Chapter 34. Information structure in Modern Greek

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Abstract

This chapter deals with the prosodic and syntactic reflexes of information structure in Modern Greek. The relevant properties of this language are: (a) word order flexibility reflecting the information structural domains; (b) flexibility in the placement of the nuclear stress depending on the focus domain; and (c) clitic doubling of DP arguments that have topic or background status. This chapter outlines these classes of phenomena as well as their interaction for the expression of information structural notions.

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34.1 Preliminaries[1]

The aim of the present chapter is to outline the available knowledge about the reflexes of information structure on Modern Greek syntax and phonology and to attempt a synthesis of the ways in which the syntactic and prosodic levels interact. The goal of this synthesis is to evaluate the observed correlations between discourse-related concepts such as topic and focus and properties of expressions such as word order and prosodic events. The background question is whether the generalizations obtained from the individual levels can be deduced from principles of greater generality if we take into account their mutual dependencies in a stratified view of linguistic structure.

Information structure is reflected in several layers of Modern Greek grammar. Word order is influenced by context; in particular, the left periphery of the clause displays syntactic configurations that correlate with topic and focus. At the level of prosodic phonology, the placement and the shape of the nuclear accent are determined by the focus domain: studies on Modern Greek phonology make a distinction between contrastive and non-contrastive nuclear accent. A particular property of Modern Greek is that non-nominative arguments are copied by a co-referent pronoun under conditions that generally relate to topicalization.

The present outline restricts its scope to the basic syntactic and prosodic phenomena at the clause level. There are a number of further issues in Modern Greek grammar that involve the role of information structure but are beyond the scope of this chapter: for instance, the use of multiple definite determiners in determiner phrases, which is relevant for the question of whether there is a DP-internal focus projection (Kolliakou 2004; Lekakou and Szendrői

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2012); the occurrence of discontinuous determiner phrases triggered by conflicting informational structural features on the DP subconstituents (Mathieu and Sitaridou 2005); or the contextual properties of pseudocleft constructions (Iatridou and Varlokosta 1998). Modern Greek also has a set of focus-sensitive particles (i.e. the exclusive particle *móno* 'only', the additive particle *ke* 'and/also', and the scalar particle *akóma ke* 'even'); a particular property of these items in Greek is their sensitivity to polarity (see Giannakidou 2007 about 'even' and Giannakidou 2006 about 'only').

The variety of Modern Greek examined in this chapter is the variety that adopted the status of standard in school education and official communication, which historically originates in the Southern Modern Greek varieties of mainland Greece. Some phenomena in this variety cannot be generalized across dialects, since it is known that some dialects differ in crucial respects from Standard Modern Greek. For instance, the use of pronominal clitics has different properties in the Eastern dialects (see Revithiadou 2006 on Cypriot Greek and Asia Minor dialects; see Sitaridou and Kaltsa 2014 on Pontic Greek), tonal phenomena in Cypriot Greek show crucial differences from Athenian Modern Greek (Arvaniti 1998; Themistocleous 2011), and Pontic Greek displays a focus particle and a particle accompanying contrastive topics (Sitaridou and Kaltsa 2014).

Structural facts indicate that the basic word order in Standard Modern Greek is VSO (Philippaki-Warburton 1982). The VS order in (1a) is preferred in neutral contexts, while the SV in (1b) requires a contextual trigger: the subject should be either a topic or a focus (see evidence from acceptability judgments in Spyropoulos and Revithiadou 2009).

(1)[2]   a.   VS

írθe   o   jánis.

come:PST.PFV:3   DEF:NOM.M   J.:NOM.M

'Janis came.'

   b.   SV

o   jánis   írθe.

DEF:NOM.M   J.:NOM.M   come:PST.PFV:3

'Janis came.'

Clauses with transitive verbs show different properties. The SVO order illustrated in (2) is the most frequent order in corpora (Lascaratou 1989). Since the most frequent information structural configuration in texts is a topic-comment articulation (Du Bois 1987; Lambrecht 2000), the frequency of SVO in corpora trivially reflects the discourse preference for subjects to be topics (and is not evidence for basic word order). Furthermore, the SVO order is judged to be felicitous in any context and obtains higher felicity judgments than the VSO order in all-new contexts (Keller and Alexopoulou 2001). The fact that subject-initial clauses are preferred with transitives and not with intransitives implies that there is a fronting operation that leads subjects of transitive verbs to appear in the preverbal domain. The modelling of this syntactic operation depends on further assumptions (see Alexiadou and Anagnostopoulou 2001; Spyropoulos and Revithiadou 2009 for syntactic proposals); the relevant issue is that

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[2] Abbreviations (glosses): ACC accusative; PFV perfective; PST past; DEF definite; F   feminine; GEN genitive; INDF indefinite; M   masculine; N   neuter; NEG negation; NOM nominative; PL plural. For the sake of simplicity, unmarked inflectional categories (singular, active, indicative, present) are not given in the glosses.

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fronting the subject of a transitive verb is a semantically vacuous operation, i.e. it takes place without a contextual trigger.

(2)   SVO

o   jánis   sinádise   ti   maría.

DEF:NOM.M   J.:NOM.M   meet:PST.PFV:3 DEF:NOM.F M.:NOM.F

'Janis met Maria.'

    There are two left-peripheral configurations in Modern Greek that are relevant for the study of information structure: fronting and clitic left dislocation. The crucial difference between these two constructions is the presence of a clitic pronoun, which is co-referent with the preverbal constituent, as illustrated in (3a-b). This clitic is always adjacent to the verb and forms a phonological word with it (Arvaniti 1992; Drachman and Malikouti-Drachman 1999; Revithiadou 1999). It appears with non-nominative DPs dominated by the extended projection of the verb, i.e. direct and indirect objects, as well as experiencer genitives. The construction in (3a) involves a left dislocation of the object constituent (termed the 'double') and a co-referent clitic and is called 'Clitic Left Dislocation' (henceforth, CLLD; see Lopez, this volume). The resumptive clitic appears in languages that do not allow for definite-object drop (Tsakali 2008: 196), which supports the view that the double in these constructions is left dislocated. CLLD is felicitous if the double is a topic. CLLD is generally not felicitous if the preverbal argument is a focus (see discussion and limitations in Section 34.4). The felicitous answer to this question involves a fronted constituent that is not copied by a co-referent clitic; see (3b). The construction in (3b) involves a fronted constituent (an object in situ would be expected to appear at the end of the clause in a VSO language). This construction is used for foci and *wh-* constituents.

(3) a. Clitic left-dislocated topic

'Who met Maria?'

ti	maría$_i$	tin$_i$	sinádise	o	JÁNIS.
DEF:ACC.F	M.:ACC.F	3:ACC.F	meet:PST.PFV:3	DEF:NOM.M	J.:NOM.M

'Janis met Maria.'

b. Fronted focus

'Who did Janis meet?'

ti	MARÍA	sinádise	o	jánis.
DEF:NOM.F	M.:NOM.F	meet:PST.PFV:3	DEF:NOM.M	J.:NOM.M

'Janis met MARIA.'

