

**“The Geometry of  
Tense, Mood and Aspect  
in Greek”**

**by**

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is not enough to express my gratitude to the people who supported and encouraged me the most in the course of this hard, but unforgettable year.

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## Chapter 0 Introduction

This paper investigates the inflection of the Greek verb from a feature geometric perspective. In feature geometries or dependency structures the features are connected through entailment relations. We focus on a morphosemantic approach of a feature geometric INFL, proposed by Cowper (2005), where INFL hosts a small set of monovalent interpretable features. These are assumed to be universal, and are divided into three groups of mood, tense and aspect features. Our purpose is to propose the corresponding Greek INFL, by looking at the properties of the verb and its parts, the features that they spell out, and the ways that these features are organized into syntactic projections.

Greek differs in many aspects from English and Spanish. The intrinsic entailment relations between the features must and will be the same, but we will show that their extrinsic relations are different. This conclusion opens up different possibilities for the structural position of the features. Mood features are higher in the structure, in the CP system, while aspect and tense, as well as the single syntactic feature, finite, are lower, in the IP system. Thus, the presence of the CP and its interaction with the IP system will prove to be of great importance to the interpretation of a Greek clause. Eventualities will be slightly different, too. While English overtly marks the imperfective aspect, in Greek it is the perfective aspect that is overtly marked. The distinction between the perfective, on the one hand, and the imperfective or stative interpretation on the other pervades the whole tense system, distinguishing between the marked perfective forms and those that are ‘unmarked’ and used for imperfective events or states. The perfect tenses in Greek will be similar to the English perfect tenses, in that the Greek perfect tenses will have a bi-clausal structure, too.

We will see that this feature-geometric approach elegantly accounts for the cross-linguistic variation that arises, bringing to light some interesting properties of Greek,

which we will attempt to account for within this framework, as well as that of Distributed Morphology and Minimalism.

The structure of this work then is organized as follows: In Chapter 1 we briefly look at the Feature Geometry of INFL for English and Spanish as proposed by Cowper. Chapter 2 constitutes a description of the Greek tense system; and in Chapters 3 and 4 we focus on features of viewpoint aspect and tense respectively, and show how these are encoded in Greek. In Chapter 5 we discuss Mood features, and we consider the Greek subjunctive and its properties. Finally, in Chapter 6 we propose the feature geometry of the Greek verb and look at the features that appear in each of the tenses.

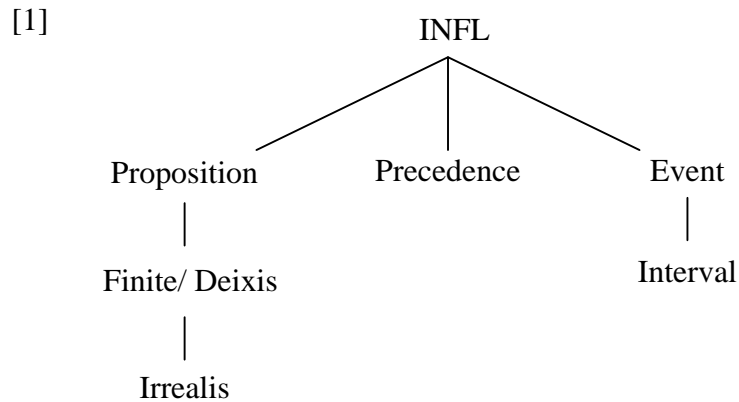
## **Chapter 1      Introduction to Features**

Recently it has been argued that morphosyntactic features are bundled together into dependency structures, or feature geometries (Cowper 2002, 2003, 2005; Harley and Ritter, 2002, Harley 1994). These features are monovalent, i.e. a feature will appear in the structure only if it has a positive value, and will be dependent upon a root node. The relation between two features is an entailment relation, in that a feature may appear in the structure only if its dominating node is also present in the structure. The absence of a feature triggers the default interpretation of the node dominating that feature. Harley and Ritter (2002) indicate the default interpretation of a node by underlining, while for Cowper (2002, 2003, 2005) the default interpretation is not overtly indicated. In Feature Geometries markedness is encoded via a node-counting metric, which means that the more marked a feature combination is, the more nodes will be required.

### **1.1 The Feature Geometry of INFL**

We will focus here on the Feature Geometry of INFL, as proposed by Cowper in 2005, and earlier. Specifically, we will briefly review what the features of INFL are, how they are connected, and by which morphemes they are spelled out in the two languages Cowper discusses, i.e. English and Spanish.

Following Distributed Morphology and Minimalism, Cowper proposes that INFL consists of a small universal set of interpretable features which are assumed to be monovalent. These are organized as follows: (a) Mood features, consisting of IRREALIS, DEIXIS, FINITE and PROPOSITION; (b) Narrow Tense, consisting of PRECEDENCE and ENTIRETY; and (c) Viewpoint aspect features, consisting of EVENT, and INTERVAL. The figure in [1] is the proposed Feature Geometry for INFL (2002):



Cowper (2002, 2003) uses INFL simply as a label to host all of these features which make up the inflectional complex. These features have syntactic or semantic content, and are spelled out by certain inflectional morphemes. As mentioned, they are connected by entailment relations. INTERVAL for instance, entails the presence of EVENT. In the absence of EVENT, INTERVAL will not be present, and the clause will receive a stative interpretation. In the following section we outline the meanings that these features convey.

### 1.1.1 Definition of the features and entailment relations

Cowper (2005) gives an informal semantic definition of the features (see Cowper & Hall 1999, and subsequent work for a formal definition of the features).

#### MOOD FEATURES

**PROPOSITION:** This feature appears in all main clauses, and certain subordinate ones. A clause with the feature PROPOSITION denotes a cognitive manifestation of an event or state. A clause lacking PROPOSITION is interpreted as a bare event or state, which can be perceived only in the sensory sense. In English for instance, the embedded clause in (1a) will denote a bare EVENT, while the one in (1b) denotes a PROPOSITION:

- (1a) We saw [Mary reading the book] (no cognitive reading available).
- (1b) We saw [that Mary was reading the book].

(Cowper, 2003)

(1b) means that we came to be aware of the truth of the proposition *Mary was reading the book*. In other words, the embedded clause has a cognitive reading. In contrast, no cognitive interpretation is available for the embedded clause in (1a). The only reading available is that we visually perceived the event of *Mary reading the book*.

