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On the Syntactic Status of Implicit Arguments: Greek as a Case Study

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1. Introduction

This paper is about the syntactic status of implicit arguments (IAs) in the short passive:

(1) The letter was sent.

The example in (1) implies that the letter was sent by an agent, indicating the presence of an IA in the short passive. This observation raises a significant theoretical question: is the implicit argument in the short passive syntactically represented, as posited by Collins (2005), or is it not syntactically represented, as argued by Bruening (2013)? Furthermore, if the IA is indeed syntactically represented, the inquiry extends to understanding its feature composition.

To explore these issues further, we undertake a detailed comparison between the IAs in Greek and English passives, with specific emphasis on the former. Our investigation centers around three diagnostics: (a) control, (b) reflexive binding, and (c) the distribution of secondary predicates. Although these diagnostics often yield negative results for the Greek verbal passive, in contrast to the English passive, we argue that this does not speak against the assumption of syntactically projected IAs. Upon closer examination, we demonstrate that the external argument of the Greek verbal passive is syntactically projected. However, there is not complete overlap as to the types of IAs available in the two languages.

Building on Collins (to appear), we posit three types of covert pronouns that can serve as external IAs: pro_{Def}, pro_{Gen}, and pro_{Exi}. Nevertheless, while the English verbal passive allows all of them, Greek verbal passives only permit pro_{Gen} and pro_{Exi}. When examining nominals in Greek, however, which also allow an external IA, we observe a resemblance to English verbal passives, as the full array of IA pronouns is allowed. We argue that this difference between Greek and English verbal passives stems from an independent difference between the two languages. In English, pro_{Def}, pro_{Gen}, and pro_{Exi} uniformly lack case, whereas in Greek, a null subject language, pro_{Def} has case, as it is systematically used in the subject position when null. Within Greek, a significant contrast arises between pro_{Exi} and pro_{Gen}. Pro_{Gen} can license control in temporal gerunds, while pro_{Exi} cannot. This distinction is attributed to two interrelated properties of pro_{Gen}, and pro_{Exi}: their structural shape and the syntactic positions they occupy. Specifically, pro_{Exi} lacks phi-features, whereas pro_{Gen}, possesses some phi-features. This discrepancy in feature specifications makes pro_{Gen} and pro_{Exi} correlate with different structural positions. In the case of pro_{Gen}, being a ϕP, it undergoes movement from its External Merge position in spec,vP to the T-area for licensing purposes, like overtly realized clitics. On the other hand, pro_{Exi} is an nP and remains in spec,vP without undergoing such movement.

The paper is structured as follows: First, we provide an overview of the phi-feature specification of pro_{Def}, pro_{Gen}, and pro_{Exi} in Section 2, serving as the foundation for our comparative analysis. In Section 3 we present evidence from control supporting the hypothesis that pro_{Gen} and pro_{Exi} are syntactically projected in the Greek verbal passive. In Section 4, we use binding as an additional diagnostic to support the existence of implicit arguments in the Greek passive and nominalizations. We then move on to Section 5, where we analyze a new contrast in the use of inflected and uninflected adjectives as secondary

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predicates in the passive, and show how this contrast provides additional evidence for the syntactic realization of IAs. Finally, in Section 6, we present an analysis of why pro_{Def} is disallowed in the Greek verbal passive, whereas it is allowed in nominalizations. Section 7 concludes the discussion.

2. The Phi-Features of IAs

In this section, we explore the existence of three types of covert pronouns that can be used as IAs in Greek: pro_{Exi}, pro_{Gen}, and pro_{Def}. We observe an interesting contrast between verbal passives and nominalizations: while the full array is allowed in the latter, pro_{Def} is blocked in the former. Let us delve into the specific features of each pronoun. The Greek passive introduces an existential interpretation, exemplified in (2). This sentence can be paraphrased as *someone sent the package this morning*, in which case the interpretation of the IA resembles that which Cinque (1988) attributes to the *quasi-existential* use of Italian *si*, which can also be paraphrased as *someone*. Additionally, pro_{Exi}, like *quasi-existential si*, is only compatible with specific time reference.

(2) To paketo stalthike to proi. Malon to estile o adherfos su.
the package send.NACT.PST.PERF.3SG this morning probably it.CL sent.3SG the brother your
'The package was sent this morning. It is likely that your brother sent it.'

