

# Pragmatics, intonation, and word order in Greek

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## 1. Introduction

The structuring of a sentence into parts such as old/new information, focus, background, theme, rheme, and many other terms, is referred to as its *information structure* (IS) or *information packaging* (Halliday 1967, Chafe 1974, Vallduví 1992). These IS notions fall within Pragmatics, the part of grammar that deals with non-truth conditional interpretation of sentences (i.e. not involving the truth of their propositional content). For Greek, as for many languages, string identical sentences with different IS—which is expressed linguistically mainly through intonation—very often are not interchangeable in context. Their intonation makes them felicitous in certain contexts and infelicitous in others. By extension, in the absence of context, the implicit knowledge of this function of intonation helps listeners decode different melodic realizations of utterances to recover their context. The idea that different contexts require different melodies of a particular sentence is very old and by now uncontroversial (Bolinger 1965, Halliday 1967, Jackendoff 1972, Ladd 1980, 1996, Gussenhoven 1984, Selkirk 1995, Rochemont 1986, Ward 1988, Pierrehumbert and Hirschberg 1990, Steedman 1991, Vallduví 1992, Roberts 1996, Büring 1997, among countless others).

In the 1990's, several proposals emerged describing the information structure of utterances through its manifestations in intonation and word order (Steedman 1991, 2000, Vallduví 1992, Büring 1997, 1999). These new models, mostly examining Germanic and Romance languages, showed that a simple two-dimensional focus-ground articulation of IS is not enough. They make finer distinctions within these two broad categories, thus being better able to predict both the intonational structure of utterances and also what contexts trigger different IS realizations of the same sentence. Across languages, new and old information are linguistically encoded differently in their prosodic, morphological, or syntactic realization.

New information is commonly manifested through focus. The term *focus* is multiply ambiguous: it has been used to refer to the pragmatic notion of new information (Rochemont 1986, Ward 1988, Vallduví 1992, Roberts 1996, Büring 1999), the prosodic notion of a prominent pitch accent (Pierrehumbert 1980, Pierrehumbert and Hirschberg 1990, Ladd 1980, 1996), the syntactic notion of F-marking of constituents as they become part of a phrase marker (Selkirk 1995, Rochemont 1986), or the semantic interpretation of F-marked constituents as a set of alternatives (Rooth 1992). Such ambiguity is unsurprising given that all the above are facets of the same phenomenon realized in the different components of grammar. Old information on the other hand has more varied realization. In prosody it is realized either as de-accented material or with special 'topic intonation'. In syntax it is elided, or moved to a left or right peripheral position. The semantic contribution of topics has been formalized in different ways (Vallduví 1992, Büring 1997).

For English, the IS of an utterance has been divided into constituents which Vallduví calls *link*, *focus*, and *tail*, Steedman calls *rheme* and *theme* which in turn are internally composed of a *focus* and a *ground* part, and Büring *contrastive topic*, *background*, *focus*. The difference in the number and definition of IS categories postulated in each model necessitates further experimental research to determine whether IS should be finer-grained or not (for a detailed comparison among the three models discussed above and an experimental study of IS in Greek see Baltazani 2002).

We now turn to the Greek data.

## 2. Greek Information Structure

Greek has flexible constituent order, with all six constituent permutations of an SVO sentence allowed (for syntactic analysis see Philippaki-Warbuton 1985, Agouraki 1990, Iatridou 1993, Tsimpli 1990, Alexiadou and Anagnostopoulou 1998, Alexiadou 1999, among others). However, there are restrictions in the use of each of the word orders, some of which relate to intonational structure as reflection of pragmatic categories such as *new* and *given*. The

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different combinations of prosodic structure and word order make a sentence appropriate for different contexts, thus connecting intonation, pragmatics and syntax. In what follows, I show how IS structure is intonationally realized (section 2.1), the interpretation of topic and focus (section 2.1), and also how IS regulates word order (section 2.3).

**2.1 The intonation of Greek focus and topic**

It has been shown that focused items are associated with a rising NPA—typically a L+H\* pitch accent—longer duration, and post-focal de-accenting (Botinis 1989, Baltazani & Jun 1999, Arvaniti and Baltazani in press). Furthermore, work on the prosodic realization of topics has shown that topics usually form a separate prosodic phrase (IP or ip) with a L\* NPA and a H boundary (Baltazani & Jun 1999, Arvaniti and Baltazani in press).