**FINITE:** This feature has purely syntactic content. It licenses structural case on the subject and  $\phi$ -features on the verb. It is a dependent of PROPOSITION, which means that all finite clauses, either main or embedded, will be propositional. Thus, the embedded finite clause in (1b) must also be propositional. The feature FINITE is also present in the subjunctive mood. The difference between the subjunctive and the indicative moods lies in the feature DEIXIS, which is present in indicative, but absent in subjunctive clauses (Cowper, 2003).

**DEIXIS:** is a dependent of FINITE and a deictic clause will therefore necessarily be finite, and propositional. DEIXIS corresponds to a property of realisness. Its role is to index the proposition to the deictic center of the utterance; that is, to the speaker and the moment of speech. DEIXIS consists of TEMPORAL and PERSONAL DEIXIS. TEMPORAL DEIXIS (or T-DEIXIS), a dependent of FINITE, sets the temporal anchor of the clause to the moment of the speech. Depending on the degree of temporal independence of a clause Cowper (2005) distinguishes three groups of clauses: (a) *temporally transparent clauses*, which are required to have the same time reference as the main clause they are embedded in; (b) *temporally relative clauses*, which may have a distinct time reference from that of the clause they are embedded in, but which are computed with respect to the higher clause; (c) and *temporally deictic clauses*, whose time reference is computed with respect to the moment of speech. The Spanish subjunctive for instance, is shown by Cowper to be temporally deictic, while the French subjunctive is temporally relative. PERSONAL DEIXIS (or P-DEIXIS) indexes the clause to the speaker at the moment of the speech. P-DEIXIS is a dependent of T-DEIXIS which means that a propositional clause with PERSONAL DEIXIS

cannot lack TEMPORAL DEIXIS, while a temporally deictic clause may lack PERSONAL DEIXIS. A clause containing both T- and P-DEIXIS is said to be fully deictic.

IRREALIS: This feature is the most marked dependent feature of PROPOSITION. In English it is spelled out by the modal verbs. When this feature is present, the proposition denoted by the clause may bear one of the two modal relations to the speaker's beliefs: either it follows from the speaker's beliefs, as with the modals *will*, *must* and *should*; or it is compatible with the speaker's beliefs, in which case we have the modals *may* and *can*<sup>1</sup>.

#### NARROW TENSE

PRECEDENCE: is a dependent of INFL. The presence of this feature will place the clause temporally prior to its temporal anchor. It signifies that at least one moment of the event or the state denoted by the clause precedes the temporal anchor. PRECEDENCE is used to refer to *past* but also to a particular tense form. This feature is spelled out in English by the finite past tense marker *-ed*, or the past participial suffix *-en*. In the absence of PRECEDENCE the clause will be interpreted as simultaneous with its temporal anchor (Cowper, 1999a, 2005).

#### VIEWPOINT ASPECT

EVENT: According to Cowper (1999a, 2003, 2005) EVENT is the marked member of the event/state opposition, though it is not licensed, at least in English or Spanish, by any particular morpheme. Any non-progressive clause can be interpreted as either stative or eventive, although there are lexical verbs or certain modifiers that favour one of the two interpretations:

- (2a) Fritz wore a school uniform as a child. (stative)
- (2b) Fritz wore a school uniform *twice this week*. (eventive)

(Cowper, 2003)

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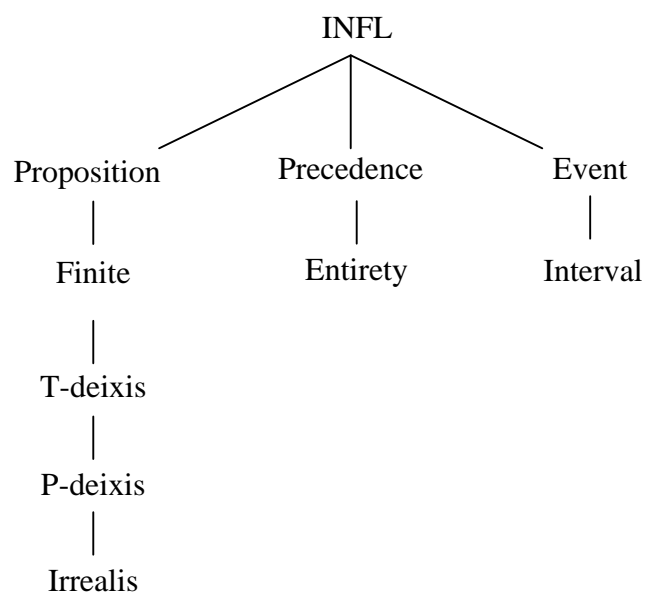
<sup>1</sup> See Hall (2001) for a formal treatment of the feature IRREALIS.

In general, events differ from states in that states lack the temporal properties that events have. Events “are linked to a (possibly singleton) set of moments” (Cowper, 2005). Since it is not always obvious whether we are dealing with a stative or eventive clause Cowper uses three diagnostics: (a) events receive a habitual, reportive or generic interpretation in the simple present in English; (b) stative clauses are ill-formed in the progressive, or else they must have an eventive interpretation (for ex. *Cora is being sick*); and (c) a stative clause containing a verb cannot appear as the bare infinitival complement of a perception verb (Cowper 2005).

INTERVAL: is a dependent of EVENT. It specifies the event as linked to nonsingleton set of moments, rather than to a single moment. It corresponds to the imperfective viewpoint aspect, and its presence entails that the clause is eventive and not stative. In English this feature is spelled out by the morpheme *-ing*. If a language makes use of this feature, as English does, a bare Event node will receive a default interpretation of perfective viewpoint aspect.

ENTIRETY: For Spanish Cowper (2005) proposes a dependent of PRECEDENCE, the feature ENTIRETY. In contrast to PRECEDENCE, this feature requires that all moments of the event or state precede the temporal anchor of the clause. This feature has an effect that corresponds to perfective viewpoint aspect, except that it appears in Spanish with both events and states, and in the past tenses only. It therefore must be a dependent of PRECEDENCE, rather than EVENT. In sum, the maximal dependency structure for INFL is the one in [2]:

[2]



Assuming a version of Distributed Morphology these formal features are assembled into Lexical Items, which enter into syntactic computation. The Vocabulary Items that spell them out are then inserted post-syntactically (Halle and Marantz, 1993), in a cyclic manner (Bobaljik, 2000, Cowper and Hall, 2002). The underspecified Vocabulary Item that spells out the largest subset of features of a given structure is the one that will be inserted.