Left-dislocation can be recursively used as in (4a), while the fronted focus is necessarily unique. If left-dislocated and fronted constituents appear in the same clause, then the left-dislocated constituent must precede the fronted one; see (4b-c).

(4) a.

tis	marías$_i$	to	vivlío$_j$	tis$_i$	to$_j$
DEF:GEN.F	M.:GEN.F	DEF:ACC.N	book:ACC.N	3:GEN.F	3:ACC.N

ÉÐOSA.

give:PST.PFV:1

'I gave the book to Maria.'

b.

to	vivlío$_j$	tis	MARÍAS	to$_j$
DEF:ACC.N	book:ACC.N	DEF:GEN.F	M.:GEN.F	3:ACC.N

éðosa,	óxi	tu	Jáni.
give:PST.PFV:1	no	DEF:GEN.F	J.:GEN.F

(intended) 'I gave the book to MARIA – not to Janis.'

c.

*tis	MARÍAS	to	vivlío$_j$	to$_j$

DEF:GEN.F   M.:GEN.F   DEF:ACC.N   book:ACC.N   3:ACC.N

éðosa   óxi   tu   Jáni.

give:PST.PFV:1   no   DEF:GEN.F   J.:GEN.F

(intended) 'I gave the book to MARIA – not to Janis..'

The clitic may also occur with postverbal arguments; see (5). This construction is known as 'clitic doubling' in Greek linguistics (the distinction between 'clitic doubling' and 'clitic left dislocation' reflects the assumption that only preverbal doubles necessarily involve a dislocation out of the clausal domain; Iatridou 1995, Anagnostopoulou 1994 following Cinque 1990 on Italian; see Anagnostopoulou 2006 for a summary of structural accounts). Clitic doubling is felicitous if the double is part of the background information and non-felicitous if the double is part of the focus; see (5a-b). An SVO utterance without clitic, as in (2), is possible in any context, i.e. a clitic is not obligatory in the context presented in (5a).

(5)   a.   Background double

Who met Maria?

o   JÁNIS ti_i sinádise   ti $maría_i$.

DEF:NOM.M J.:NOM.M 3:ACC.F   meet:PST.PFV:3 DEF:ACC.F   M.:ACC.F

'JANIS met Maria.'

      b.   Focused double

Who did Janis meet?

#o   janis ti_i sinádise   tin $MARÍA_i$.

DEF:NOM.M J.:NOM.M 3:ACC.F   meet:PST.PFV:3 DEF:ACC.F   M.:ACC.F

'Janis met MARIA.'

The apparent generalization of this data is given in (6) and this view is reflected in several accounts on Greek information structure. The relation between clitics and information structure is not 1:1 (as indicated by the correlation symbol). However, these correlations are a relevant starting point for understanding the role of left peripheral configurations in discourse.

(6) a. focused XP   ~ no clitic

     b. non-focused XP ~ clitic (obligatory for preverbal, optional for postverbal XPs)

The generalization in (6) is challenged by two classes of phenomena. First, in some instances of CLLD the left-dislocated constituent is not background information (Haidou 2012: 116). For instance, *wh-* questions have generally the same form as focused XPs; see (7a). However, there is a class of questions in which the *wh-* pronoun is accompanied by a co-referent clitic; see (7b). This type of question may occur in particular contexts, e.g. quiz questions, rhetorical questions, etc. (see examples with focused objects and further discussion in Section 0). The sentence in (7b) reflects the results of acceptability studies on Greek word order showing that focused objects in CLLD receive high acceptability ratings (Keller and Alexopoulou 2001), which does not conform to the idea that CLLD is a topic-comment construction, as stated in (6). These findings indicate that there is a class of contexts in which it is possible to use a clitic co-referent with a focused left-dislocated XP. This possibility is theoretically relevant in view of the generalization that left-dislocated constituents cannot be interpreted as foci (see Neeleman and van de Koot, this volume).

(7) a. *wh-* fronting

         PJON   sinádise   o   jánis?

         who:ACC.M   meet:PST.PFV:3 DEF:NOM.M   J.:NOM.M

         'Who did Janis meet?'

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b. *wh-* in CLLD

PJON IPURɣÓ_i ton_i adipaθí

who:ACC.M minister:ACC.M 3:ACC.M dislike:3

akóma ke o kaθréptis?

even and DEF:NOM.M mirror:NOM.M

'Which minister is such that even the mirror dislikes him?' (retrieved from the

web, 11.4.2012)

A further deviation from the generalization in (6) is the fact that fronted constituents do not

always present narrow foci; see (8) (Alexopoulou 1999, Alexopoulou and Kolliakou 2002). In

contrast to the fronted focus in (3b), the construction in (8) bears a clause-final nuclear stress.

With this prosodic structure, the fronted constituent is certainly not a focus; the focus domain

of this utterance must contain the subject.

(8)   Fronted topic

tin parástasi skinoθétise o

DEF:ACC.F performance:ACC.F direct:PST.PFV:3 DEF:NOM.M

ðIMÍTRIS POTAMÍTIS.

D.:NOM.M P.:NOM.M

'The performance was directed by Dimitris Potamitis.' (Alexopoulou 1999: 1)

Summing up the basic facts, the left periphery contains two configurations, CLLD and

fronting, that roughly correlate with topic and focus respectively (but with noticeable

exceptions). In the postverbal domain, background arguments may occur with a co-referent

clitic (clitic doubling). The first question is whether the introduced constructions correspond

to different constituent structures. The relevant data for this question are the scopal properties

of these constructions, which are discussed in Section 34.2 Section 34.3 will set up the basic facts of Modern Greek prosodic structure. Building on the syntactic and prosodic background of these sections, Section 34.4 will examine the interpretational properties of the constructions at issue. The aim of this section is to determine to what extent the interpretational properties of the constructions under discussion are predictable by the basic syntactic and prosodic facts in this language. As a general principle, the stipulation of information structural projections in the constituent structure will be empirically justified if any interpretational properties cannot be accounted for through independent assumptions about syntax and prosody. Conclusions about the interaction between different layers of grammar in the expression of information structure are presented in Section 34.5.

34.2 Syntactic properties

34.2.1 Left periphery

Section 34.1 introduced an array of left peripheral configurations: {clitic left-dislocated topic in (3a); fronted focus in (3b); clitic left-dislocated focus in (7b); fronted topic in (8)}. The question is what is the exact relation between the discourse features of 'topic' and 'focus' and the syntactic constructions at issue. Are topics and foci syntactic entities, or are they just optimally realized with particular syntactic constructions (for independent reasons) such that their syntactic correlates are traced back to the properties of these constructions?

The straightforward analysis of the fact that topics precede foci as in (4b), is the assumption of two hierarchically ordered functional projections in the Greek left periphery (TopP > FocP) such that the double in the CLLD-construction occupies the specifier position of the higher projection (TopP) and the fronted constituent the specifier position of the lower one (FocP; see Agouraki 1990, Tsimpli 1990, 1995, Georgiafentis 2004; see Aboh as well as Bocci and Poletto, this volume, about cartographic approaches to syntax).