Although pro_{Exi} can be paraphrased as *someone*, it differs from *someone* in that it lacks phi-features (cf. Šereikaitė 2022, Collins to appear and references therein). This becomes evident when contrasting pro_{Exi} with *someone* as the antecedent of a pronoun. Consider the set of sentences in (3). (3a) shows that *kapjos* 'someone' can serve as the antecedent of the pronoun *aftos* 'he.' However, in (3b), the IA is pro_{Exi}, and unlike *someone*, pro_{Exi} cannot be the antecedent of *aftos*. To make sense of this contrast, we can assume that while *kapjos* has 3SG features, making it a possible antecedent, pro_{Exi} lacks phi-features altogether, rendering it incapable of functioning as an antecedent.

(3) a. I pinakas eklapi apo $kapjon_i$, ce meta $aftos_i$ efighe.
the painting steal.NACT.PST.3SG by someone, and then he left
'The painting was stolen by someone, and then he left.'

b. * I pinakas eklapi IA_i, ce meta $aftos_i$ efighe.
the painting steal.NACT.PST.3SG IA and then he left
'The painting was stolen, and then he left.'

In (4), the verb is presented in a different form having a generic time reference. The IA acquires what is known as a *quasi-universal* interpretation, similar to the function Italian *si* has in generic impersonals (Cinque 1988). Unlike pro_{Exi}, the IA now necessarily implies the existence of more than one individual that satisfies the given description. Essentially, the interpretation of the IA resembles the generic use of *one* in English. Previous literature has argued that this interpretation arises through the application of the GEN operator. Further investigation is required, but it appears that this type of IA (hereafter referred to as pro_{Gen}) does possess phi-features in Greek, through not the full set. Particularly, the [Person] feature is deficient in pro_{Gen}. It is important to recognize [Person] as a composite feature/bundle, following the insights of Harley & Ritter (2002). Pro_{Gen} lacks certain features within this bundle, making it compatible with generic arbitrary reference. As a consequence, it cannot value [uPerson] on T, and the remaining bundle is PF-interpreted as either 2SG or 1PL when transmitted, e.g. in anaphor binding, as supported by the binding data we present in (16a) and (16b).

(4) Ean iparhi ena praghma pu kathe kalitehnis kseri ine oti i tehni dhen
if exist.3SG a thing that every artist know.3SG is that the art.NOM not
fimonete IA pote.
silence.3SG never
'If there is one thing that every artist knows, it is that art is never silenced.'

Fenger (2018) distinguishes between overt counterparts of pro_{Gen} and pro_{Exi} based on their phi-feature specification. Existential pronouns lack phi-features and consist only of an nP, while generic

pronouns include a ϕ node merged on top of the nP, forming a ϕP. It is possible that pro_{Gen} and pro_{Exi} realize the structures proposed by Fenger. In the upcoming section, we will present evidence from control suggesting the possibility of these pronouns occupying two distinct syntactic positions due to their different structural shapes: pro_{Exi}/nP remains in Spec,vP throughout the derivation, whereas pro_{Gen}/ϕP undergoes movement into the T-area.

Lastly, we turn to pro_{Def}, which, as we will show, appears in nominals, but not in the verbal passive in Greek. So, the Greek verbal passive is different from the English one, which, as argued in Collins (to appear), allows the full array of pronouns as IAs, including pro_{Def}. It is important to note that Greek, a null-subject language, uses pro_{Def} as a null subject. As a subject, pro_{Def} can have any non-null combination of phi-features, as it can bind reflexives with any non-null combination of phi-features, as shown in (5), a property that we will also show in Section 4 to arise with pro_{Def}, when used in nominals.

(5) a. pro_i aghapai ton eafto tu_i/ tis_i
he/she love.3SG the self his/ her
'He/She loves himself/herself.'

b. pro_i aghapate ton eafto sas_i
you love.3SG the self yours
'You love yourselves.'

We argue that the typology of implicit pronouns must be enriched to accommodate pro_{Def} in English. Unlike Greek, which is a null subject language, English restricts the licensing of its pro_{Def} to certain contexts, specifically those where it does not receive case, such as in passive constructions and nominalizations (Collins to appear). Conversely, Greek's pro_{Def} carries case, allowing e.g. its use in the nominative subject position. In contrast to pro_{Def}, we assume, as in Collins (to appear and references therein), that both pro_{Gen} and pro_{Exi} lack case (see also Fenger 2018 and Šereikaitė 2022 for similar assumptions about overt existential pronouns and pro_{Exi}). With this background in mind, we now delve into our first diagnostic, namely, control.