This mechanism will be crucial when dealing with the Greek tense system. In the following section it will be shown what the Greek tenses are, what they mean, as well as the elements the verb consists of (Chapter 2). This will determine what features the different morphemes may spell out, and how these must be organized in a syntactic structure (Chapters 3, 4, and 5). In the same chapters, we will also see in detail how vocabulary insertion works, and what its effects are in Greek.

## Chapter 2      The Greek Tenses and the Verbal System

In this chapter we discuss the Greek tense forms, show how they are formed and what they mean. We will then break them up into component parts, which will determine what features they spell out.

There are two major classes that distinguish the Greek verb. The first class consists of regular verbs, and the second class consists of the so-called contracted verbs. The contracted verbs are traditionally divided into some further subclasses, with a Theme vowel for each subclass in some tense forms. The Th-vowel is usually contracted with the initial vowel of the verbal ending<sup>2</sup>. In the past tenses the Theme vowel is the same for all subclasses<sup>3</sup>, while in the present tense this varies depending on the features of the following first vowel of the verbal ending. There are several sets of personal endings, the choice depending on the voice (active or passive<sup>4</sup>) and the tense (present or past) of the verbs. There are two verbal stems usually referred to as the present and the past stems. In addition, there is a prefix, called the verbal augmentation and often realized as *e-*<sup>5</sup> found in the past tenses, before the verbal stem (and after a preverbal preposition, if present). To conclude, so far the elements that make up the verb are the following:

(Verbal augmentation <i>e-</i> )	Verbal stem (present or past)	(Th-Vowel)	Verbal endings (present or past)
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We will now proceed to the description of the Greek tense system, focusing on the active voice only.

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<sup>2</sup> The contraction between the theme vowel + vowel of the verbal ending is phonologically determined. While in the present tense this is more complicated, in the imperfect tense the result is always a [+high, +back] vowel, while in the aorist, the Greek past tense, we always result with a [+high, +front] vowel.

<sup>3</sup> This is the case for the active voice.

<sup>4</sup> The middle and the passive voice used to be distinct, until they fused to one voice.

<sup>5</sup> The so-called verbal augmentation is inserted only if the verb consists of two syllables or less.

## 2.1 The present tense

The present tense is formed by the so-called present stem of the verb, the Th-vowel, if the verb is contracted, and the present endings. In table (1) we can see in detail the verbal paradigm for the regular verb  $\Delta\text{ia}\cup\text{vaz}$  (read) of class (I) and the contracted verb  $\text{mele}\cup\text{to}$  (study) of class (II):

(1) Present		Class I	Class II <sup>6</sup>
		$\Delta\text{ia}\cup\text{vaz}$ - + pres. endings	melet- + Th-V + pres. endings
Singular	1 <sup>st</sup>	$\Delta\text{ia}\cup\text{vaz}$ - o	melet- ( $\cup\text{a}$ ) $\cup\text{o}$
	2 <sup>nd</sup>	$\Delta\text{ia}\cup\text{vaz}$ - is	melet- $\cup\text{as}$
	3 <sup>rd</sup>	$\Delta\text{ia}\cup\text{vaz}$ - i	melet- $\cup\text{a}$ (-i)
Plural	1 <sup>st</sup>	$\Delta\text{ia}\cup\text{vaz}$ - ume	melet- $\cup\text{ame}$
	2 <sup>nd</sup>	$\Delta\text{ia}\cup\text{vaz}$ - ete	melet- $\cup\text{ate}$
	3 <sup>rd</sup>	$\Delta\text{ia}\cup\text{vaz}$ - un	melet- $\cup\text{un}$

The present tense may correspond in meaning to either the English simple present or the present continuous:

- (1)  $\text{Ta pe}\Delta\text{ia}$   $\text{pez- un}$ .  
 The.pl child.pl play - 3pl.pres(ent ending).  
 The children play/are playing.

This sentence can be either translated as: *the children are playing*, meaning at this moment, or *the children play* in general. The imperfective or stative interpretation of a sentence in the present tense will be determined by the context. Thus, the present tense can be used to convey meanings conveyed by the English present continuous, i.e. imperfective viewpoint aspect (Interval). As we can see this is not marked by a particular

<sup>6</sup> Notice the stress alternation between Class I and Class II. In Class II the stress favors the theme vowel, unless this is deleted, as in the 1<sup>st</sup> person singular, where no contraction taking place.

morpheme unlike English. The present is also used to express meanings conveyed by the English present simple, i.e. to denote a state.

## 2.2 The imperfect (or preterit)

The imperfect is formed by the present stem, the Th-vowel if the verb belongs to the second class, and the past endings. The verbal augmentation can also occur in this tense. The past endings are distinct from the present endings, and appear only in the past tenses, such as the imperfect, aorist, and the past perfect. This tense is marked with the same Theme vowel -u- for all subclasses of contracted verbs. The vowel -u- is not contracted with the initial vowel of the personal endings. The resulting hiatus is resolved by the insertion of -s-<sup>7</sup>:

(2) Imperfect		Class I	Class II <sup>8</sup>
		Δiavaz- + past endings	melet- + Th-V + -s- + past endings
Singular	1 <sup>st</sup>	∪Δiavaz- a	melet- ∪u- s- a
	2 <sup>nd</sup>	∪Δiavaz- es	melet- ∪u- s- es
	3 <sup>rd</sup>	∪Δiavaz- e	melet- ∪u- s- e
Plural	1 <sup>st</sup>	Δia∪vaz- ame	melet- ∪u- s- ame
	2 <sup>nd</sup>	Δia∪vaz- ate	melet- ∪u- s- ate
	3 <sup>rd</sup>	∪Δiavaz- an	melet- ∪u- s- an

The meanings of the imperfect seem to parallel the present tense. It is used for meanings conveyed by the English past continuous, i.e. with imperfective viewpoint aspect, as well as for states expressed in English by the simple past:

- (2) Panta            *i-kser-e*                            tin    aliθia.  
 Always            aug-know-3s.pst (past ending)            the.acc truth  
 S/he always knew the truth.