The alternative hypothesis is that the hierarchical structure hosts purely structural configurations such as the double constituent involved in CLLD and the fronted constituent in fronting, as schematically presented in (9b)[3] (see 'non-configurational approach in Alexopoulou 1999 and the 'syntax-information structure underdeterminacy hypothesis' in Haidou 2012). The order 'topic > focus' is not accounted for by the constituent structure in these accounts. It results from independent generalizations of the phonological form: the topic is realized domain of the clause that is higher than the clausal layer that contains the focus, which predicts that topics can only precede foci in the left periphery ().

(9) a. cartographic model: $[\text{XP}_{\text{topic}} [\text{YP}_{\text{focus}} [_{\text{TP}} \dots]]]$

     b. non-discourse configurational model: $[\text{XP}_{\text{double}} [\text{YP}_{\text{fronted}} [_{\text{TP}} \dots]]]$

Research on Modern Greek syntax has established an extensive body of knowledge about the properties of the left periphery. In general, the fronting construction is an instance of A-bar movement, whereas CLLD shows mixed properties of A-bar movement (e.g. sensitivity to island constraints) and base generation (e.g. obviation of Weak Crossover effects) (Iatridou 1995: 13f.). The relevant question for the present section is whether these phenomena are sensitive to the information structural features.

Binding facts show an asymmetry between the CLLD and fronting: fronted constituents have the same binding properties as the basic configuration, as shown in (10a-b), while CLLD creates new possibilities, as shown in (10c) (Iatridou 1995: 13; Alexiadou and Anagnostopoulou 1997; Alexopoulou 1999, 2009).

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[3] The properties discussed in this section do not apply to hanging topic left dislocation, which differs both in its contextual as well as in its syntactic properties (Anagnostopoulou 1997; Grohmann 2000).

(10) a. Canonical configuration

*o   ðáskalós   tu$_i$ frondízi   káθe   maθití$_i$.

DEF:NOM.M teacher:NOM.M   3:GEN.M   care:3   each   pupil:ACC.M

(intended) 'His$_i$ teacher cares about each pupil$_i$.'

  b. Fronted Focus

*ΚΑΘΕ   ΜΑΘΙΤΙ$_i$ frondízi   o   ðáskalós   tu$_i$.

each   pupil:GEN.M care:3   DEF:NOM.M teacher:NOM.M 3:GEN.M

(intended) 'His$_i$ teacher cares about each pupil$_i$.'

  c. CLLD

káθe   maθití$_i$ ton$_i$ frondízi o

each   pupil:ACC.M 3:ACC.M   care:3   DEF:NOM.M

ðáskalós   tu$_i$.

teacher:NOM.M 3:GEN.M

(lit.) 'Each pupil, his$_i$ teacher cares about him$_i$.'

Crucially, the facts in (10) are not sensitive to information structure. The properties of

focus fronting in (10b) are independent of focus. Example (11) is a paraphrase of the

'topicalization' construction in (8) with an intonational nucleus in the postverbal domain. The

topicalized constituent cannot bind into the possessor of the subject, i.e. it is in a position that

does not take scope over the core clause. Hence, the binding properties of fronted topics differ

from the binding properties of CLLD in (10c) and are identical to the properties of fronted

foci in (10b).

(11)   Fronted topic

*káθe   parástasi$_i$ skinoθétise   o

each   performance:ACC.F   direct:PST.PFV:3   DEF:NOM.M

SKINOΘÉTIS   tis$_i$.

director:NOM.M   3:GEN.F

(intended) 'Each performance was directed by its director.'

The independence of the syntax of CLLD from information structure is also supported by the binding properties of *wh-* questions. Canonical *wh-* fronting shares the same binding properties as focus fronting; compare (10b) and (12a). However, the CLLD question has the same properties as the CLLD example in (10c) (Alexopoulou 1999: 111, 2009, Alexopoulou and Kolliakou 2002). Hence, binding possibilities pattern with the syntactic construction and not with information structure.

(12) a.   Fronted *wh-*

*PJON   MAΘITÍ$_i$ frondízi

which:ACC.M   pupil:ACC.M   care:3

o   ðáskalós   tu$_i$?

DEF:NOM.M   teacher:NOM.M   3:GEN.M

(intended) 'Which pupil$_i$ does his$_i$ teacher care about?'

b.   Clitic left-dislocated *wh-*

PJON   MAΘITÍ$_i$ ton$_i$ frondízi

which:ACC.M   pupil:ACC.M   3:ACC.M   care:3

o   ðáskalós   tu$_i$?

DEF:NOM.M   teacher:NOM.M   3:GEN.M

'Which pupil$_i$ does his$_i$ teacher care about?'

Further support for the independence of syntax from information structure comes from the scopal relations between quantifiers, as illustrated in (13) (Alexiadou and Anagnostopoulou

1998: 505; Alexopoulou 1999: 111f.). The canonical configuration in (13a) is scopally

ambiguous. The fronting construction in (13b) also has both readings, though there is a

preference for the narrow scope reading. This effect is irrelevant for the scopal properties of

the hierarchical structure: focus evokes the exclusion of alternatives, hence it motivates an

inference that a particular individual is at issue (Fox and Sauerland 1997). The scopal

asymmetry between subjects and objects is independent of the focus domain of (13b), as has

been shown experimentally by Baltazani (2002: 165–199). Crucially, the scopal relations are

different in CLLD, where the subject cannot have scope over the left-dislocated constituent;

see (13c).

(13)   a.   Canonical configuration

kátʰe ðáskalos   frodízi kápio   maθití.

each teacher:NOM.M care:3   some:ACC.M pupil:ACC.M

'Each teacher cares about some pupil.' ($\forall > \exists$; $\exists > \forall$)

b.   Fronted focus

KÁPIO   MAΘITÍ   frodízi káθe   ðáskalos.

some:ACC.M pupil:ACC.M care:3   each   teacher:NOM.M

 'Each teacher cares about some pupil.' ($\forall > \exists$; $\exists > \forall$)

c.   CLLD

kápio   maθití$_i$ ton$_i$ frodízi káθe   ðáskalos.

some:ACC.M   pupil:ACC.M 3:ACC   care:3   each   teacher:NOM.M

'Every teacher cares about a certain student.' (*$\forall > \exists$; $\exists > \forall$)

The same facts hold for fronting and CLLD questions, as illustrated in (14a-b). The

question with the fronted *wh-* pronoun retains the scope ambiguity of the basic configuration,

which replicates the observation for the fronting construction in (13b). However, the CLLD question has only a possible reading in which the universal quantifier is under the scope of the *wh-* pronoun; see (14b).

(14) a.   Fronted *wh-*

    PJON   MAΘITÍ   frodízi káθe   ðáskalos?

    who:ACC.M   pupil:ACC.M care:3   each   teacher:NOM.M

    'About which student does each teacher care?' ($\forall > wh$; $wh > \forall$)

    b.   Clitic left-dislocated *wh-*

    PJON   MAΘITÍ$_i$ ton$_i$ frodízi káθe   ðáskalos?

    who:ACC.M   pupil:ACC.M 3:ACC care:3   each   teacher:NOM.M

    'Which student is such that every teacher cares about him?' (*$\forall > wh$; $wh > \forall$)

In sum, the scopal asymmetries between fronting and CLLD are independent of information structure. The presence of a clitic in CLLD gives rise to new scopal possibilities that are not influenced by the contextual trigger of the construction (topic or focus). This implies that, from the point of view of the hierarchical structure, the four information structural options are subsumed under two left peripheral hierarchically ordered configurations.