3. Control

One common argument in favor of the syntactic representation of implicit external arguments is implicit control, i.e. control exerted by the IA of the passive into a non-finite embedded clause. The syntactic nature of implicit control, though, is controversial and even standard examples, e.g. (6), have been analyzed in ways that do not require an IA (see Bhatt & Pancheva 2017 and references therein).

(6) The ship was sunk [PRO to collect the insurance.]

Nevertheless, null subjects of temporal gerundival clauses in Greek can only be controlled by syntactically represented arguments, (7a-7b). Michelioudakis (2020, 2021) has established that PRO subjects of temporal gerunds in Greek can also be controlled by the IA of short passives, especially when it has the properties of what Collins (to appear) calls pro_{Gen} and what Cinque (1988) calls *quasi-universal* ARB, e.g. in generic passives, (8).

(7) a. pro_i eklisa tin porta [PRO_i vjenondas apo to ktirio].
pro closed.1SG the door PRO going.out from the building
'I closed the door, as I was leaving the building.'

b. * I porta eklise [PRO vjenondas apo to ktirio].
the door closed.3SG PRO going.out from the building
'The door closed, as I was leaving the building.'

(8) Tetjes theories sinithos anaptisode IA_i [PRO_i prospathondas na antimetopisis
such theories usually develop.NACT.PRS.3PL IA PRO trying na face.3SG
diaglosika zitimata].
cross-linguistic issues
'Such theories are usually developed while trying to tackle issues of cross-linguistic significance.'

Cinque (1988) observed that overt elements with a typically *quasi-universal* interpretation (e.g. *si* with unaccusatives in Italian) can also appear in episodic contexts but require the speaker to be included among the referents of such an element, (9). Interestingly, this same pattern is seen in Greek episodic passives, even though in our case the counterpart of *si* is the IA, (10), (cf. Michelioudakis 2021).

(9) a. Oggi, a Beirut, si nasce senza assistenza medica.
today in Beirut one/babies can be born without assistance medical
'Today, in Beirut, one/babies can be born with no medical assistance.'

b. # Oggi, a Beirut, si è nati senza assistenza medica.
today in Beirut we were born without assistance medical
'Today, in Beirut, we were born with no medical assistance.'

(10) Afti i theoria anaptichthike IA_i [PRO_i prospathondas na liso/
this the theory developed.NACT.PST.PRF.3SG IA PRO trying na solve.1SG
lisume/* lisi/* lisis/* lisun to provlima.]
solve.1PL solve.3SG solve.2SG solve.3PL the problem
'This theory was developed, as I/we/*she/*you/*they were trying to solve the problem'

The ungrammatical options in (10) further support the idea that the implicit controller cannot be referential and non-generic, i.e. pro_{Def}. This limitation can be attributed to the fact that pro_{Def} is exclusively allowed as a null subject in Greek, i.e. a grammar of a null subject language such as Greek cannot admit caseless pro_{Def}. Nonetheless, pro_{Def} as an implicit external argument is possible in nominalizations. As it freely alternates with a genitive clitic, it follows that it has Case and the nominal construction is such that pro_{Def} can get its Case licensed/valued, (11).

(11) I oloklirotiki IA_i/ tus_i katastrofi ton poleon [PRO_i pijenondas pros Ierusalim] itan
the total IA 3PL.ACC destruction the cities PRO heading to Jerusalem was
to meghalitero eglima ton stavroforon.
the biggest crime the crusaders
'The cities' total destruction while heading to Jerusalem was the biggest crime of the crusaders.'

On the other hand, pro_{Exi} clearly cannot control into a temporal gerund in the verbal passive, as shown in (12), adapted from Michelioudakis (2020).

(12) * I ithopios pirovolithike IA_i [PRO_i vjenondas apo to peripoliko].
the actress shoot.NACT.PST.PRF.3SG IA PRO getting.out from the patrol car
'The actress was shot, as someone$_{*i}$/he$_{*i}$ was getting out of the patrol car.'

