Licensing of subjects in Greek Gerunds

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1   Introduction

One of the most common names for a non-finite verb form, along with infinitive, is 'gerund', the latter being though a distinct category in many languages. Therefore, such a term can have no universal definition. The properties of the Greek gerund are different from the properties of the English, Latin, Italian, French and Old Neapolitan gerunds as the short typological study shows. In Table 1 it is shown that what comes under the cover term 'gerund' is a different set of distributional properties conveyed in each language. We therefore need to determine its properties in independence from the name that traditional grammarians give to it.

	Greek	Classical Greek	English	Latin	French	Italian	Old Neapolitan
Subject-verb agreement	✗	✗	✗	✗	✗	✗	✔
L-related position	✗	✗	✔	✔	✗	✗	✗
Adjunct position	✔	✗	✔	✗	✔	✔	✔
Nominalization	✗	✗	✔	✔	✗	✗	✗
Separate nominative subject	✔	✗	✔	✗	✔	✔	✔
Introduced by a connective	✗	✗	✔	✔	✔	✗	(✔)

Table 1: The distribution of gerunds

More concretely, Table 1 identifies two sets of properties, one of which is typically nominal (occurring in an L-related position, having the morphology of a nominalization, and being introduced by a prepositional connective), and the other of which is typically clausal (showing subject-verb agreement, having an overt nominative subject, occurring in adjunct position, introduced by a conjunction or a complementiser). The term 'gerund' in Latin and English grammar refers to something that is essentially nominal, whereas the term *gerundio* in Italian (and hence in reference to Neapolitan) refers to something that is essentially verbal and hence defines the nucleus of a separate clause. With this distinction in mind, the Greek item is clearly in the verbal/clausal class. Interestingly, in Classical Greek there is no category such as 'gerund'.

In Modern Greek, the gerund bears no morphological marking for subject-agreement whereas the rest of its morphological make-up is consists of an imperfective stem and the affix '-ondas' (1); it cannot appear in L-related positions as in (2); it does not allow nominalisation as in (3); it can surface with a separate post-verbal nominative subject, which is distinct from that of the governing verb (4):

(1)   *Pigenondasis me to treno, apofigame tin kikloforia.
      go-GERUND2PS with the train avoid-PAST1PL the traffic
      'By taking the train we avoided the traffic.'

(2)   *Thelo trogondas fraules.
      want-PRES1PS eat-gerund strawberries
      '*I want eating strawberries.'

(3)   *To katharizondas to spiti simera den xriazete na to kanume avrio.
      the clean-GERUND the house today, not need-PRES3PSPASS na it do-PRES1PL
      'By cleaning the house today we don't have to do it tomorrow.'

(4)   Telionondas o Thodoris to fajito tu, irthe i Maria.
      finish-GERUND the Thodoris the food his, come-PAST3PS the Maria
      'When Thodoris finished his food, Maria came.'

Notice however, that the category gerund is controversial even within the system of Greek. Let us examine the following example taken from Mackridge (1985: 119):

(5)   Episkeptomeni tin Athina, tha dite ton Parthenona.
      Visit-pass-pres-participle the Athens-acc see-fut3pl the Parthenon-acc
      'By visiting Athens, you will see the Parthenon.'

What is striking in this example is that the function of gerund is undertaken by a passive present participle, namely by *episkeptomeni* 'visiting'. Crucially, this participle does not permit nominalisation like the gerund and unlike other passive present participles, and allows for a temporal interpretation. This example illustrates the need for generative grammar to dispense with the traditional term of 'gerund'.

In this paper we focus on the Greek gerund –using the term only as heuristic– bearing in mind that it might be a different grammatical category from other 'gerund' categories. Some of the questions we are going to address in this paper are: a) what is the categorial status of gerunds in Greek; b) how the subject of the Greek gerund is licensed; c) what the behaviour of the Greek gerund reveals about 'finiteness'.

2   The distribution of the Subjects of Gerunds

In this section we examine the distribution of the subjects in the gerundival clauses. In (6) *tragudondas* 'singing' is a gerund that denotes 'manner':

(6)   O Yianis irthe tragudondas.
      the Yianis come-PAST3PS sing-GERUND
      'John came singing.'