<sup>7</sup> Note that the Theme vowel in the passive behaves differently. We will not account for this here though.

<sup>8</sup> As we can see in the second class the stress is always on the Th-vowel, while in the first class it follows the trisyllabic law.

- (3) *Taktopi-u-s-a*                      tis                      simiosis oli mera exθes.  
 organize-Th.vowel-s-1s.pst    the.pl.acc              note.pl all day yesterday  
 I was organizing my notes all day yesterday.

In example (2) the imperfect denotes a state, in that *s/he was in the state of always knowing the truth* and is translated by the English past simple. In example (3) the imperfect denotes an imperfective event, corresponding in meaning to the English progressive past. Thus, the imperfect, just like the present, can express either imperfective viewpoint aspect, i.e. Interval, or a state.

## 2.3 The future tenses

There are two future tenses in Greek, both of them formed periphrastically, by the futurate particle  $\theta a^9$  plus the verb, which immediately follows  $\theta a$ . The two verb stems – traditionally called the present stem and the past stem- form the basis of the two future tenses, traditionally called *future continuous* and *future simple*.

### 2.3.1 The future continuous

The future continuous is formed with the present stem, plus the present endings, which essentially gives  $\theta a + \text{present tense}^{10}$ . The event types that this tense may describe are the same as those expressed by the present tense, i.e. an imperfective Event or a state:

- (4)  $\theta a$     *perimen-i*    olo    to                      apo⊗evma    sto    ma⊗azi.  
 Fut.    wait -3s.pres    all.acc    the.acc                      afternoon              at-the    shop  
 He will wait/be waiting the whole afternoon at the shop.

- (5)  $\theta a$     *ton*    *a⊗ap-a-i*                                      ⊗ia panta.  
 Fut.    him    love -Th.Vowel- 3s.pres                      for ever  
 S/he will love him for ever.

<sup>9</sup> See Chapter 5 for more on this particle.

<sup>10</sup> For the verbal inflection of the present see the verbal paradigm, section 2.1.

This tense can also have an epistemic meaning:

- (6) ο                    ⊗ior⊗os      θα      είναι                    στο τηλέφωνο.  
 The.nom          George.nom    fut.    be-3s.pres.    on-the phone  
 George will be on the phone. (now)

### 2.3.2 The future simple

The future simple is formed by *θα* + past stem + present endings. This stem is called past stem, as it is used to form the aorist. The past stem will be either a regular stem plus the insertion of consonant *-s-* or *-r-* at the end of the stem, or irregular. With verbs of the second class the Th-vowel of the future simple is *-i-*, in contrast to the high, back theme vowel of the imperfect:

(3) Future simple		Class I	Class II
		θα + Διαυvas- + pres. endings	θα + melet- + Th-V + -s- + pres. endings
Singular	1 <sup>st</sup>	θα Διαυvas-      ο	θα melet-      υi-      s-      ο
	2 <sup>nd</sup>	θα Διαυvas-      is	θα melet-      υi-      s-      is
	3 <sup>rd</sup>	θα Διαυvas-      i	θα melet-      υi-      s-      i
Plural	1 <sup>st</sup>	θα Διαυvas-      ume	θα melet-      υi-      s-      ume
	2 <sup>nd</sup>	θα Διαυvas-      ete	θα melet-      υi-      s-      ete
	3 <sup>rd</sup>	θα Διαυvas-      un	θα melet-      υi-      s-      un

In contrast to English, the Greek future simple can only express the perfective viewpoint aspect, and not an imperfective one or a state. Normally stative verbs like *αγαπο* (*love*) take on an eventive, inchoative meaning in the future simple:

- (7) θα      τον      αγαπισ-ι    molis    τον      Δι.  
 Fut.    him    love.pa(st stem)-3s.pres                                    when    him    see.pa-3s.pres

S/he will fall in love with (/love) him the moment s/he lays eyes on him.

This sentence is best interpreted as *s/he will fall in love with him the moment s/he lays eyes on him*. Compare this example to the sentence in (5) with the future continuous, where only a stative interpretation is possible. It seems then that the future simple forms the perfective counterpart of the future continuous in Greek. The future simple is eventive, and in particular perfective, while the future progressive is unmarked for imperfective Events or States.

## 2.4 The aorist

Unlike the periphrastic future tenses, the aorist comprises a single word. It consists of the past stem, plus the past endings. As mentioned, the past stem, if regular, is formed by the present stem of the verb plus the insertion of *-s* or *-r* at its end. Like in English, if the stem is ‘irregular’, it is phonologically conditioned or suppletive. The Th-vowel is *-i-*, as in the future simple. The verbal augmentation also appears, if the verb is bi- or monosyllabic:

(4) Aorist		Class I		Class II					
		$\Delta$ iavas-	+	past endings	melet-	Th-V	+ -s-	+	past endings
Singular	1 <sup>st</sup>	$\cup\Delta$ iavas-		a	melet-	i-	s-		a
	2 <sup>nd</sup>	$\cup\Delta$ iavas-		es	melet-	i-	s-		es
	3 <sup>rd</sup>	$\cup\Delta$ iavas-		e	melet-	i-	s-		e
Plural	1 <sup>st</sup>	$\Delta$ ia $\cup$ vas-		ame	melet-	$\cup$ i-	s-		ame
	2 <sup>nd</sup>	$\Delta$ ia $\cup$ vas-		ate	melet-	$\cup$ i-	s-		ate
	3 <sup>rd</sup>	$\cup\Delta$ iavas-		an	melet-	$\cup$ i-	s-		an

With respect to its meaning, the aorist seems to correspond to part of the semantic range of the English simple past, only in its perfective aspect. Like the future simple, the aorist has only an eventive interpretation, and specifically a perfective one, either telic or inchoative:

- (8) Ta peΔia Δiavas-an ta maθimata tus.  
 The.pl child.pl study.pa-3pl.pst the.pl course.pl their  
 The children studied for their courses (eventive).  
 # The children used to study for their courses.