A final note is due concerning preverbal subjects in SVO. Some authors assume that subjects share the same position with left-dislocated objects (Alexiadou and Anagnostopoulou 1998: 501).[4] As regards the information structural possibilities, it is clear that the discourse

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[4] The basic evidence for this view is that preverbal indefinite subjects can only have wide scope over universally quantified objects, while postverbal subjects (in VSO) may not. However, there are counterexamples to this generalization (Giannakidou 2001: 3.2.3).

properties of preverbal subjects and left-dislocated objects are completely different; as discussed in Section 34.1 the latter but not the former are contextually restricted. A closer examination of their syntactic properties shows that preverbal subjects crucially differ from left-dislocated objects. Left-dislocated and fronted constituents are islands for extraction (Tsimpli 1995: 182), whereas this is not the case for subjects (see Spyropoulos and Revithiadou 2009 for a detailed discussion about subjects).

34.2.2 Postverbal domain

The crucial question in the postverbal domain is the syntactic status of clitic-doubled objects; see (5). Do these objects occupy an argument position, or are they adjoined elements (see summaries in Alexiadou and Anagnostopoulou 2000 and Philippaki-Warburton et al. 2002; see also Tsakali 2008 on crosslinguistic variation)? Constraints on extraction suggest the latter view (see further evidence and detailed discussion in Androulakis 2001; Philippaki-Warburton et al. 2002; Spyropoulos and Revithiadou 2009: 9), as illustrated in (15): extraction is possible out of objects in situ, but not possible out of left-dislocated or fronted objects; see the contrast between (15a-b). Crucially, extraction is not possible with clitic-doubled postverbal objects, which contrasts with the properties of objects in situ; see (15c).

(15)[5] a.   Extraction out of object in situ

PJANÚ$_i$ mu   ípes   óti

who:GEN.M 1:GEN say:PST.PFV:3 that

iðes   [to   aftokínito t_i]   ?

see:PST.PFV:2   DEF:ACC.N car:ACC.N

'Who$_i$ did you say to me that you saw [his$_i$ car]?'

b.   Extraction out of fronted/left-dislocated object

*PJANÚ$_i$ mu   ípes   óti

who:GEN.M 1:GEN say:PST.PFV:2   that

[to   aftokínito t_i]   (to)   iðes ?

DEF:ACC.N car:ACC.N   3:ACC.N   see:PST.PFV:2

c.   Extraction out of clitic-doubled object

*PJANÚ$_i$ mu   ípes   óti   to

who:GEN.M 1:GEN say:PST.PFV:3 that   3:ACC.N

iðes   [to   aftokínito t_i]   ?

see:PST.PFV:2   DEF:ACC.N car:ACC.N

'Who$_i$ did you say to me that you saw [his car t_i]?'

Assuming that material in adjoined positions is an island for extraction (see Lopez, this volume), the implications of the facts in (15) are straightforward. Adjunction is possible at

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[5] These extraction facts hold true for instances of alienable possession (inalienable noun phrases may be accompanied by a zero pronoun that allows for more possibilities of extraction) and for verbs that exclude an ambiguity between extracted DP subconstituent and V-adjuncts (e.g. verbs allowing an experiencer genitive or several types of embedded prepositional phrases). Examples that do not fulfil these requirements have different properties, which are independent from the syntactic asymmetry under discussion.

several layers of the clause structure (vP, CP), and postverbal clitic-doubled objects exploit

several possibilities in different constructions (Androulakis 2001; Philippaki-Warburton et al.

2002). For the purpose of understanding the information structural possibilities, the relevant

issue is that the double is an adjoined constituent, as indicated in (16b), and this contrasts with

an object in situ, as in (16a).

(16)   a.   [$_{vP}$ …XP$_{object}$]

         b.   [[$_{vP}$ clitic …] XP$_{double}$]

34.3   Prosodic properties

Modern Greek is an intonational language with a repertoire of tonal events comprising pitch

accents (L*+H, L+H*, H*+L, H*, L*), phrase accents (H-, L-, and !H-), and boundary tones

(H%, L%, and !H%) (see Greek ToBI; Arvaniti and Baltazani 2005). Two issues are

particularly relevant for the study of information structure: (a) the delimitation of prosodic

domains (see Section 34.3.1), and (b) the role of accentual contrasts (Section 34.3.2).

34.3.1 Prosodic domains

Figure illustrates an SVO utterance with neutral intonation (left panel), and the same order

with a clitic-doubled object (right panel); see gloss in (17).[6] This prosodic realization of the

SVO utterance in the left panel is felicitous as an answer to the question 'What happened?';

see (18). The default prenuclear accent in Modern Greek is a rising pitch accent (L*+H)

(Arvaniti and Ladd 1995; Arvaniti, Ladd, and Mennen 1998, 2000; Arvaniti and Baltazani

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[6] The pitch tracks in this section are illustrations – not empirical proof; the evidence for the discussed

phenomena is found in the cited literature.

2005). The right edge of the preverbal subject constituent is demarcated with a high phrase accent (H-); this tonal event is not bi-uniquely associated with a particular discourse function (such as topic), but occurs with a wide range of non-final prosodic constituents, e.g. left-dislocated material, lists and parentheticals (Baltazani and Jun 1999), and non-final clauses (Botinis et al. 2004). The most frequent type of nuclear accent in declaratives involves a high target associated with the starred syllable (either H* or L+H*; see 34.3.2; see Baltazani 2002 for further options). The low target at the right edge of the intonational phrase is a boundary tone (Arvaniti and Baltazani 2005; see Arvaniti and Godjevac 2003 for evidence that this tonal event is independent from declination).

The clitic doubling version in the right panel could be an answer to the question 'What happened with the race?'. The nuclear accent is aligned with the starred syllable of the verb in this example; another possible tonal structure would be a nuclear accent on the subject (depending on focus). One possibility is categorically excluded though: the clitic-doubled object cannot bear the nuclear accent (Iatridou 1995; Alexiadou and Anagnostopoulou 1997). The double is in an adjoined position, as presented in (16b), and adjoined material is extrametrical, i.e. it cannot bear nuclear stress; see (16) (Revithiadou and Spyropoulos 2008: 43). Additional evidence comes from the fact that sandhi rules do not apply at the left boundary of the clitic-doubled constituent (see detailed discussion in Revithiadou and Spyropoulos 2008, Spyropoulos and Revithiadou 2009).

(17) i   kiría   Manuilídu (ton$_i$)   diorgánose
      DEF:NOM.F Mrs:NOM.F M.   3:ACC.M organize:PST.PFV:3
      ton   agóna$_i$.
      DEF:ACC.M   race:ACC.M
      'Mrs. Manouilidou organized the race.'