However, there are other types of gerunds such as 'temporal' gerunds. Our claim is that the character of this distinction is not only semantic. Its nature is determined by the categorial status of these gerunds. More precisely, 'temporal' gerunds are different from 'manner' gerunds as far as the distribution and the licensing of their subject as shown in examples (6) and (7). In (6), the subject of the gerund allows co-reference with the subject of the matrix clause and in this situation it

can license an empty subject. In (7), the subject of the temporal gerund is distinct from that of the matrix and the gerund licenses a nominative Case-marked subject:

(7)   Fevgondas apo to spiti i Maria, tin sinadise o Kostas.
      leave-GERUND from the house the Maria-NOM her-acc meet-PAST3PS the
      Kostas-NOM
      'While Mary was leaving the house, Kostas met her.'

The fact that 'manner' and 'temporal' gerunds behave differently with regards to the possibility of licensing a distinct subject is evidence that 'temporal' gerunds are at least TPs, if not CPs. Only if we accept the status of temporal gerunds as CPs can we find structural space for the position of the subject.

However, for the purpose of this paper we focus on the disjoint reference distribution since it sheds light on the licensing mechanism of the disjoint subject of the temporal gerunds. We will not analyse the empty subjects of the manner gerunds (cf. Pires (2001) for the empty subjects of gerunds). Firstly, the subject of the gerund can be different from that of the matrix verb as shown in (7) and in that case it licenses nominative Case on the subject. More concretely, we observe that the following restriction applies to the subjects of the gerund in example (7): *Maria* is at the same time the subject of the gerund and the object of the matrix transitive verb *sinadise* 'met'. Let us now compare it with (8) where *Maria* cannot be coindexed with the object of the verb; this is trivially true because the object of the verb is a full DP with a different reference. If the object of the verb is a pronoun then coindexing is perfectly possible as (7) shows.

(8)   *Fevgondas apo to spiti i Maria, o Kostas sinadise ton Petro.
      leave-GERUND from the house the Maria-NOM the Kostas-NOM meet-PAST3PS the
      Petros-ACC
      'While Mary was leaving the house, Kostas met Paul.'

Let us now consider example (9) where matrix verb *irthe* 'came' is an intransitive/unaccusative verb:

(9)   Telionondas o Thodoris to fajito tu, irthe i Maria.
      finish-GERUND the Thodoris the food his, come-PAST3PS the Maria
      'When finishing his food Thodoris, Maria came.'

Example (10) is a case of disjoint reference where the matrix verb is unergative:

(10)   Telionondas o Thodoris to fajito tu, xorepse i Maria.
      finish-GERUND the Thodoris the food his, dance-PAST3PS the Maria
      'When finishing his food Thodoris, Maria danced.'

So far we have seen that the only position available for the subject in disjoint reference is the post-verbal position and that all types of predicates (transitives, intransitives/unaccusatives, unergatives) permit disjoint reference. The preverbal subject position is marginally possible when the subject is topicalised as shown in (11). The example (11), which is from Rivero (1994), is grammatical only if the subject has topic prominence:

(11) To pedi exondas diavasi ta vivlia ola, efige i Maria.
the child- NOM have-GERUND read-partic the books-acc all leave- PAST3PS the Maria-NOM
'The child having read all the books Maria left.'

In conclusion, the post-verbal position is the only position available for subject disjoint reference (cf. Table 2) and in this paper this is what we set out to investigate.

Relation with the matrix	Position of the Gerund Subject
Disjoint-reference	Post-verbal
Disjoint-reference	(Preverbal)
Co-reference	Preverbal

Table 2: The distribution of the subjects of gerunds

3   Our Analysis

3.1   The CP status of gerunds - Evidence from Adverbials

In this section we discuss the categorial status of gerunds using tests with adverbs. In the literature, Philippaki-Warburton & Spyropoulos (1999) claim that the clauses containing gerunds are CPs, whereas Tsimpli (2000) claims that they are the result of left-adjunction to the matrix TP. Crucially, for Tsimpli the gerund is not a CP which is left-adjoined to a TP. For her, the categorial status of the clause, which immediately contains the gerund, is an adjunct and the position at which that clause attaches to is the TP of the matrix. On the other hand, Rivero (1994) develops an analysis where the gerund is V-raised to the Head of Mood Phrase in order to be adjoined to the base-generated affix '-ondas'. In a similar vein, Roussou (2000) establishes that the gerund moves to the CP domain and more specifically to the Modal head within a split CP domain according to Rizzi (1997):