This clause cannot receive the stative interpretation. Similarly, (9) and (10) can only receive a perfective interpretation:

- (9) O ⊗ior⊗os (molis) efi ⊗e.  
 The.nom George.nom (just) leave.pa-3s. pst  
 George has (just) left (eventive).  
 # George used to leave (stative).

- (10) Ton a⊗apise molis ton iΔe.  
 him love.pa-3s.pst as soon as him aug-see.pa-3s.pst  
 S/he loved (in the sense *s/he fell in love with*) him the moment s/he saw him.  
 (inchoative)

Just as the future simple forms the perfective counterpart of the aspectually unmarked future progressive, the aorist forms the perfective counterpart for the aspectually unmarked imperfect tense.

## 2.5 The perfect tenses

As in most Indo-European languages the perfect tenses in Greek are formed periphrastically. One difference between Greek and most other languages is that the form more frequently used with the auxiliary is the infinitive and not the participle. It is worth mentioning that the infinitive is formed with the past stem and an infinitival ending. The infinitive is never used on its own, and cannot form a clausal complement. It only appears after the auxiliary *have*. In Greek there are three perfect tenses: the present, past and future (present and past/conditional) perfect. We will not provide an analysis of the future

perfects; we will only mention that these are formed by the present/past perfect, with the futurate particle *θa* preceding those. The future tenses correspond in meaning to the English ones (will have/ would have + participle).

### 2.5.1 The present perfect

The present perfect is used to assert the completion of an event or a state. It is composed of the present tense of the auxiliary *eho* (have) in the active voice, or *ime* (be) in the passive, and the infinitive or the passive participle for either voice. The passive participle consists of an archaic perfect stem, a passive infix, and the adjectival endings:

Active:	have (pres)	Infinitive	(past stem + inf(initial) ending)
Passive:	be (pres)	/Passive participle	(perfect stem +adj(ectival) ending)

When the present perfect utilizes the infinitive the interpretation that the clause receives is different from that with the participle. This is expected though as the infinitive is formed with the stem of the aorist while the participle is formed with the archaic perfect stem. We will not delve into this further here as we will deal with the properties of aspect and tense of the perfect tenses in chapter 4:

#### Have + infinitive

- (11) *Eh-i*                                      *anaps- i*                                      ta                      fota.  
 Have -3s.pres                                      turn-on.pa-inf.                                      the.pl    light.pl.  
 S/he has turned the lights on.

#### Have + passive participle

- (12) *Eh-i*                                      *anamen-a*                                      ta                      fota.  
 Have -3s.pres                                      turn-on.perf.pass-pl.nom                                      the.pl, nom light.pl.nom.  
 S/he has the lights on.

As we can see from the translations, in contrast to example (11), example (12) seems to express a kind of stative interpretation. In terms of agreement, we can also see that the passive participle agrees with the object and not with the subject.

### 2.5.2 The past perfect

The past perfect is formed similarly. The only difference from the present perfect is that the auxiliary is in the imperfect tense:

Active:	have	(imp)	Infinitive	(past stem + inf(initival) ending)
Passive:	be	(imp)	/Passive participle	(perfect stem +adj(ectival) ending)

The same examples in (11) and (12) in the present perfect will be in the past perfect as follows:

#### Have + infinitive

- (13) *Ih-e*                                      *anaps-i*                                      ta fota.  
 aug-have -3s.pst                      turn-on.pa-inf.                      the.pl light.pl  
 S/he had turned the lights on.

#### Have + passive participle

- (14) *Ih-e*                                      *anamen-a*                                      ta                                      fota.  
 aug-have -3s.pst                      turn-on.perf.pass-pl.nom                      the.pl.nom                      light.pl.nom.  
 S/he had turned the lights on/ s/he has the lights on.

This tense seems to correspond in the meanings conveyed by the English past perfect, with subtle differences between the infinitive and the passive participle. We will discuss these differences in chapter 4.

## 2.6 Conclusions

In this section we briefly discussed the verbal tense system. We presented a verbal paradigm in most of the tenses, and showed what the Greek tenses are and what they mean. We specifically showed that the present tense corresponds in meaning to the English present simple or continuous; the imperfect is found to correspond in meaning to the English past simple (for states) or past progressive (for imperfective events), and the future continuous to the English future continuous (for imperfective events) or simple (for states). It is shown that all of these tenses can denote either an imperfective event or a state, without being marked by any particular morpheme. All of them seem to have something in common, which determines the interpretation that the clause receives: they all use the present stem, which will be combined either with the present or past endings (plus the futurate marker) to form these tenses.

We also showed that the future simple partially corresponds in meaning to the English future simple, and the aorist also partially to the English simple past. Neither of these two tenses though can receive a stative interpretation<sup>11</sup> in contrast to English. The Greek future and past simple also have something in common, which may explain their similar meanings in viewpoint aspect: both of them use the past stem, plus the present or the past endings (plus *θa* for the future).

Simplifying the conclusions we have so far regarding the formation of these tenses, we have the following morphemes, which build the verb:

(5) The pieces		Present endings	Past endings
(Fut. <i>θa</i> )	<b>Present stem</b>	Present, Future continuous	Imperfect
	<b>Past stem</b>	Future Simple	Aorist

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<sup>11</sup> nor can the infinitive, which we will discuss in sections 3, and 4.

The perfect tenses are also formed in a similar way, but are more complex due to the presence of the auxiliary<sup>12</sup>. In the following sections we will deal with these pieces and show that they play a decisive role in the interpretation of the Greek clause.

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<sup>12</sup> See Appendix for a detail description of all the verb forms and by which morpheme combinations they result.

## Chapter 3      Viewpoint aspect

### 3.1 State and Event

In this section we will provide a more detailed discussion of the aspectual properties of the tenses, and specifically of the particular morphemes that make up these tenses. In Chapter 1 we assumed that a clause can be interpreted either as eventive or stative. When the feature EVENT is absent, the clause will be interpreted as stative. EVENT does not correspond in English to any particular morphological element, but events appear to be more complex than states (Cowper, 2002, 2003, 2005). Events have temporal properties that states lack, in that events are linked to a (possibly singleton) set of moments. It is not always clear though, whether a clause is stative or eventive, especially in the present tense which is not marked with any viewpoint aspect morpheme. To classify a clause as eventive or stative Cowper (2005: 14) utilizes three diagnostics. That is, a clause will be classified as eventive if it must receive a reportive, habitual or generic interpretation in the simple present:

- (1)    a. Sue resembles her sister. (stative)
- b. Anna sits motionless under the clock. (reportive)
- c. Elephants eat peanuts. (generic)
- d. Bill drives a Toyota. (habitual)

We can follow the same analysis for the Greek present tense, as the feature EVENT does not correspond to any morpheme in Greek either, and thus it is not easy to classify a sentence as eventive or stative:

- (2)    Stative
- a.    I Stella *miazi sti mitera tis*.  
      The.nom Stella resemble-3s.pres to-the.acc mother her  
      Stella resembles her mother.