More specifically, Baltazani & Jun (1999) show that both focus and topic are distinguished by phrasing, type of pitch accent, and boundary tone: L+H\* nuclear pitch accent followed by de-accented material for foci and L\* NPA with no possibility of de-accenting for topics; L L% boundary for foci, H or H H% boundary for topics.

**2.2 Interpretation of focus and topic**

For the semantic interpretation of the IS categories in Greek I adopt the formalization that Büring (1997) uses for English and German: Contrastive Topics (CT) (realized in English with a L+H\* nuclear pitch accent and a LH% boundary) mark deviance from the question, in the sense that they answer a sub-question to the question asked. For example, a complete answer to (1) would give a list of the people-clothes pairs. In that sense (1A) is not a complete answer because it gives information about only one of the people going to the concert. The CT marking in (1A) indicates the deviance from a complete answer, leaving open questions about other people’s clothes.

- (1) Q: *What are people wearing to the concert?*  
 A: [ANN ] [ is wearing ] [a TUTU]  
 L+H\* LH% H\* LL%  
 CT Background Focus

Focus gives rise to an alternative set interpretation (Rooth 1992), creating *F*, a set of propositions of the form ‘Ann is wearing x’ by abstracting over the focused element. The *CT-value* of a sentence is a set *T* of question meanings of the form ‘What is X wearing?’ derived from the sentence *Ann is wearing a tutu* by abstracting over the CT-marked element. Informally, CT marking and *F* marking provide different kinds of variables to substitute for the constituents they mark. For (1) this results in an open proposition of the form ‘X is wearing x’, X ranging over individuals and x over clothes. (1Q) is called Question Under Discussion, QUD, a term adopted from Roberts (1996), and questions like those in set *T* are called sub-questions. Two conditions on the use of CT marking are that (i) it implies that one of the sub-questions is answered and (ii) other sub-questions to the same QUD are part of the discourse. This is a pragmatic analysis because the interpretation of Focus and Topic has to do with the discourse structure (question under discussion, givenness, etc), and not with truth conditions.

**2.3 Information Structure and word order**

Greek obligatorily marks all IS categories intonationally, just like English, but, unlike English, the order of IS constituents is not free—it is a non-plastic language in the sense of Vallduví: the order is Topic>Focus>Tail, thus employing both word order—like Catalan—and intonation—like English—to mark information structure.

**2.3.1 Focus, Tail, and word order**

Consider the dialogues in (2) and (3). The question in (2), ‘Who did Eleni praise in the meeting?’ requires an answer with narrow focus on the object *Virona*, shown with square brackets around the object, where the question in (3), ‘What did Eleni do in the meeting?’ requires an answer with VP focus, shown with square brackets around the whole VP. Utterances (2-A1) and (3-A1) have the same prosodic realization, that is a NPA on the object and a L\*+H pre-nuclear pitch accent on the verb, shown in Figure 1. The utterance in (2-A2) and (3-A2), on the other hand, is realized with the

NPA on the moved object and no accents on the verb, which like all post-nuclear material is de-accented, as shown in Figure 2<sup>1</sup>.

- (2) Q: *Poion epense I Eleni sto simvoulio?*  
 who-acc praised-3s the Eleni-nom in-the meeting  
 ‘Who did Eleni praise in the meeting?’  
 A1: *Epénesē [to VÍRONA]<sub>F</sub>*  
 praised-3s the Virona-acc  
 A2: *[to VÍRONA]<sub>F</sub> epénesē*  
 the Virona-acc praised-3s  
 ‘She praised Virona’
- (3) Q: *Ti ekane I Eleni sto simvoulio?*  
 what did-3s the Eleni-nom in-the meeting  
 ‘What did Eleni do in the meeting?’  
 A1: *[Epénesē to VÍRONA]<sub>F</sub>*  
 praised-3s the Virona-acc  
 A2: *#[to VÍRONA]<sub>F</sub> epénesē*  
 the Virona-acc praised-3s  
 ‘She praised Virona’