(12)   [$_{COP}$ [Neg [$_{CM}$ –*ondas* [$_I$ clitic…]]]]

The first piece of evidence in support of the above analysis comes from the syntactic position of Negation. It is remarkable that 'manner' and 'temporal' gerunds are different with regard to their ability to host Negation. Compare the following examples:

(13)   *O Janis irthe mi tragudondas.
the John-NOM come-PAST3PS not sing-GERUND
'John came without singing.'

(14)   Mi legondas tin alithia o Kostas, i Maria pligothike.
not tell- GERUND the truth the Kostas-NOM, the Maria-NOM hurt-PASTPASS3PS
'By not telling Kostas the truth, Maria got hurt.'

In the above examples it is shown that the 'manner' gerund compared to the 'temporal gerund' cannot host Negation. Examples (13) and (14) defend the categorial status of gerunds as CPs.

The second piece of evidence comes from the distribution and the position of adverbs in relation to the Functional head position that hosts the gerund. According to (Cinque, 1999), adverbial positions correspond to the Specifier positions of Functional Projections. By applying tests with adverbials we provide further arguments that gerunds occupy a position within the CP along the lines of Roussou (2000).

In example (15) and (17) we observe the higher mood adverbials *dithen* 'allegedly' to be either followed or preceded by the gerund as in (16) whereas in the case of the mood adverbial *pithanon* 'probably' the gerund can only follow the adverb, as shown in (17):

(15)   **Dithen** milondas ston diplano tu, krifakuge tis kuvendes ton piso.
allegedly speak-GERUND to the next his eardrop- PAST3PS the words the-GEN behind
'By pretending he was speaking to the person sitting next to him, he eardrop the people behind.'

(16)   Milondas **dithen** ston diplano tu, krifakuge tis kuvendes ton piso.
speak-GERUND allegedly to the next his eardrop-PAST3PS the words the-GEN behind
'By pretending he was speaking to the person sitting next to him, he eardrop the people behind.'

(17)   **Pithanon** klinondas grigora tin porta, ksexases ta klidia su.
probably close-GERUND quickly the door-ACC forget- PAST2PS your keys-ACC
'Probably by closing quickly the door you forgot your keys.'

What is interesting by those results is that in the highest majority of cases the gerund moves high in the enlarged CP structure. It almost competes in the hierarchy for the same structural position with higher clausal adverbials. In (16) *dithen* 'allegedly' is a 'higher' sentential adverb; it occupies the Spec of Mood$_{evidential}$. The gerund can either follow it as in (15) or precede it as in (16). It must be therefore situated either before or after this Mood head. In (17) the gerund follows the adverb, *pithanon* 'probably' which is in Spec of Mood$_{epistemic}$. We gather that the gerund must move at least as high as Mood$_{evidential}$, if not higher.

Let us also examine the following asymmetry with a 'lower' adverbial:

(18)   **Sinithos** pernondas odigies o Yianis, ekteli tin apostoli.
usually take-GERUND instructions-ACC the Yianis-NOM execute-PRES3PS the mission-ACC
'Usually by taking orders John executes the mission.'

(19)   Pernondas **sinithos** odigies o Yianis, ekteli tin apostoli.
take-GERUND usually instructions-ACC the Yianis-NOM execute-PRES3PS the mission-ACC
'By taking orders usually John executes the mission.'

(20)   *pro*$_i$ ftanondas **panda** kathisterimena, o Yanis$_{*i}$ enoxlithike.
arrive-GERUND always late the Yianis-NOM annoy-PASS-PAST3PS
'By always arriving late John was annoyed.'

(21) ***Panda** ftanondas kathisterimena, o Yanis enoxlithike.
always arrive-GERUND late the Yianis-NOM annoy-PASS-PAST3PS
'By arriving always late John was annoyed.'

In example (18) and (19) the gerund can either follow or precede the adverb. Interestingly, as the ungrammaticality of example (21) indicates, the verb must always move higher than the head of Asp$_{perfect}$.