Nevertheless, the ungrammaticality of (12) should not be taken as evidence for the absence of pro_{Exi} in Greek. Gerundival clauses with controlled subjects are in fact temporal adverbials and, as such, they must attach in the T-area. Possible implicit controllers, that is, pro_{Exi} and pro_{Gen} are externally merged lower, in Spec-vP. IAs specified as pro_{Gen} arguably raise to the T-area to check the phi-features they possess, and c-command PRO in gerunds from that higher position. When the external argument is pro_{Exi}, on the other hand, lacking any phi-features, it need not raise higher and is thus unable to c-command and control PRO. This is also reminiscent of Diesing's (1992) analysis of generic indefinites, which suggests that they move higher than the VP. In contrast, existential indefinites are not moved and thus remain in the domain of existential closure.

4. Binding

To detect the presence of an IA, binding serves as another useful diagnostic. We establish the following background assumptions regarding its appropriate application. Specifically, we assume that non-exempt anaphors are subject to both the standard Condition A (see Sportiche et al. 2013), (13a), and the Pronominal Agreement Condition, (13b).

(13) a. **Condition A:** An anaphor must be bound in its domain.

b. **The Pronominal Agreement Condition:** An anaphor agrees in phi-features with its antecedent.

Building on standard Condition A and the Pronominal Agreement Condition, the following predictions follow. In English, which allows the full array of implicit pronouns (pro_{Gen}, pro_{Exi}, pro_{Def}) in the passive, the prediction is that pro_{Gen} and pro_{Def} should be able to bind an anaphor. Conversely, in Greek, the use of pro_{Def} is prohibited in the verbal passive. As a consequence, an anaphor should only be licensed by pro_{Gen}. However, in the nominalizations of Greek, where pro_{Def} is permitted, as demonstrated in the preceding section, binding of an anaphor by this pronoun should be possible. Lastly, the Pronominal Agreement Condition predicts that binding of an anaphor by pro_{Exi} should be prevented in both languages due to its lack of phi-features. In what follows, we show that these predictions are borne out. In English, the fact that either pro_{Gen} or pro_{Def} can license a reflexive is demonstrated in the following examples, borrowed from Collins (to appear). In (14), the generic reflexive *oneself* is employed. As argued by Collins, the use of *keep X to self* ensures the use of a non-exempt reflexive, suggesting the presence of an IA, acting as an antecedent, that is, pro_{Gen}. In (15), a different reflexive is used in 3SG and 1PL. In particular, in (15a), the IA is a pro_{Def}, referring to Mike Tyson, as it is evident that the buyer implied in this context is Mike Tyson himself, making pro_{Def} the appropriate binder for the reflexive, *himself*.

(14) Some things are better kept IA_i to **oneself**$_i$.

(15) a. Mike Tyson$_i$ bought over 200 cars throughout his career, totaling at 4,5 million. Many were bought IA_i for **himself**$_i$ and others as gifts for his friends and family.

b. Most of this blog is self-deprecating humor aimed IA_i at **myself**$_i$ as much as others.

Turning to Greek, we use the reflexive *o eaftos mu*. Previous studies have shown that it is subject to the standard Condition A, just like the English reflexive. Yet, unlike English, *o eaftos mu* has very limited logophoric uses, in the sense that it cannot accept long-distance attitude holders as antecedents, eliminating the need for additional diagnostics for logophoricity (Angelopoulos & Sportiche 2023). In the Greek verbal passive, *o eaftos mu* can be licensed by pro_{Gen}, as shown in (16). In both examples, the IA is given a generic interpretation, which allows it to be understood as referring to *doctors such as you and me*. As expected, pro_{Gen} licenses the reflexive, which, as a result of its feature specification, is inflected as either 2SG, (16a) and (17), or as 1PL, as shown in (16b) and (17b). Regarding (17a) and (17b), it is essential that the reflexive does not need to be focused, particularly in the presence of the focused adjective. Therefore, there is no necessity to address any special binding considerations, if any, related to focused reflexives (*pace* Paparounas 2023).[1]

(16) **Context:** As doctors, we often find it easy to apply new therapies to our patients.

a. Otan aftes i therapies efarmozode IA_i s-**ton eafto su**$_i$, ine periploko.
when these the therapies apply.NACT.PRS.3PL IA to-the self yours is complicated
'When these therapies are applied to yourself, it is complicated.'

[1] Paparounas (2023: (270)) argues that if pro_{Gen} was syntactically present, coreference between this implicit argument and the pronoun *emas* 'us' should be ruled out as a Principle B violation, such as in the following example:

(1) Otan aftes i therapies IA_i efarmozode se emas$_i$, ine periploko.
when these the therapies apply.NACT.3PL to us is complicated
'When these treatments are applied to us, it's complicated.'