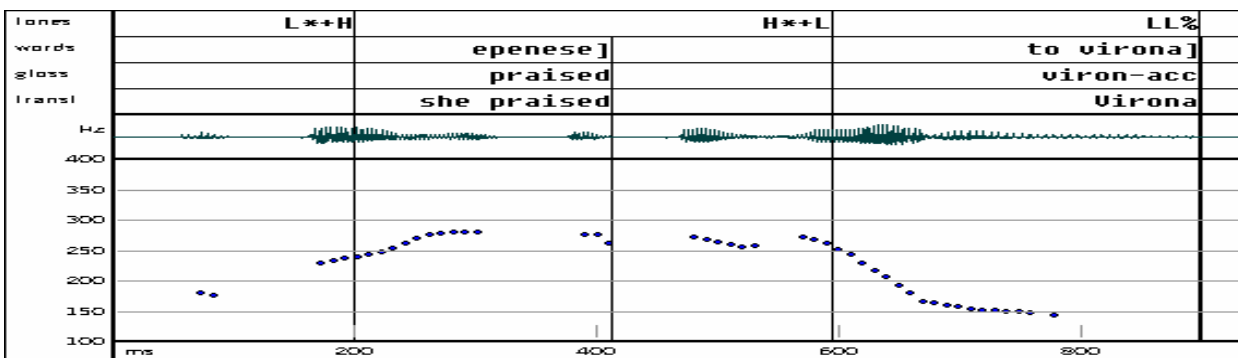


Figure 1.VO answer for VP and object focus: *Epénesē to Virona* (praised<sub>3s</sub> the Virona<sub>ACC</sub>) ‘She praised Virona’

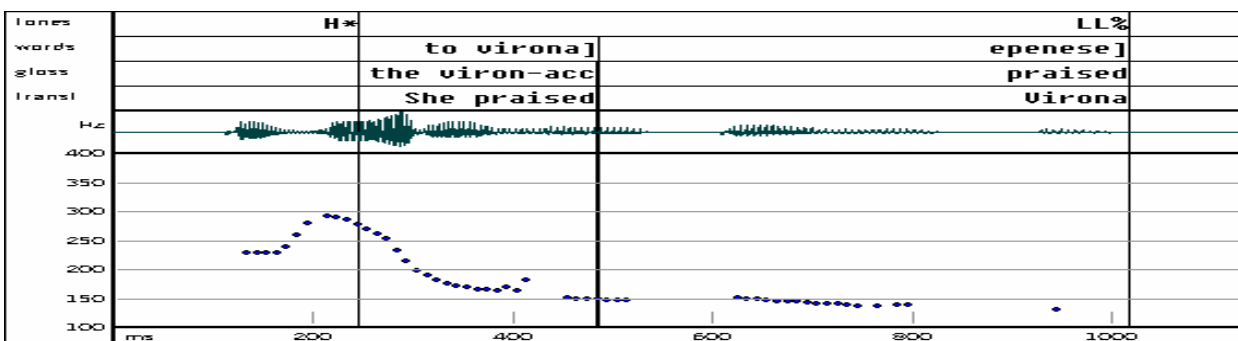


Figure 2.OV order answer for object focus only: *to Virona epénesē* (the Virona<sub>ACC</sub> praised<sub>3s</sub>) ‘She praised Virona’

The felicity of these answers depends on the context. Either of the answers in A1 or A2 is acceptable for question (2), but A2 is infelicitous in the context of question (3). Let us see why. The object *Virona* carries the NPA and when it moves to the left, the verb, like all post-nuclear material, is unaccented. This makes no difference in (2) because the verb there is old information and does not have to carry accent. In (3), however, the whole VP is F marked since it is not given. Leftward movement of the object leaves the verb, which not given, in the tail and this results in infelicity.

<sup>1</sup> For the intonational realization of topic and focus in non-affirmative utterances see Baltazani (2002).

Informally stated, the rule is that material in the tail must be given<sup>2</sup>. Note, however, that the reverse does not hold, that is, given material does not have to be in the tail, as answer (3-A1) suggests. The verb there is given and although it is not in the tail, the utterance is perfectly acceptable in the context. In other words, Greek does not prosodically mark pre-nuclear given material. (In an analogous sentence in English the verb has been claimed to remain unaccented.) I repeat the answers of the examples in (2, 3) adding the label for the new category, *tail*.

- (4) (2A1.) *Epenese* [*to VIRONA*]<sub>F</sub> (3A1.) [*Epenese to VIRONA*]<sub>F</sub> (2,3A2.) [*to VIRONA*]<sub>F</sub> [*epenesse*]<sub>Tail</sub>

The marking in (2A1) is incomplete: the verb there is neither part of the focus nor part of the tail. Prosodically it is realized just like the verb in (3A1), but informationally its status is the same as the verb in (2,3A2), that is, it is given information. This is neutralization of two different information structure objects under one prosodic realization.