- Eventive:
- b. I                    ⊗ianna Δiavazi            tin        efimeriΔa. (reportive reading)  
 The.nom            Joanna read -3s.pres    the.acc newspaper  
 Joanna reads the newspaper.
- c. I                    ⊗ates Δe        simpaθun        ta skilia. (generic interpretation)  
 The.nom.pl        cat.pl ind.neg like-3pl.pres    the.pl.acc dog.pl.acc  
 Cats don't like dogs.
- d. Ta pedhia        pezun            t'apo⊗evmata stin avli. (habitual interpretation)  
 The.pl child.pl play -3s.pres    the afternoon.pl in-the.acc yard  
 In the afternoons children play in the yard.

We will show that in Greek the problem in distinguishing a stative from an eventive clause arises only with the present stem, which is unspecified for aspect: i.e. it may denote either a state or an event, and specifically an imperfective interpretation. We will henceforth call the present stem the *unmarked stem*. Since the unmarked stem does not indicate whether a clause will be a stative or eventive, we can then apply these tests for the present tense. In addition, since we saw that the unmarked stem is also used in the imperfect and the future progressive, the same tests can be used to determine the aspectual nature of the clause for these tenses, too.

However, we will show that these diagnostics are not necessary for the tenses that make use of the past stem, i.e. the stem of the aorist, such as the future simple, the aorist and the infinitive found in the present perfect. In these cases a clause can never be interpreted as stative, but rather it can only receive a perfective interpretation, either an inchoative or a telic one. We could further use this as a diagnostic to determine whether a clause is stative or not, and if it is eventive, whether it is perfective or imperfective. Consider the following examples:

- (3) Tense forms composed by the unmarked stem:

a. Present tense

- i. Ta peΔia Δiavazun ⊗ia ta maθimata tus.  
the.pl child.pl study -3pl.pres for the.pl course.pl their  
The children are studying/ study for their courses.

This sentence may receive either an eventive interpretation, in that a set of moments is involved, and the event of the children studying for their courses extends over a period of time. It may also receive a stative interpretation, meaning that it is characteristic of the children to study for their courses. The imperfect clause in (3.b.i) can receive only a stative interpretation, and it may mean that the children are still in the state of liking the chocolates:

b. Imperfect

- i. Sta peΔia aresan i sokolates.  
to-the.pl child.pl please -3 pl.pst the.pl chocolate.pl  
The children liked (/ or used to like) the chocolates a lot (stative).
- ii. Ta peΔia etro⊗an tis sokolates.  
The.pl child.pl eat-3pl.pst the.acc.pl chocolate.pl  
The children were eating the chocolates. (imperfective event)

In the future progressive also both a stative and eventive interpretation are possible:

d. Future progressive/continuous

- i. θa ton a⊗apai (⊗ia panta).  
Fut. him love -3s.pres (for ever)  
S/he will love him (for ever). (Stative)
- ii. θa tra⊗uΔai kata ti Δiarkeia olis tis  
sinavlias.  
Fut. sing.3s.pres during all.gen the.gen concert.gen

She will be singing during the whole concert.

In contrast, in the aorist, future simple, as well as the infinitive in the present perfect, which uses the perfective stem, a stative interpretation is not possible:

(4) Tense forms composed by the perfective stem:

a. Aorist

- i. Ton *a@apise*.  
him love.perfv (perfective)-3s.pst  
S/he fell in love with him. (Inchoative)  
# She used to love him. (Stative)

This sentence cannot be interpreted as stative. It receives an inchoative interpretation, and is therefore eventive. In the future simple the stative interpretation is not possible either. It can only have an inchoative reading, even if the parenthetical clause in the sentence below is absent:

b. Future Simple

- ii. θa ton *a@apisi* (molis ton Δei). (Future simple)  
fut. him love.perfv -3s.pres as soon as him see.perfv-3s.pres  
S/he will love him (the moment s/he lays eyes on him). (Inchoative)

Moreover it has to be noted that verbs such as *like* (in ex. 3b), *wait*, or *know* which are considered to be prototypically stative, do not form *any* of the tenses which use the perfective stem. They only form those tenses that make use of the unmarked stem, i.e. the present, imperfect and the future continuous. By hypothesis then they cannot receive a perfective interpretation. The verb *ksero* (*know*) for instance, does not have a form using the perfective stem and thus cannot receive such a meaning. To denote an eventive, and furthermore a perfective interpretation, another verb will be used instead. Thus, for the English sentence below *I have known her*, which may require an eventive interpretation,

a corresponding eventive verb will be used such as a verb for *ἔγνω* (*meet/get to know*):

- (5) Tin eho *ἔγνωσι*.  
her have-1s met.perfv-inf.  
I have known her. (Inchoative interpretation)

When the verb for *know* is used in any of the tenses using the unmarked stem, it is perfectly well-formed and receives a stative interpretation:

- (6) Tin *ἔγνω* ἀπὸ μικροῦ παιδι.  
she.acc know -1s.pres since little child  
I have known her since we were children.

This constitutes further evidence that the distinction between unmarked and perfective stem can be used as another diagnostic to determine whether a clause is stative or eventive.

To conclude, in this section it is shown that the past stem cannot denote a state, but only an EVENT. The unmarked stem, on the other hand, does not indicate whether a clause is stative or eventive. This suggests that in the feature geometry of INFL in Greek, like in English, the feature EVENT will appear as the marked value. In some cases, it is spelled out by the stem of the aorist, i.e. the past stem.

### 3.2 Interval vs Moment

In the previous section we showed that in Greek we have the feature EVENT in the feature geometry of INFL. We will show that EVENT has a dependent feature MOMENT, which gives perfective viewpoint aspect. This is in contrast to the English INFL, where the feature INTERVAL is the marked value that appears as a dependent of EVENT giving imperfective viewpoint aspect.