(18)   Appropriate contexts for the prosodic realizations in Figure

    a.   What happened? (canonical, object in situ: left panel)

    b.   What happened with the race? (clitic-doubled object: right panel)

Figure 34.1: Canonical configuration vs. clitic doubling

canonical, object in situ   clitic-doubled object
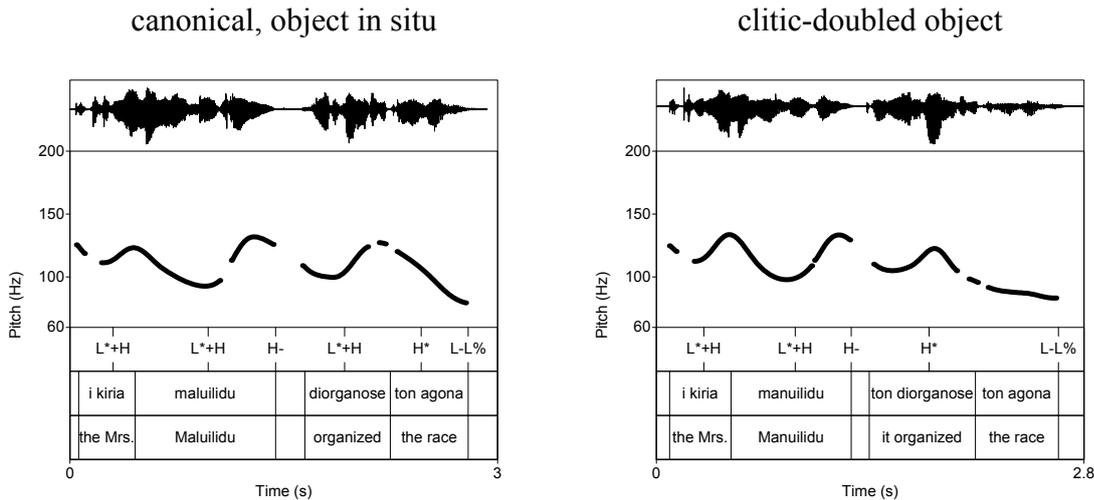
The contrast between the left-peripheral configurations is illustrated in Figure , which presents the sample sentence in (19) pronounced in the contexts in (20) (the pronominal clitic occurs in the CLLD construction in the left panels). The properties of the figures in the top left and in the bottom right panel are reported in a large number of studies, but the intonations of the CLLD construction with an initial focus and the fronting construction with a final focus have not yet been studied with instrumental phonetic methods.

The pitch tracks in Figure reveal a major contrast between final foci (top panels) and initial foci (bottom panels). The focus hosts the nuclear accent and the postnuclear material is deaccented (Baltazani and Jun 1999; Baltazani 2002, 2003b; Arvaniti and Baltazani 2005; Gryllia 2008). This property is reflected in the non-final foci in the bottom panels: the focus bears a nuclear accent H* and the postfocal domain is generally deaccented. The CLLD

utterance with initial focus (bottom left panel) is slightly different: the clausal core must bear a secondary stress (compare with the deaccented version in the bottom-right panel).

The tonal structure of the final foci in the top panels is richer: the left side of the focus domain of the utterance is demarcated by an intonational boundary (see H- target in Figure , top panels). A further correlate of the alignment of the left edge of the focus with the boundary of a phonological phrase is the fact that some sandhi rules do not apply at this position (Revithiadou 2003). There is no evidence for tonal events demarcating the right edge of a focus domain. Clitic left-dislocated material is demarcated with a high phrase tone at its right edge; see top left panel. The fronting construction in the top right panel has a final focus aligned with a left boundary: the prefocal material is realized as a single prosodic phrase with two prenuclear accents (Baltazani 2002; Revithiadou 2003).

(19) ton   agóna$_i$ (ton$_i$)   diorgánose

      DEF:ACC.M   race:ACC.M   3:ACC.M   organize:PST.PFV:3

      i   kiría   Manuilídu.

      DEF:NOM.F   Mrs:NOM.F   M.

      'The race was organized by Mrs. Manouilidou.'

(20) Appropriate contexts for the prosodic realizations in Figure

      a.   What about the race? (topic/CLLD: top-left)

      b.   Who organized the race? (topic/fronting: top-right)

      c.   Did Mrs. Manouilidou organize the performance? (focus/CLLD: bottom-left)

      d.   What did Mrs. Manouilidou organize? (focus/fronted: bottom-right)

Figure 34.2: Prosodic structure and left-peripheral configurations
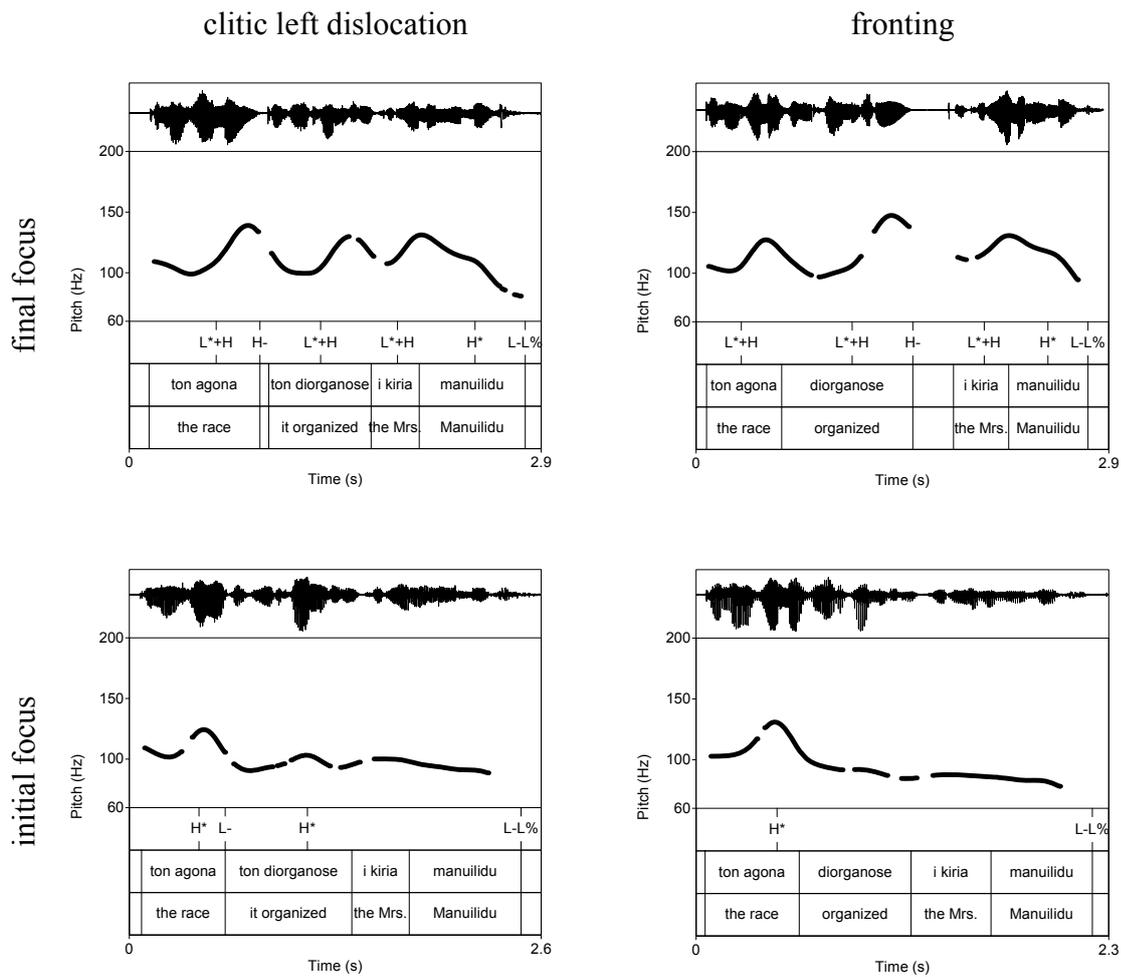