This example is indeed acceptable with coreference. Note, however, that 1stSG/PLpronouns like *emas* above or 2ndSG/PL ones do not give rise to Principle B violations, as shown in the active sentence below. Using 3rd SG/PL pronouns in both examples gives rise to robust Principle B violations (*pace* Paparounas 2023).

(2) Prepi na pro$_i$ frodizume prota emas$_i$ ce meta tus alus.
must na we take.case1PL first us and then the others
'We must take care of us first, and then the others.'

b. Otan aftes i therapies efarmozode IA$_i$ s-**ton eafto mas**$_i$, ine periploko.
when these the therapies apply.NACT.PRS.3PL IA to-the self ours is complicated
'When these therapies are applied to ourselves, it is complicated.'

(17) **Context:** We doctors sometimes apply proven methods and therapies and sometimes apply novel experimental ones.

a. Otan i KENURJES methodi efarmozode IA$_i$ s-**ton eafto su**$_i$, ine periploko.
when the new methods apply.NACT.PRS.3PL IA to-the self yours is complicated
'When the new methods are applied to yourself, it is complicated.'

b. Otan i KENURJES methodi efarmozode IA$_i$ s-**ton eafto mas**$_i$, ine periploko.
when the new methods apply.NACT.PRS.3PL IA to-the self yours is complicated
'When the new methods are applied to ourselves, it is complicated.'

In (18), it is shown that modifying the form of the verb, (18a), in order to convey an episodic interpretation, which is incompatible with pro$_{Gen}$, leads to ungrammaticality, as expected, because there is no antecedent that can license the anaphor. However, if the speaker is involved, as discussed in the previous section, pro$_{Gen}$ is allowed in an episodic context, thus enabling the licensing of the reflexive in the 1PL form, as demonstrated in (18b).

(18) a. * Otan i therapies efarmostikan IA$_i$ s-**ton eafto su**$_i$, itan periploko.
when the therapies apply.NACT.PST.PERF.3PL IA to-the self yours was complicated
'When the therapies were applied to yourself, it was complicated.'

b. Otan i therapies efarmostikan IA$_i$ s-**ton eafto mas**$_i$, itan periploko.
when the therapies apply.NACT.PST.PERF.3PL IA to-the self ours was complicated
'When the therapies were applied to ourselves, it was complicated.'

Furthermore, as predicted, the Greek verbal passive exhibits constraints on licensing reflexives in different forms, specifically in the 3SG form, due to the unavailability of pro$_{Def}$ and the lack of phi-features of pro$_{Exi}$. Let us consider the relevant contexts. In (19), assume the following context: Haris, a doctor, was always at ease applying new therapies to his/her patients. In this context, if pro$_{Def}$ were licit in the verbal passive, it should be able to refer to Haris, and, thus, be capable of licensing the reflexives in (19). However, the reflexive is not licensed in these examples demonstrating that pro$_{Def}$ is not permitted in the Greek verbal passive constructions at all. In (20), the context forces an existential interpretation of IA, that is, *someone*. In this case, a 3SG reflexive is not licensed, as demonstrated in this example. This result is in line with what we expected, given that pro$_{Exi}$ lacks phi-features.

(19) * Otan omos aftes i therapies efarmostikan IA s-**ton eafto tu**, tote
when though these the therapies apply.NACT.PST.PERF.3PL IA to-the self his then
tromakse.
got.scared.3SG
'However, when these therapies were applied to himself, then he got scared.'

(20) * I therapies efarmostikan IA$_i$ s-**ton eafto tu**. Pithanon tis efarmose o
the therapies apply.NACT.PST.PERF.3PL IA to-the self his likely them applied.3SG the
aderfos su.
brother yours
'The therapies were applied to himself. It is very likely that your brother applied them.'

An intriguing contrast emerges when examining nominals. In this case, the prediction is that a 1PL reflexive should be licensed since pro$_{Gen}$ is permitted, and similarly, a 3SG reflexive should also be licensed, as pro$_{Def}$ is allowed in this context. As it turns out, this prediction is confirmed, leading to the interesting contrast between (19), where the 3SG reflexive is disallowed in the verbal passive, and (21), where it is demonstrated to be possible in the nominalization, alongside a 1PL reflexive, which, however, is licensed by pro$_{Gen}$. Note that similar examples are also accepted in English.

(21) I sinehis proothisi IA$_i$ **tu eaftu tu**$_i$**/ tis**$_i$**/ mas**.
the constant promotion IA the self his/ her/ ours
'The constant promotion of himself/herself/ourselves.'