This proposal is based on the distinction between the unmarked and past stem. It was shown in section 3.1 that states are not morphologically marked. Events on the either hand, can be morphologically marked, when the verbal form uses the past stem. In this case perfective viewpoint is obligatory. I therefore propose that the so-called past stem spells out *MOMENT*, a dependent of *EVENT*. We will thus call the past stem the *perfective stem*, since it spells out an aspectual feature and it also appears in a non-past tense. When the verbal form contains the unmarked stem, and the clause denotes an event, then it has imperfective viewpoint aspect. Thus, the unmarked stem cannot be used to express a perfective meaning (see ex. 7 below), and the perfective stem cannot be used to express an imperfective viewpoint aspect (ex. 8):

- (7) Ehθes to apo⊗evma lamvane to ⊗ramma. (Imperfect tense)  
 Yesterday the evening receive -3s.pst the letter  
 Yesterday s/he was receiving the letter.

This sentence can only mean that a person was iteratively receiving a letter. It cannot be interpreted as referring to a single perfective event. In example (8) below we attempt to force an imperfective reading using the perfective stem, in the place of the unmarked stem. As expected, the clause is unacceptable:

- (8) \*Ehθes milise oli mera sto tilefono. (Aorist)  
 Yesterday talk.perfv-3s.pst all day to-the phone  
 \*Yesterday s/he talked all day on the phone.

In every case, improper use of these two stems gives unacceptability in all tenses. In the simple future we cannot use the unmarked stem to denote a perfective or inchoative meaning either (ex.9):

- (9) \*θα milao avrio sti Ghianna. (Future progressive)  
 Fut. speak -1s.pres tomorrow to- the Joanna

I will talk tomorrow to Joanna.

This sentence can only be grammatical with an adverbial like ‘all day’, with the imperfective reading. The perfective reading is not available either, unless the perfective stem of the verb is used:

- (10) *θα μιλήσω* avrio sti Ghianna. (Future simple)  
Fut. speak.perfv-1s.pres tomorrow to- the Joanna  
I will talk tomorrow to Joanna.

In conclusion, the future simple can only denote a perfective meaning, as it makes use of the perfective stem only. In the future progressive, only a stative or imperfective interpretation, such as below in example (11), is possible, as this tense makes use of the unmarked stem:

- (11) *θα επισκεφτώ* kaθe evΔmaΔa to musio.  
Fut. visit -pass.1s.pres every week the museum  
I will visit the museum every week.

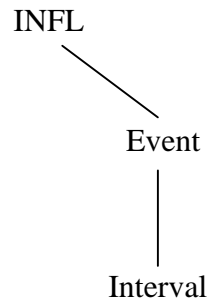
The perfective interpretation is not possible with the future progressive:

- (12) # *θα επισκεφτώ* avrio to mesimeri to musio.  
Fut. visit.perfv-pass.1s.pres tomorrow the noon the museum  
I will visit the museum tomorrow at noon.

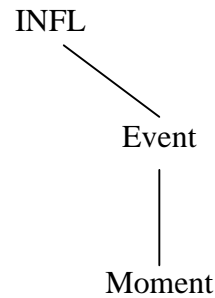
To sum up, it is claimed that the unmarked stem is not marked aspectually and is thus compatible both with states and with events. The perfective stem spells out the feature MOMENT and thus can appear only in eventive clauses with perfective viewpoint aspect. The feature INTERVAL is not used at all in Greek. Consequently, the tenses that use the unmarked stem, such as the present, the imperfect and the future progressive, will express either a state or an imperfective event. On the other hand, the tenses that are formed by

the perfective stem, i.e. simple future and aorist spell out the feature MOMENT. This means that MOMENT, rather than INTERVAL, will appear in the Feature Geometry as a dependent of EVENT. Thus, while in English, INTERVAL is the marked value, and the bare Event node receives the default interpretation of an eventive clause, i.e. perfective viewpoint aspect (figure [1]), in Greek MOMENT will be the marked value as a dependent of Event, and the bare Event node will receive the default interpretation, i.e. imperfective viewpoint aspect (figure [2]):

[1] English



[2] Greek



Before closing this section, we need to account for the non-finite forms that occur in Greek. One of them is the infinitive in the present perfect. As already mentioned, this form is different from the infinitives in other languages, as it appears only in this tense and only with the auxiliary *have*. Moreover, it is formed with the perfective stem, not by the archaic perfect stem. This means then that the infinitive will also spell out MOMENT. The interpretation of the clause then, which contains *have* + infinitive, is that a completed event denoted by the infinitive is dominated by a higher state, which is denoted by the clause containing *have*:

- (13) *Exun perasi iΔi apo to telonio.*  
 Have-3pl.pres drop.perfv-inf already from the custom  
 They have already been at the customs.

The other non-finite form that appears in the present perfect is the passive participle that we also briefly discussed. As mentioned, the participle is not formed by the perfective or the unmarked stem. Instead, it uses an archaic stem that of the old present perfect. What this participle actually denotes, besides other features such as PRECEDENCE that will be discussed in the following section, is a result state:

- (14) Eho vamen-us tus tihous.  
 Have-1s.pres paint.perf –acc.masc.pl the.acc.masc.pl wall. acc.masc.pl  
 I have painted the walls.

This clause is interpreted as the walls are in the state of having just been fresh-painted. In general, this second type of perfect construction occurs less frequently than the periphrastic *have + infinitive*.

In conclusion, in this section it is shown that in Greek there are mainly two stems, which correspond to exactly two viewpoint aspects: the unmarked stem which is used for imperfective viewpoint aspect, and the perfective stem, which spells out MOMENT, i.e. perfective viewpoint aspect. In the tenses that make use of the unmarked stem, i.e. the present, imperfect, and the future simple, EVENT may appear in INFL, with no dependent feature. Such a clause will receive imperfective viewpoint aspect. If EVENT is absent the clause is stative. In the tenses that make use of the perfective stem, i.e. the aorist and the future simple, the feature MOMENT will be present, as the marked value. We compared this to English where we have the reverse case. We briefly discussed the non-finite forms, which are also found to be in accordance with this distinction, with the exception of the participle of the present perfect, which is based on an archaic stem of the present perfect. In the following section we will see what other features these non-finite forms spell out, and we will discuss in more detail the present perfect.