The same Gerund-Adverb pattern emerges with Internal Aspect or Manner adverbs (*endelos* 'completely', *kala* 'well'), which are the lowest in the hierarchy. The only example where we can find the reverse word order, namely Adverb-Gerund, is when the adverbial is markedly focused. In this case, they precede the gerund as shown in (23):

(22) Meletondas **kala** oles tis ekdoxes, o Petros milise me siguria.
study-GERUND well all the versions-acc the Petros talk- PAST3PS with confidence
'By studying well all the versions, Peter talked with confidence.'

(23) **Kala** meletondas oles tis ekdoxes, o Petros milise me siguria.
well study-GERUND all the versions-acc the Petros talk- PAST3PS with confidence
'By well studying all the versions, Peter talked with confidence.'

In Table 3, there is a summary of the positions that a gerund can occupy with regard to adverbs.

Functional Projections		Spec	Gerund in the left	Gerund in the right
MOOD	*Speaker Oriented*	*dithen-* allegedly	✔	✔
	Epistemic	*pithanon-* probably	✘	✔
TENSE	*Realis*	*mia fora-* once	✔	✘
ASPECT	*External Aspect*	*sinithos-*usually	✔	✔
	Imperfective	*panda-*always	✔	✘
	Internal Aspect	*kala-*well	✔	(✔)

Table 3: Relative positions of the gerunds with regard to adverbs

3.2 The Licensing Head of the Nominative

According to Chomsky (1998), the T^0 of gerunds has a [-interpretable] EPP feature, which can attract a DP in its Spec in order to delete this uninterpretable feature. Crucially, this defective φ-set of T^0 cannot check the nominative Case on the DP. The obvious question is then how the subject has its nominative Case licensed in Greek gerunds.

Let us now see how we can deal with this problem under the analysis by Alexiadou and Anagnostopoulou (1998). In languages like Fiorentino and Trentino there are two agreement patterns, the full referential agreement in *pro*-drop structures, preverbal-subject constructions and third person singular-default agreement in postverbal subject constructions. In the former case, the presence of full agreement licenses the nominative Case by moving the subject in Spec IP whereas in the latter case the default agreement can only license the nominative Case of the subject in the VP-internal position.

In Greek, Alexiadou and Anagnostopoulou observe that there is only full referential Agreement regardless of whether a full NP is present or not in preverbal or postverbal position. For them, in VSO word order the subject remains in VP-internal position. The verb moves to I^0 to satisfy the EPP and enters in a configuration where it checks the formal features of the subject by means of a chain since the verbal agreement morphology carries the requisite nominal feature of AGR. In SVO word order, in non-topicalised constructions, such as passives, raising and unaccusatives, the subject moves out of the VP, in the spec-TP in order to check its nominative Case.

Returning now to the discussion about the licensing of subjects in gerunds, according to Alexiadou and Anagnostopoulou (1998) there are two options for the subject: either to stay VP-internally or move to the Spec-TP. We claim along with Alexiadou and Anagnostopoulou that in order for the subject to move to Spec-TP, the verb needs to have agreement. Crucially, the gerund does not have any; it follows that it cannot license its nominative Case in Spec-TP.

Let us consider example (24):

(24) Pernondas **xthes** o Kostas ton dromo, ton xtipise ena aftokinito.
cross-GERUND yesterday the Kostas the road, him hit-PAST3PS a car
'When Kostas was crossing the road yesterday, a car hit him.'

The claim we make is that the subject of the gerund, *Kostas*, stays VP-internally. However, the gerund moves to T^0 despite the fact that it bears no morphological indication of Tense. Defective gerunds, despite the fact they lack morphological tense, they nevertheless project a TP specified syntactically for [-Tense], as argued by Stowell (1982) in his analysis for infinitives. We adopt Varlokosta's (1994) distinction between Morphological and Semantic Tense and we claim that the gerunds have semantic but not morphological Tense. The existence of semantic Tense is further supported from the presence of a temporal adverb as shown in (24). This semantic Tense, although defective is capable of licensing the nominative Case in the subject of the gerund. Crucially, the licensing of nominative Case on the subject is achieved via *Agree* (Chomsky 1998), which does not induce movement of the subject out of the VP to the spec-TP.