5. Secondary predicates

We now turn to the third diagnostic for the presence of syntactically represented IAs in passives. We follow the widely held assumption that secondary predicates need to be licensed by a local c-commanding DP (see Collins to appear and references therein). Building on this assumption, we consider the secondary predicate in (22) to be licensed by a c-commanding implicit external argument of the passive.

(22) a. At the commune, breakfast is usually eaten IA **nude**.
b. It really should be sung IA **drunk**, or not at all.

In what follows, we provide evidence supporting the syntactic representation of pro_{Exi} and pro_{Gen} in Greek, focusing on secondary predication involving adjectives. In Greek, adjectives inflect for number, gender, and case, as exemplified in (23). This sets them apart from adverbs, which lack phi-feature inflection and are commonly formed with the derivational suffix *–a*, as shown in the same example.

(23) eksipn -os/ -i/ -a
smart MASC.SG.NOM FEM.SG.NOM ADV
'smart'

Our working hypothesis is that inflected adjectives, when used as secondary predicates, necessitate licensing by a nearby c-commanding DP, with which they agree in relevant phi-features, namely, gender, number, and case. Consequently, we anticipate that in Greek, inflected adjectives will not be licensed as secondary predicates in verbal passives due to the absence of case in pro_{Exi} and pro_{Gen}.[2] Our prediction finds support in the following sentence:

(24) * To pehnidi pezotan/ pehtike IA **aproetimast- os/i**.
the game play.NACT.PRS.3PL play.NACT.PST.PERF.3PL IA unprepared NOM.MASC.SG/PL
'The game is played unprepared.'

The Greek inventory of adjectives includes a group of uninflected loanwords from French, such as *deforme* 'in bad shape,' *neglize* 'in one's nightdress.' Although these adjectives lack nominal inflection, it is evident that they function solely as adjectives and not as adverbs.[3] They share similarities with regular adjectives, as they can modify a noun, e.g. *i deforme pehtes* 'the deforme players.' On the other hand, they differ from clear instances of (event-participant oriented) adverbs like *harumena* 'happily,' which can modify unaccusative VPs, where the event participant modified by the adverb is (pragmatically) inferred through the possessive clitic *mu* 'mine,' (25a). Specifically, *deforme*, being an adjective, cannot modify an unaccusative verb, (25b), as it is limited to modifying [+animate] DPs. Additionally, certain PPs, e.g. *se kali diathesi* 'in a good mood', align with *deforme* in lacking an adverbial use, evidenced by their inability to modify a verb, (25b).[4]

[2] Our analysis is independent of morphological issues related to phi-features (*pace* Paparounas 2023).

[3] In the following example, Paparounas (2023: (262)) argues that the continuation *ala ...* 'but ...' does not lead to a contradiction. This observation suggests a potential adverbial use of *deforme*. However, the three native speakers in this study do perceive this example as contradictory unless it has the following interpretation, not noted by Paparounas: the players were generally in top form, but in that specific game, they were out of form. In line with our predictions, this interpretation can only arise under the use of *deforme* as a secondary predicate.

(1) I pehtes itan oli se top forma, ala par' ola afta to pehnidhi pehtike deforme.
the players were all in top form but despite all this the game play.NACT.PST.PERF.3SG in bad shape
'The players were all in top form, despite this the game was played in out-of-form way.'

[4] It is also crucial that the lack of grammaticality in (25b) cannot be attributed to *deforme* being exclusively agent-oriented. This is evident from its ability to modify theme arguments, as exemplified in (1).

(1) O proponitis proponise tus pehtes deforme.
the trainer train.PST.3SG the players in bad shape
'The trainers trained the players in bad shape.=the trainer or the players were in bad shape.'

(25) a. I mera mu perase **harumena/ evdiatheta**.
the day mine passed.PST.3SG happily in a good mood
'My day passed happily/in a good mood.'

b. * I mera mu perase **deforme/ se kali diathesi**.
the say mine passed.PST.3SG in bad shape in good mood
'My day passed in bad shape/in a good mood.'

As this type of adjective and PP does not require case concord with their licensors, our prediction is that they should be licensed in the Greek verbal passive either by pro_{Gen} or pro_{Exi}. As expected, this prediction holds true, as shown in (26).