34.3.2 Nuclear accent contrasts

The accentual contrast in the realization of the nuclear accent correlates with different types of focus in several languages (Alter et al. 2001: 65 and Steube 2001: 233 for German; Face 2002: 34 for Madrid Spanish; see several Italian dialects in Grice et al. 2005: 364). Studies on Modern Greek syntax frequently assume a concept of 'contrastive stress' that may encode information structural differences independently from word order (see, e.g. Georgiafentis 2004). Following Greek ToBI, such a contrast applies between the nuclear accents H* and L+H*. The H* accent corresponds to an F_0-peak that is preceded by a small rise and signals broad focus (Arvaniti and Baltazani 2005: 87; see also Baltazani and Jun 1999; Baltazani

2003a). The bitonal L+H* corresponds to an F_0-peak that is preceded by a noticeable dip and aligns with the middle of the accented syllable; this accent is reported for narrow focus contexts (Arvaniti et al. 2006). The contrast between these tonal realizations is illustrated in Figure , which presents the sentence in (17) under the contexts in (21). The critical difference lies in the realization of the nuclear accent, which is a high tonal target (H*) in the left panel (followed by a fall towards the low boundary tone), and a rise (L+H*) in the right panel. The latter tonal event involves an initial dip, such that the H-target is aligned with the middle of the stressed syllable.

(21)   Appropriate contexts for the prosodic realizations in Figure

   a.   What did Mrs. Manulidu organize? (left panel)

   b.   Did Mrs. Manulidu organize the performance? (right panel)

Figure 34.3: Nuclear accent contrast
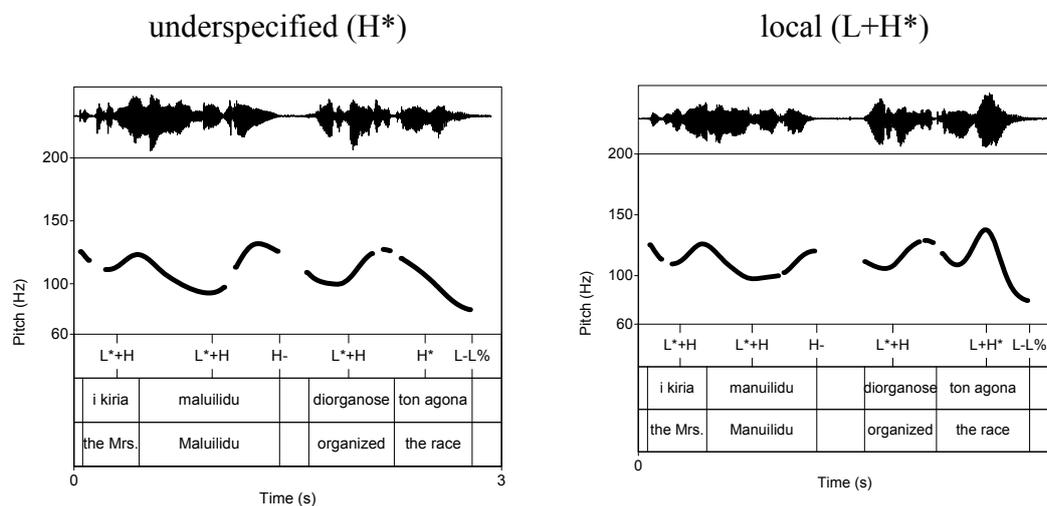
Experimental studies on the interpretation of these accentual patterns do not reveal a significant correlation between accent and type of focus (Gryllia 2008). Crucially, both accentual realizations are possible in contrastive contexts (e.g. answers involving correction)

and non-contrastive contexts (e.g. answers to *wh-* questions). However, there is evidence for a difference with respect to the focus domain: both varieties of the nuclear accent have a local interpretation, i.e. the focus domain may be the phonological word that bears this accent. However, only the H* may be projected to higher layers of the metrical structure: e.g. a H* (and not the L+H*) accent on a final O may be interpreted as O-focus, VP-focus, and all-focus. This property is independent of focus type, i.e. the L+H* does not project to a contrastive VP-focus domain (see experimental results in Georgakopoulos and Skopeteas 2010). Given these facts, the relevant contrast is the distinction between an underspecified nuclear accent and a nuclear accent that is associated with its phonological host and cannot be projected to higher domains of the constituent structure, i.e. it is not interpreted as the nuclear stress of the VP or the clause, as outlined in (22). This contrast only applies in syntactic configurations in which the projection of the nuclear accent is made possible by the nuclear stress rule; otherwise (e.g. in clause-initial contexts) the two realizations of the nuclear accent alternate in free variation (Georgakopoulos and Skopeteas 2010).

(22) Final nuclear accents (in declaratives)

    a.   H*   →   local or projected

    b.   L+H*   →   local

34.4 Interpretational properties

34.4.1 Focus fronting

The introduced syntactic and prosodic assumptions open an array of information structural possibilities that can be straightforwardly accounted for through the rules for assigning the phrasal stress that independently hold true. Greek is a head-initial language, which implies that phrasal stress targets the rightmost constituent that is eligible for stress within the stress

domain (see Georgiafentis 2004; experimental evidence in Keller and Alexopoulou 2001 and Georgakopoulos and Skopeteas 2010; see also Zubizarreta, this volume). Beyond the local interpretation of the nuclear accent, which is always available (under the tonal conditions determined in (22)), a final accent also allows for projected interpretations. This asymmetry gives rise to different focus sets, i.e. sets of possible focus domains (Reinhart 2006); compare (23a-b).

(23)[7]   Structure   Focus set

   a. $[_{TP}$ S $[_{vP}$ V O$_{accented}$]]   {O, vP, TP}

   b. $[_{FP}$ $\underline{O_{accented}}$ $[_{vP}$ V S]]   {O}

According to the generalizations about phrasal stress, fronted constituents bearing a nuclear accent form a narrow focus domain, which implies that the discourse properties of fronted foci are already predicted by generalizations about the phonological form. Furthermore, fronted constituents are expected to be interpreted as foci only if they bear the nuclear accent. Fronted constituents that do not bear the nuclear accent are interpreted as topics; see (8).