Further movement of the gerund to the head of C$_M$ along the lines of Roussou (2000) is possible but not crucial for our analysis since the desired word order, VS, has already been achieved by movement of the gerund to T^0. Roussou (2000) derives evidence from negated gerunds claiming that gerunds must be in a position lower than Neg; since NegP is situated between C$_{Op}$ and C$_M$, the gerund cannot have moved to C$_{Op}$, otherwise blocking effects would have arisen as with imperatives. On the other hand, the gerund precedes clitics, exactly like the imperative does. Therefore, she claims, the gerund must have moved to a position higher than I^0, the head that hosts the clitic. Roussou (2000) concludes that the only possible candidate in this case is C$_M$. The merging positions of the verb and the subject as well as their respective movements are represented in (25):

(25)
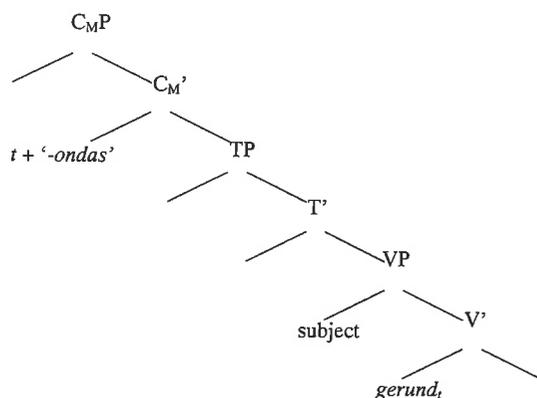
Our analysis, as articulated above, for the licensing of the subject of the gerund contradicts a previous account on the Greek gerund by Tsimpli (2000). According to her, nominative Case is licensed on the subject of the Greek gerund through a dissociation of nominative Case from the EPP position. According to Chomsky's (1995) Full Interpretation, she claims that the checking of the EPP feature requires a spec-TP position bearing subject-agreement features. When the subject is post-verbal it merges in spec-VP and it is co-indexed with a *pro* in spec-TP. When the subject is preverbal it can either be moved or merged. When merged it carries a topic feature checked in Spec-TP. When moved, it is driven by the *phi*-feature of Tense.

Our account is different from Tsimpli's (2000) in that, gerunds although underspecified for tense information, they do not lack a Tense projection since they can have Semantic Tense. Another problem with Tsimpli's account has to do with preserving the c-command relations. If, as she claims, gerunds are in the Specifier of the higher Tense Head of the matrix, then this Spec must have an internal structure in order to accommodate the subject and all other elements. In our view, we can dispense with this mechanism both on the grounds of not preserving the c-command as well as on independent grounds (cf. gerunds are C_M in Roussou's (2000) sense).

The above analysis of gerundival postverbal subjects confirms the well-known view that lack of agreement morphology cannot license preverbal subjects. At the same time, it supports the idea that Agreement and nominative Case are dissociated and that the latter is the structural Case assigned to the subject rather than the instantiation of the agreement relation between the subject and the verb.

4   The Greek Gerund: Finite or non-finite?

The standard account (e.g. Rizzi 1997) of finite versus non-finite assumes that: (a) finite forms show mood, tense and agreement distinctions and allow for a nominative subject; (b) non-finite forms show no mood, tense or agreement distinctions and do not allow for a nominative subject.

If we interpret the above definition in a morphological way, which is applied at the level of the verb, then gerunds are non-finite since they show no mood, tense or agreement morphemes (the '-ondas' morpheme is not clear to us what it expresses). If,

however, we interpret the definition in a syntactic way and take finiteness to be a correlate of mood, tense and agreement features, and a property of the IP, then gerunds can partially be claimed to be finite since the have some mood features (Roussou 2000) and trigger V-to-C movement. If however, finiteness applies at the CP layer and licenses independent sentencehood (cf. Anderson in Vincent (1998)), then again Greek gerunds are non-finite. Overall, our own study points towards a gradient view of finiteness (Vincent 1998).

5   Conclusion

In this paper we argued for the TP status of temporal gerunds. Moreover, we pursued an analysis whereby nominative Case is licensed on the subject of the gerund while the latter stays VP-internally. Deletion of nominative Case is achieved via the operation *Agree* with the gerund, which has moved to T^0.

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