### 2.3.2 Topic marking and word order

In this section we see examples of the use of topics, thus completing the presentation of all three IS categories in Greek. As mentioned, Greek uses intonation as well as word order to mark the different components of information structure. I also show that the statement that topic is unaccented, made mostly in the syntactic literature for Greek, is inaccurate.

(5A) – (5C), differing in word order and in intonational structure, can all be answers to (5Q). However, these three sentences are not interchangeable—as I will show in (6)—because they imply different things about their context. (5A) is a straightforward answer to (5Q), but (5B) and (5C) implicate that there are other relevant questions: about more foods in (5B) and about more actions, other than eating, for (5C). These implied questions are indicated by the prosodic marking of topics, as shown in the figures below.

- (5) Q: *Kai ta maroulia poios ta efage?*  
 and the lettuces-acc who them ate-3s  
 “And who ate the lettuce?”
- A. [*o MANOLIS*]<sub>Focus</sub> [*ta efage ta maroulia*]<sub>Tail</sub> S cl-V O  
 the Manolis them ate the lettuces-acc
- B. [*ta maroulia*]<sub>Topic</sub> [*o MANOLIS*]<sub>Focus</sub> [*ta efage*]<sub>Tail</sub> O S cl-V  
 the lettuces-acc the Manolis them ate
- C. [*ta efage*]<sub>Topic</sub> [*o MANOLIS*]<sub>Focus</sub> [*ta maroulia*]<sub>Tail</sub> cl-V S O  
 them ate the Manolis the lettuces-acc

In all three answers above, the subject *o Manolis* carries a focus pitch accent (L+H\*), because it corresponds to the wh-element in the question, and it is followed by post-focal de-accenting. Sentence (5A) has SVO order and everything except the subject is de-accented, forming the *tail*. The prosodic realization of this utterance is shown in Figure 3.

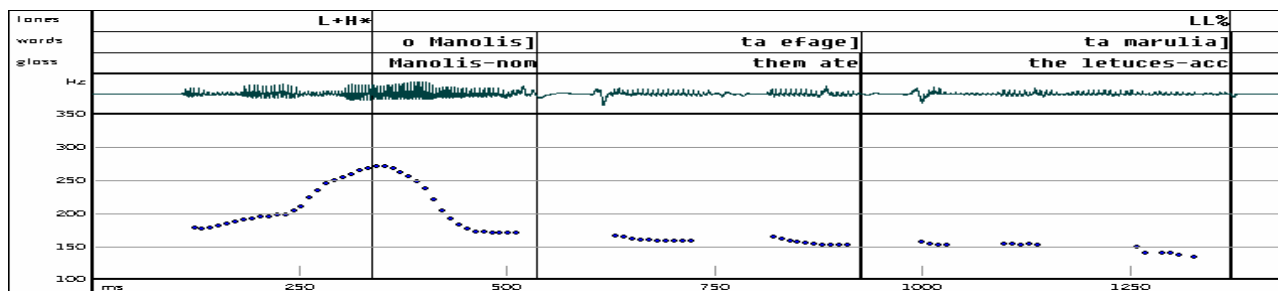


Figure 3. S cl-V O answer of the question in 5Q.

In (5B) the object appears to the left of the subject and the verb is final, as shown in Figure 4. The object, *maroulia*, forms the topic phrase with a L\* Nuclear Pitch Accent (NPA) and a H<sup>-</sup> boundary. The unaccented clitic-doubled verb forms the tail.

<sup>2</sup> In Baltazani (2002) I show that tails must contain given information only in affirmative sentences.