(26) a. Afto to pehnidi dhen pezete/ pehtike **deforme**.
this the game not play.NACT.PRS.3SG play.NACT.PST.PERF.3SG in bad shape
'This game is/was not played in bad shape.'

b. O aghonas diorgahnonete/ diorghanothike **se kali diathesi**.
the game organize.NACT.PRS.3SG organize.NACT.PST.PERF.3SG in good mood
'This game is/was organized in a good mood.'

When considering nominals, we anticipate a similarity to verbal passives: both pro_{Exi} and pro_{Gen} should be unable to license a secondary predicate in this context due to their lack of case. As exemplified in (27a), this expectation proves to be accurate. Conversely, the prediction is that uninflected adjectives, such as *deforme*, which do not require case concord with the licensor, should be permitted in this case. This prediction holds true, as demonstrated in (27b).

(27) a. * I proti tu ektelesi tu penalti **aproetimastos**.
the first the shooting 3SG.GEN.M penalty unprepared.SG.MASC.NOM
'His first shooting of the penalty unprepared.'

b. I ektelesi tu penalti **deforme**.
the shooting the penalty unprepared
'The shooting of the penalty unprepared.'

(27a) presents a challenging aspect, since our conclusions from the preceding sections suggest that pro_{Def} is permitted in nominals and possesses case features, making it essential to address why the secondary predicate is not licensed by pro_{Def}. After all, pro_{Def} can provide all the necessary features, such as gender, number, and case, required by the secondary predicate. To tackle this question, we must first examine the case assignment of pro_{Def} in nominals. To start with, note that the overt counterpart of pro_{Def} takes on genitive case in nominals. This is evident by the fact that it can alternate with the genitive clitic, *tu* 'his,' which also realizes the external argument of the nominal, (28). Hence, it is reasonable to posit that pro_{Def} also receives genitive case when used as the external argument of the noun, aligning with the corresponding overt argument. With that said, we can look at the behavior of oblique arguments with respect to their ability to be modified by a secondary predicate. In contrast to nominative or accusative arguments, it is independently known that secondary predicates cannot be licensed by oblique arguments. For example, with verbs like *milise* 'talked,' which in Greek require a single genitive/dative argument, a secondary predicate cannot be associated with it, (29):

(28) I ektelesi tu tu penalti.
the execution.NOM his.3SG.MASC.GEN the penalti.GEN
'his shooting of the penalty.'

(29) Afti milise tu Jorghu (* jimnu).
she.NOM talked.PST.3SG the George.GEN naked.SG.MASC.GEN
'She talked to George naked.'

The ungrammaticality of (29) can be attributed to various reasons. In essence, we can hypothesize that it arises from a peculiarity of the genitive case, particularly its inability to be transmitted to an

agreeing predicate. Based on this assumption, the ungrammaticality of (27a) is unsurprising for several reasons. Firstly, the secondary predicate, *aproetimastos*, carries nominative case, while the IA, when realized by pro_{Def}, takes on genitive case. If we were to change the case of the secondary predicate to genitive, we would expect the outcome to be ungrammatical for the same reasons as in (29). Indeed, this prediction is borne out, as demonstrated below:

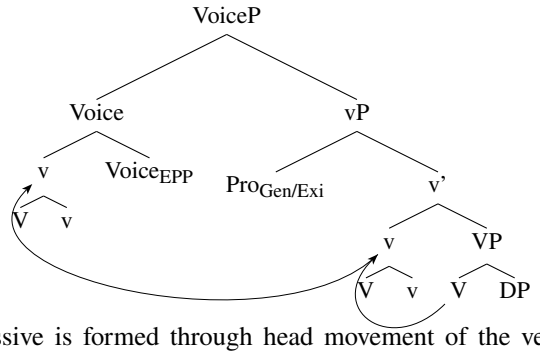
(30) * I ektelesi tu penalti **aproetimastu**.
the shooting the penalty unprepared.SG.MASC.GEN
'The shooting of the penalty unprepared.'

To summarize, while inflected adjectives cannot function as secondary predicates licensed by pro_{Exi} and pro_{Gen} of the verbal passive, this fact alone does not undermine the assumption that these pronouns are not syntactically projected. Instead, a more plausible explanation was shown to lie in a specific property of pro_{Exi} and pro_{Def}: their lack of case. This explanation was shown to shed light on another fact we established: the ability of a special class of adjectives in Greek which do not require phi- or case agreement to be licensed as secondary predicates by pro_{Exi} and pro_{Gen}. The behavior of these pronouns is mirrored in nominals, where, as shown, inflected adjectives cannot be licensed as secondary predicates but non-inflected ones can. In nominals, a challenge was shown to arise with pro_{Def}, as despite possessing genitive case and phi-features, it cannot license a secondary predicate, as genitive case lacks the ability to be transmitted to a secondary predicate, thereby resolving the challenge.