The question is whether this contrast captures the entire range of data in Greek. If there are interpretational properties beyond those that are independently predicted by the prosodic structure, then we must assume that a feature with semantic content is associated with the constituent structure. A good candidate for such a property is the identificational interpretation of focus fronting (see É Kiss 1998, 2009). If a fronted constituent excludes alternatives while in situ focus does not, this would imply a semantic contrast that is not

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[7] FP stands for 'functional projection' underspecified for discourse features.

captured by the options in (23a-b) and has to be accommodated by additional assumptions (such as an identificational operator triggering the fronting operation).

Some research on focus in Modern Greek argues that the fronting construction involves identificational properties: Greek focus fronting is classified as [+exhaustive, +contrastive] (É. Kiss 1998: 270; based on Tsimpli 1995; see also Georgiafentis (2004) for a detailed examination of interpretational and distributional evidence). This generalization is established through comparisons of sentences with a fronted focus vs. canonical sentences. However, canonical word order is ambiguous between a broad focus and several narrow focus readings in Greek depending on the accentual structure. Hence, the role of syntax can only be disentangled from the role of prosody by a comparison between fronted focus and *narrow focus in situ* as expressed with a non-projectable nuclear accent; see (22). The empirical facts do not indicate a contrast between these two possibilities of narrow focus. The basic facts are illustrated in (24) with a test proposed in É. Kiss (1998) for Hungarian (see detailed discussion on contrastive and exhaustive properties of Greek foci in Gryllia (2008: 7-55) and Haidou (2012: 126-197)). In example A_1 (broad focus), the object constituent does not necessarily identify the exhaustive set of relevant referents for which the event is the case. In examples A_2 (ex situ focus) and A_3 (narrow focus in situ), the referents at issue are exhaustively identified. The empirical evidence for this contrast is that the presence of a further referent for which the proposition holds true contradicts A_2 and A_3 but not A_1 (see appropriateness of the negation in the continuation B).

(24) A_1: agórase   éna   kapélo.

          buy:PST.PFV:3 INDF:ACC.N   hat:ACC.N

          'S/he bought a hat.'

     A_2: éna   KAPÉLO   agórase.

          INDF:ACC.N   hat:ACC.N   buy:PST.PFV:3

'S/he bought a hat.'

A₃: agórase   éna   KAPÉLO.

buy:PST.PFV:3   INDF:ACC.N   hat:ACC.N

'S/he bought a hat.'

B: óxi, agórase   ki   éna   paltó.

no   buy: PST.PFV:3 also INDF:ACC.N   coat:ACC.N

'No, s/he also bought a coat.' (not felicitous in the context of A₁; felicitous in the context of A₂ and A₃)

There is evidence that the identificational interpretation of focus-fronting is a defeasible inference. First, this construction is compatible with expressions that contradict an exhaustive identification, e.g. an *even*-phrase; see (25a). Furthermore, the exhaustive interpretation does not arise if there is another trigger for focus fronting: if focus fronting is motivated by the non-predictability of the referent, the interpretation that the focus referent denotes the exhaustive subset of referents for which the presupposition holds true does not apply (see experimental evidence that Greek differs from Hungarian in this respect in Skopeteas and Fanselow 2011). The direct object in (25b) denotes a referent that is non-predictable in this context. If non-predictability accounts for focus-fronting in a particular context, the inference of exhaustive interpretation does not arise (world knowledge suggests that the 'power outlet' is only a subset of the entities washed by the grandfather in (25b)).

(25) a. akómi ke   to   PRÓEÐRO   kalésane.

even   and DEF:ACC.M   president:ACC.M   invite:PST.PFV:3.PL

'They even invited the PRESIDENT.'

b. tin   PRÍZA   épline

DEF:ACC.F power.outlet:ACC.F   wash:PST.PFV.3

o   papús!

DEF:NOM.M   grandpa:NOM.M

'The grandfather washed the POWER OUTLET!'

The focus options of the fronting operation in Greek are accounted for by the rules determining phrasal stress. Fronted foci evoke alternatives under particular contextual conditions and do not differ from narrow focus in situ in this respect. This interpretational property arises through a conversational implicature: the intuition that the proposition does not hold for the subset of non-asserted relevant alternatives can be explained by the quantity maxim (Spector, 2005: 229). This intuition arises with any type of focus (also instances of broad focus) and is stronger if the relevant alternatives are easier to retrieve, which is the case for narrow focus.

34.4.2 CLLD and clitic doubling

CLLD is not triggered by simple givenness asymmetries, i.e. it requires a stronger contextual trigger than scrambling in Germanic (see cross-linguistic evidence from speech production in Skopeteas and Fanselow 2009). The appropriate context for CLLD is contrastive topicalization: the left-dislocated constituent identifies a referent among a set of relevant alternatives in the common ground for which the asserted information (in its complement) is the case (see an account in terms of 'linkhood' in Alexopoulou and Kolliakou 2002; see also Lopez, this volume). This opens up an array of interpretative variants such as implicational topics, shifting topics, partial topics, etc. (see Büring, this volume), which are all possible with CLLD in Greek.

The interpretation of CLLD is illustrated by the minimal pair in (26). The answer with an object in situ in (26a) is congruent to the VP question. The CLLD answer in (26b) evokes the intuition that there is further contextually relevant information that is not explicitly available

in the presented context. In particular, the clitic left-dislocated object in (26b) evokes a set of alternative referents that are presupposed by the speaker as part of the Common Ground, e.g. {Harry Potter, The Hobbit}, and for which the asserted information ('I read x') is not the case.

(26)　　'What did you do in the summer?'

　　　　a.　ðiávasa　　　　　　to　　　　　vivlío　　　　tis　　　　　zúglas.

　　　　　　read:PST.PFV:1　DEF:ACC.N　book:ACC.N　DEF:GEN.F　jungle:GEN.F

　　　　　　'I read The Jungle Book.'

　　　　b.　[to　　　　　　vivlío　　　　tis　　　　　zúglas]$_i$　　to$_i$

　　　　　　DEF:ACC.N　　book:ACC.N　DEF:GEN.F　jungle:GEN.F　3:ACC.N

　　　　　　ðiávasa.

　　　　　　read:PST.PFV:1

　　　　　　'Concerning The Jungle Book, I read it.'

CLLD is also possible with an intonational nucleus on the left-dislocated constituent; see Figure , bottom left panel. The interesting issue is the difference between fronting and left-dislocation in this case. Starting with *wh-* questions, the default construction involves a fronted *wh-* pronoun as in (27a). This question presupposes that there is some *x* (*x*=pupil), who is called by the director and expresses a request to specify this referent. The question with the clitic in (27b) is contextually restricted. This question has a reading in which it is presupposed that the addressee knows the referent that instantiates the variable ('Can you tell me again, who was the pupil who was called by the director?'). With this reading, example (27b) may occur as a quiz question. The effect of CLLD is that the clitic left-dislocated *wh-*phrase is interpreted D-linked (=discourse-linked), i.e. related to a referent that is already available in the common ground (Theophanopoulou-Kontou 1986-1987; Iatridou 1995: 27). Furthermore, the same example (27b) can be used with a generic interpretation that does not

presuppose a specific referent (Alexopoulou 2009); this interpretation can be supported by an adverb such as *poté* 'ever'. The closest paraphrase of this type of question in English is 'which pupil is such, that the director called him?'. This reading could be used in a rhetorical question implying that there is no such pupil that the director may have called. This reading cannot be accounted for by a D-linking account of CLLD. Example (27b) is interpreted as specificational predication: the double denotes a set and the specificational predicate characterizes this set by denoting a property that holds true for its members (compare the analysis of É. Kiss 2006 on Hungarian focus).