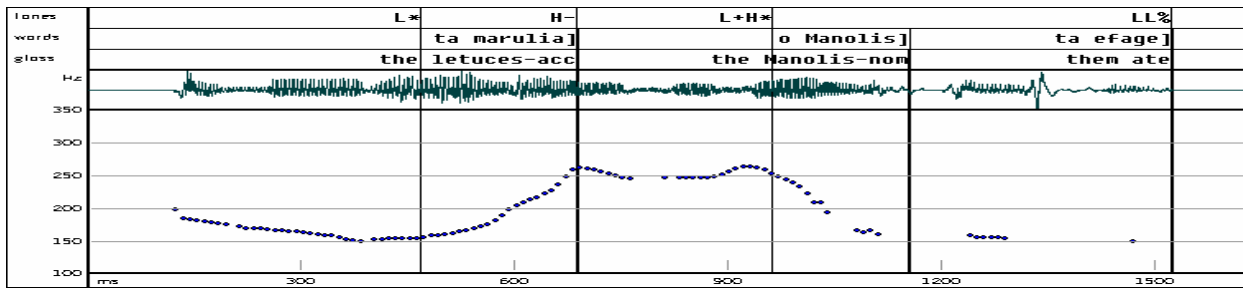


Figure 4. O S cl-V answer of the question in 5Q.

In (5C), the verb is the topic and the object is the tail, as shown in Figure 5.

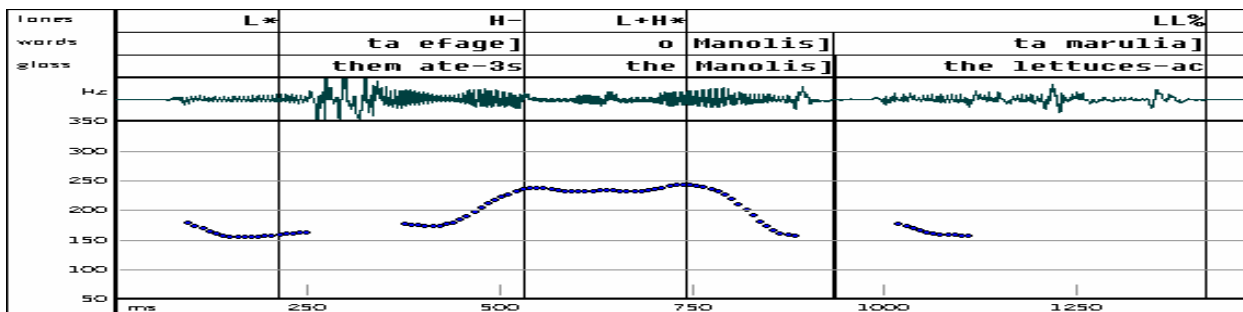


Figure 5. cl-V S O answer of the question in 5Q.

The examples in (6) show a context in which two of the three word orders presented in (5) are inappropriate. (6Q), ‘And who ate the veggie dishes?’, is a super-question to that in (5Q) (cf. Roberts, Büring).

- (6) Q: *Kai ta diafora piata me ta laxanika poios ta efage?*  
 and the various dishes with the veggies who them ate  
 ‘And who ate the veggie dishes?’
- A. # [o MANOLIS]<sub>F</sub> [ta efage ta maroulia]<sub>Tail</sub>  
 the Manolis-nom them ate-3s the letuces-acc
- B. [ta maroulia]<sub>Topic</sub> [o MANOLIS]<sub>F</sub> [ta efage]<sub>Tail</sub>  
 the letuces-acc the Manolis-nom them ate-3s
- C. # [ta efage]<sub>CT</sub> [o MANOLIS]<sub>F</sub> [ta maroulia]<sub>Tail</sub>  
 them ate-3s the Manolis-nom the letuces-acc

(6A) is infelicitous because the object *ta maroulia* is in the tail without having been mentioned in the context, i.e., new. New material cannot be in the tail in affirmative sentences in Greek. For the same reason, the answer in (6C) is inappropriate too. (6B) is the only appropriate answer: the object *ta maroulia* is topic marked and this prosodic marking indicates that the speaker is following a ‘dish by dish’ strategy of answering the question in (6) and her answer implies there are other relevant dishes in the discourse. Crucially, the material in the topic phrase counts as given in the discourse even though it has not been previously mentioned (cf. “accessible topics”, Chafe 1974). By topic-marking a phrase, the speaker both introduces the topic and she also retro-actively declares it part of the background for her own utterance by implying an unspoken but understood question which contains that topic material. This is the difference between topics and tails: though both contain given material, tails can only contain *explicitly* given material (cf. “textually accessible” information, Prince 1981).

### 3. Conclusion

In summary, I have shown that the Information Structure of a sentence is crucial in determining which word orders of that sentence are appropriate in a discourse. Therefore semantic and syntactic analyses of word order patterns should be done taking into consideration the contexts the patterns are appropriate for, otherwise the resulting analysis is incomplete.

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