6. Discussion

In this section, we explore the presence of syntactically projected IAs and why pro_{Def} in particular is blocked in verbal passives. To start with, the assumption that pro_{Def} bears uCase in Greek and pro_{Gen}, pro_{Exi} do not, explains why there is no pro_{Def} in the passive. Basically, pro_{Def} would compete with the internal argument for Case checking by T. Only one can get Case checked by T. So pro_{Def} is not possible in the Greek passive. A different analysis is provided in what follows. In particular, we note that unlike in English, where the external argument's intervention is bypassed through smuggling of the internal argument into a higher position (Collins 2005), the internal argument in the Greek passive is Agreed with by T in its original in-situ position. In English, smuggling is triggered by an EPP feature on the Voice-head, resulting in movement of the closest possible phrase that can be moved, that is, PartP, not shown here. The internal DP is Agreed with by T, and is attracted to Spec,TP from inside the PartP. On the other hand, in Greek, smuggling does not take place because the EPP is satisfied through head movement of the verb (cf. Alexiadou & Anagnostopoulou 1998), (31), which gives rise to non-active Voice inflection. In this tree derivation, it is also shown that the internal argument stays in-situ.

(31)



We assume that the Greek passive is formed through head movement of the verb, as shown above, resulting in non-active morphology on the finite verb, while the English passive, which is formed through smuggling uses an auxiliary and participle. Additionally, the assumption derived from (31) is that T agrees with the internal argument in its in-situ position. This finds support in (32) where the internal argument appears after the verb and a manner adverb, which is commonly considered to mark the vP-boundary.

(32) Do-thike ghrighora to vivlio s-tin Maria.
give.NACT.PST.PERF.3SG fast the book.NOM to-the Maria
'The book was given to Mary fast.'

Taking this into consideration, let us examine the question of why pro_{Def} is prohibited in the Greek verbal passive. We posit that pro_{Def} is ruled out in the Greek verbal passive because it carries case and a full set of phi-features, making it an active goal for Agree with T. Consequently, if pro_{Def} occupied Spec,vP, it would be the closest goal for the probe in T, which would prevent Agree with the internal argument and valuation of its uCase feature. On the other hand, pro_{Exi}, lacking phi-features and case, is not a potential goal for T. Consequently, the internal argument can Agree with T and, as a result, value its case. Turning to pro_{Gen}, it lacks case like pro_{Exi} therefore, T can value the uCase feature of the internal argument. Alternatively, we can assume, following the discussion in Section 2, that although it possesses some phi-features, it lacks full specification for person features, thus rendering it incapable of checking [uPerson]. Under the assumptions of a featural version of Relativized Minimality (Rizzi 2001), and with T as a phi-probe, pro_{Gen} only carries a subset of the features of T. As a consequence, it does not act as an intervener for the Agree relation between T and the internal argument, enabling the latter to receive case (cf. Michelioudakis 2021). Featural Relativized Minimality predicts no intervention effects for passive nominals when the theme is a genitive DP, regardless of the external argument's realization (clitic or implicit). This is because the features of all types of pro, including pro_{Def}, are always a subset of the probe licensing the genitive DP (see Michelioudakis 2020).

7. Conclusion

In this paper, we investigated the behavior of implicit arguments with respect to diagnostics such as control, binding, and secondary predication, in the Greek verbal passive and nominals, comparing them to their English counterparts. Some diagnostics might at first sight suggest that the implicit argument is not projected in the Greek verbal passive, but we provide evidence to the contrary. We identified three pronoun types, namely, pro_{Def}, pro_{Gen}, and pro_{Exi}, which enter the derivation in Spec,vP across the board and occupy different positions during the derivation. In the Greek verbal passive, only pro_{Gen} and pro_{Exi} are allowed, while pro_{Def} is blocked. We proposed that pro_{Def} is blocked in the Greek verbal passive as its presence would obstruct case licensing of the internal argument. Our paper can be taken as being part of a larger generalization (*contra* Bruening 2013 i.a.) according to which implicit arguments are syntactically projected (see Collins to appear for discussion of principles from which this can be derived).

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