(27) a. PJON   MAθITÍ   píre   tiléfono

      who:ACC.M   pupil:ACC.M   take:PST.PFV:3 call:ACC.N

      o   ðiefθidis?

      DEF:NOM.M   director:NOM.M

      'Which student did the director call?'

      b. PJON   MAθITÍ$_i$ ton$_i$ píre   tiléfono

      who:ACC.M   pupil:ACC.M   3:ACC.M   take:PST.PFV.3 call:ACC.N

      o   ðiefθidis?

      DEF:NOM.M   director:NOM.M

      'Which student is such that the director called him?'

Turning to focus, the contrast is similar: the constructions in (28) uttered as answers to the *wh-* question in (27a) have different interpretations. The congruent answer is (28a); the CLLD answer in (28b) with an intonational nucleus on the left-dislocated material evokes the interpretation that the answer is not exhaustive, i.e. it is not excluded that other referents are the case. This interpretation comes from the fact that the double in CLLD matches the pronominal variable of its complement. The utterance 'Janis is such that the director called

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him' is a partial answer to the question 'Who did the director call?'. The speaker gives an under-informative answer: s/he asserts that the restrictor of the question specifies the referent of the left-dislocated object, which motivates the implicature that s/he does not have enough evidence to list the exhaustive subset of referents for which the restrictor of the question holds true. This implicature does not arise if the CLLD answer is uttered as an answer to the CLLD question in (27b): in this case, the utterance 'Janis is such that the director called him' is a congruent answer to the question 'Who is such that the director called him?'.

(28)   'Who did the director call?'

    a.   TO   JÁNI   píre   tiléfono.

            DEF:ACC.M   J.:ACC.M   take:PST.PFV:3 call:ACC.N

            'She called John.'

    b.   TO   JÁNI$_i$ ton$_i$ píre   tiléfono.

            DEF:ACC.M   J.:ACC.M 3:ACC.M take:PST.PFV:3 call:ACC.N

            'The one who she called was John.'

CLLD is also possible with quantified noun phrases as doubles; see (10c) and (29). The double of these examples is clearly not a 'contrastive topic' and it is not D-linked. The CLLD utterance in (29) presupposes that the proposition 'some x (x=pupil) exists such that x was called by the director' is *available* in the Common Ground, which does not imply that the speaker commits to the truth of this proposition. In terms of specificational predication, the double denotes an empty set ('no pupil'), and its complement (i.e., the specificational predicate) characterizes this set by denoting property that applies to its members.

(29)   'The director called John, who is a pupil.'

     KANÉNAN   MAΘITÍ$_i$ ðen   ton$_i$ píre

noone:ACC.M pupil:ACC.M NEG 3:ACC.M take:PST.PFV.3

tiléfono o ðiefθidis.

call:ACC.N DEF:NOM.M director:NOM.M

'No pupil is such that the director called him.'

Clitic doubling does not occur under the same conditions as CLLD. Clitic-doubled objects cannot bear nuclear stress (Iatridou 1995), which is an expected correlate of right-dislocation; see (16b). This implies that only constituents that do not need to be accented may occur with clitic doubling. The counterparts of the constructions in (10c) and (29a) with quantified constituents are categorically excluded in clitic doubling; see (30).

(30) * ðen ton$_i$ píre tiléfono o ðiefθidis

NEG 3:ACC.M take:PST.PFV.3 call:ACC.N DEF:NOM.M director:NOM.M

KANÉNAN MAΘITÍ$_i$

noone:ACC.M pupil:ACC.M

(intended) 'The director did not call any pupil.'

The condition that the double cannot be stressed in clitic doubling has repercussions on information structure, i.e. it must be background information such that it can be deaccented; see (31). Givenness is not a sufficient condition for clitic doubling: the utterance in (31) would not be felicitous in the context of a question in which the double is given but not background information, e.g. 'Did you read The Jungle Book or The Hobbit?' (see also account in terms of a 'prominence condition' in Anagnostopoulou 1999: 777). The difference to the contrastive topics in CLLD is that clitic doubling does not evoke alternatives (Valiouli 1993). Similarly to CLLD, the utterance in (31) is a partial answer to the question 'What did you do in the summer?'; see (26). However, a clitic-doubling answer to this question does not

evoke alternatives, it rather suggests a context in which the question 'Did you read The Jungle Book?' is part of the implicit Common Ground.

(31) 'Did you read The Jungle Book?'

to$_i$ ðiávasa   [to   vivlío   tis

3:ACC.N   read:PST.PFV:1   DEF:ACC.N   book:ACC.N   DEF:GEN.F

zúglas]$_i$.

jungle:GEN.F

'I read The Jungle Book.'

There are some intensively discussed counterexamples with indefinites in clitic doubling which show that the clitic-doubled constituent is not necessarily given information; see (32) (Kazazis and Pentheroudakis 1976; Anagnostopoulou 1999; Androulakis 2001). These examples come with additional requirements: the indefinite double must be an afterthought and constitutes an intonational unit that is definitively not part of the intonational entity encompassing the predicate, i.e. example (32) is not possible with a nuclear stress on the indefinite double (the preferred prosodic option for this example involves an intonational nucleus on the adverb). Hence, these examples do not challenge the generalization that the double cannot bear the intonational nucleus of the sentence. As previously discussed in Kazazis and Pentheroudakis (1976), these examples are cases of presupposition accommodation: they evoke a question that makes the indefinite object available in the implicit Common Ground.

(32) to$_i$ píno   EFXARÍSTOS   éna   uiskáki$_i$.

3:ACC.N   drink:1   with.pleasure   INDF:ACC.N   whiskey:DIM:ACC.N

'I drink a small whiskey with pleasure.' (Kazazis and Pentheroudakis 1976: 399)

34.5 Summary

Modern Greek is a language with flexible word order as well as intonational variation – both influenced by information structure. Two different syntactic configurations appear in the left-periphery, i.e. fronting and clitic left dislocation. The fronting construction is predominantly used to express narrow focus on the fronted constituent, in which case the fronted constituent bears the nuclear accent of the utterance. Clitic left dislocation is a construction typically used for contrastive topics. However, it also occurs with an accented double, in which case it displays the interpretational properties of specificational predication. In the postverbal domain, there is a contrast between objects in situ and clitic-doubled objects. There is syntactic evidence that clitic-doubled objects are right dislocated. As is generally the case for right dislocation, clitic-doubled objects cannot be accented, which has repercussions on their possible functions in discourse: only background information can occur with clitic doubling.

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