below. In order to satisfy the [Q]-feature, *pjanu* pied-pipes the PP in (16) to the left periphery of the clause, where this feature can be satisfied.

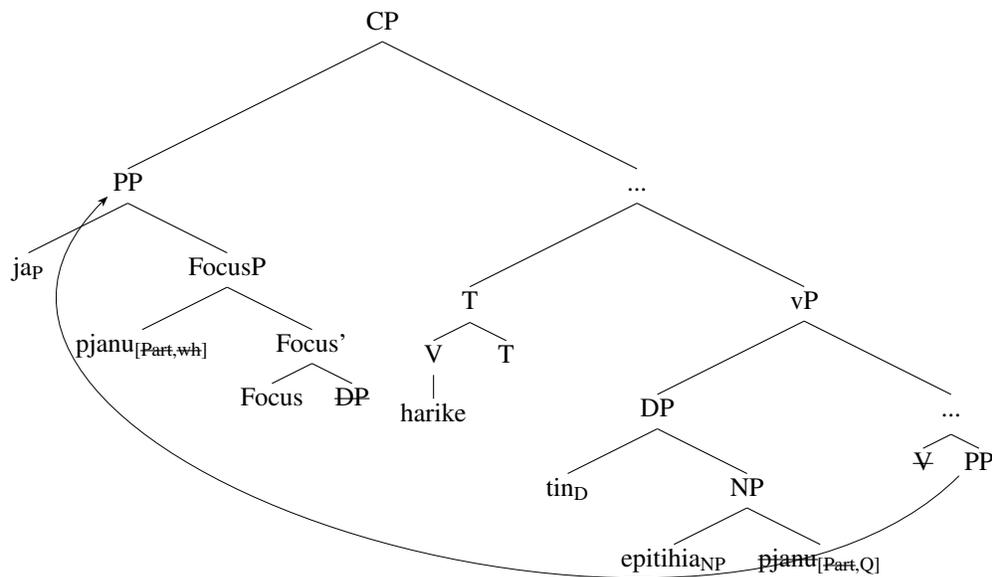
(16) [PP jāP [FocusP pjanu_[Part,Q] [Foc' Foc [DP tin_D [NP epitihia pjanu_[Part,Q]]]]]]

Now, let us examine (15b). The genitive possessor, *pjanu*, cannot be moved directly out of the DP, where it originates, to the left periphery of the clause to satisfy its [Q]-feature due to the DP’s island status. However, it can move to Spec,Foc_{part}P, as illustrated in (16), to satisfy its Foc feature first. Nonetheless, since this position is criterial, the possessor undergoes criterial freezing there, thus, it is prevented from undergoing any further movement. As a result, (15b) is ungrammatical because the [Q]-feature of the possessor remains unsatisfied. In (15c), the possessor undergoes movement into Spec,Foc_{part}P, where it satisfies its Foc-feature, as shown in (17). The DP remnant which comprises the accusative possessum, *tin epitihia* ‘the success,’ is allowed to undergo movement into the middle-field.



The possessor also has a [Q]-feature that it needs to satisfy. Nevertheless, since the possessor cannot be moved out of the DP, which is an opaque node for extraction, there is only one way in which its [Q]-feature can only be satisfied, that is, via pied-piping of the PP remnant into the clause’s left periphery, as shown in the structure below. Assuming P is a phase-head in Greek, moving Foc_{part}P alone is impossible because it would have to pass through the phase edge of P, violating Antilocality. More generally, movement of plain DP complements of Ps out of PP (i.e. P-stranding) is blocked for the same reason.

(18)



5. Possessor extraction from N+CP constructions

In addition to the above predictions, the availability of an escape hatch in every DP, coupled with a free phase edge in non-*wh* CPs, would predict free extraction from every complex NP island that consists of a N and a complement CP. In Greek there are indeed apparent violations of the Complex NP island constraint (Horrocks and Stavrou 1987). Nonetheless, their grammaticality can vary (Theofanopoulou-Kontou 1993), crucially depending on the head noun. We show that a complex N+CP construction only allows A'-extraction from the CP if N is such that a complex DP headed by it can host DP-internally fronted XPs. To illustrate this, we consider Ns such as *fimi* 'rumor' vs *jeghonos* 'fact:' complex DPs with the former but not the latter can host fronted [D+Adj] constituents, in polydefinite constructions, commonly analyzed as fronting to a pre-D position (Alexiadou 2014 a.o.).

- (19) a. *Sxoliasa ti disaresti (ti) fimi oti apelisan atoma.*
 commented on.1SG the unfortunate the rumor that fired.3PL people
 'I commented on the unfortunate rumor that they fired people.'
- b. *Sxoliasa to disaresto (*to) jeghonos oti apelisan atoma.*
 commented on.1SG the unfortunate the fact that fired.3PL people
 'I commented on the unfortunate fact that they fired people.'
- (20) *Pja atoma sxoliases ti fimi/*to jeghonos oti apelisan?*
 which people commented on.2SG the rumor the fact that fired.3PL
 'intended: Which employees did you comment on the rumor that they fired?'

In the grammatical example formed with *ti fimi* 'the rumor,' the apparently A'-extracted XP first moves into a criterial projection over D, the one hosting the fronted AP in (19a), e.g. $\text{Foc}_{\text{part}}\text{P}$, which is unavailable in (19b) and the ungrammatical sentence formed with *to*

geghonos ‘the fact.’ Then, the remnant DP moves into the middlefield and apparent extraction is remnant fronting of $\text{Foc}_{\text{part}}\text{P}$ due to the [Q] feature of *pja atoma* ‘which people.’

6. Conclusion

In all three distinct contexts investigated—recursive genitives, PPs, and N+CP constructions—a remnant movement analysis of possessor extraction exhibits clear advantages over a successive cyclic movement analysis. According to this analysis, possessors are never moved outside a definite DP; rather, they always undergo movement as part of a remnant $\text{Foc}_{\text{part}}\text{P}$, in the D’s left periphery, where the possessor is moved. In a language such as Greek sub-extraction from DP correlates with the availability of a DP-periphery, which also explains the varying behavior of complex NP islands.

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