## Chapter 4      Mono-clausal and Bi-clausal Structures

In this chapter we will discuss the feature PRECEDENCE of INFL, and show which morphemes spell it out, and what its effect is on the perfect tenses. For the moment, we simply assume the Mood features, which will be discussed in chapter 5.

### 4.1 Precedence

PRECEDENCE establishes a marked relation between the clause and its temporal anchor. Its presence entails that the clause will be interpreted prior to its temporal anchor. A clause lacking PRECEDENCE will be interpreted as simultaneous with its temporal anchor (Cowper, 2005, 2003). In English this feature is licensed by two morphemes, the finite past tense marker, *-ed*, and the past participial suffix, *-en*. In Greek we will first distinguish between finite and non-finite forms.

Regarding the finite forms, the only morphemes that appear in the past tenses in all verbs and persons are the past endings. Thus, these, similar to the English *-ed*, are the ones that spell out PRECEDENCE. These endings appear only in the imperfect, the aorist, and the imperfect auxiliaries found in the past perfects. The present, future tenses, and the present perfect auxiliary on the other hand, are marked by the present endings.

In a sentence like:

- (1)    I Eva            *plen-i*            to            poΔilato            tis.  
         The Eva            wash -3s.pres    the            bicycle            her  
         Eva is washing her bicycle.

the verb in the present tense is marked by the present ending for the third person, singular. The clause will be interpreted as simultaneous with its temporal anchor, as it will lack PRECEDENCE. In example (2) below though, the clause is interpreted prior to its temporal anchor:

- (2) *Psahn-ame*                   ⊗ia   to    vivlio   oli mera.  
 Search-1pl.pst           for    the    book   all day  
 We were looking for the book all day.

This interpretation is due to the presence of the past endings. While both the present and imperfect make use of the unmarked stem, only the imperfect uses the past endings. With respect to the aorist, it uses the same perfective stem that the future simple uses, but takes the past endings. Thus, an aorist clause containing a verb marked by the past endings must be temporally anterior to its anchor point:

- (3) *Eklehθik-e*                                    proθipur⊗os.  
 Elect.perfv.pass -3s.pst           prime minister  
 He was elected as the prime minister.

Finally, in the past perfect the auxiliaries are also marked with the past endings, in addition to the verbal augmentation e-, which is contracted here with the initial vowel of the auxiliary e- resulting as i-:

- (4) *Ih-e*                                    aposirθi                                    eθelontika apo tis eklo⊗es.  
 aug.have -3s.pst           back-out.perfv-inf.   voluntarily from the elections  
 S/he had voluntarily backed out from the elections.

The verbal augmentation seems at first glance to spell out PRECEDENCE as it appears only in the same tenses as the past endings, i.e. in the imperfect, aorist, and the auxiliaries in the past perfect. In Modern Greek though, it is not required since PRECEDENCE is spelled out by the past endings, and the appearance of the verbal augmentation is prosodically conditioned. The past endings on the other hand, always mark the verb in the past tenses. Thus, we can conclude that it is the past endings, not the verbal augmentation that spells out PRECEDENCE.

Thus, when the verb is marked with the present endings, the clause will be interpreted as simultaneous to its temporal anchor. When the verb is marked with the past endings it will be temporally anterior to its temporal anchor. Thus, the imperfect, aorist, and the auxiliaries in the past perfect which are marked by the past endings, will have the feature PRECEDENCE in their geometries. On the other hand, the present, future, and the auxiliary in the present perfect, which are marked by the present endings, will lack this feature.

The non-finite forms that appear in the tense system are the infinitive and passive participle. The infinitive can only appear with the auxiliary *have* to form one of the perfect tenses, and it functions similarly to the English past participle. As mentioned, it consists of the perfective stem and an infinitival ending. We propose that the infinitival ending is the morpheme that spells out PRECEDENCE. The passive participle used in the perfect tenses is formed by the archaic stem of the perfect tenses. This stem also spells out PRECEDENCE. Thus, the perfect, but *not the perfective* stem, spells out PRECEDENCE. When the participle of the perfect is used in a sentence, it also refers to an event that is completed in the past, similar to the infinitive. Thus, the perfect stem additionally spells out MOMENT, similar to the perfective stem:

Perfective stem	→	MOMENT
Perfect stem	→	PRECEDENCE, MOMENT
Infinitive ending	→	PRECEDENCE
Participial endings	→	$\varphi$ -features (number, gender, and case)

Although the meaning of the infinitival and participial perfect constructions is almost identical, the perfect participle construction receives a slightly different interpretation. Notice below that the perfect construction *have + participle* is not acceptable when it co-occurs with a temporal adverbial (ex.5a) in contrast to the construction *have + infinitive* (ex.5b):

(5a) ?Eho            tis kurtines            kremasmenes            apo to proi.

have-1s.pres the.acc.pl curtain.pl hang.perf-part.pl since the morning  
 I have hung the curtains since morning.

(5b) Eho kremasi tis kurtines apo to proi.  
 have-1s.pres hang.perfv-inf the.acc.pl curtain.pl since the morning  
 I have hung the curtains since morning.

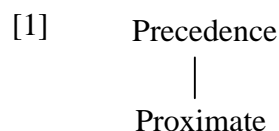
Also, the sentence in (6) implies that the action of eating happened in the recent past:

(6) *Ime fa@omenos.* (be + participle)  
 Be-1s.pres eat.perf.part.masc.nom  
*I am full.*

The interpretation of (6) is that the event of eating occurred recently, and its effect is still evident in the present, receiving an interpretation of recent past. In contrast, with the infinitival perfect in (7) where the event of eating may or may not have been recent, and its effect may or may not still be evident:

(7) *Eho fai.* (have + infinitive)  
 Have-1s.pres eat-perfv-inf  
 I have eaten.

This means that the perfect participle denotes something else that positions the event in the recent past. We suggest thus, that apart from PRECEDENCE, another feature appears in such structures, which we will call *PROXIMATE*, for the recent past. This will appear as a dependent of PRECEDENCE, and will only be spelled out by the perfect participle:

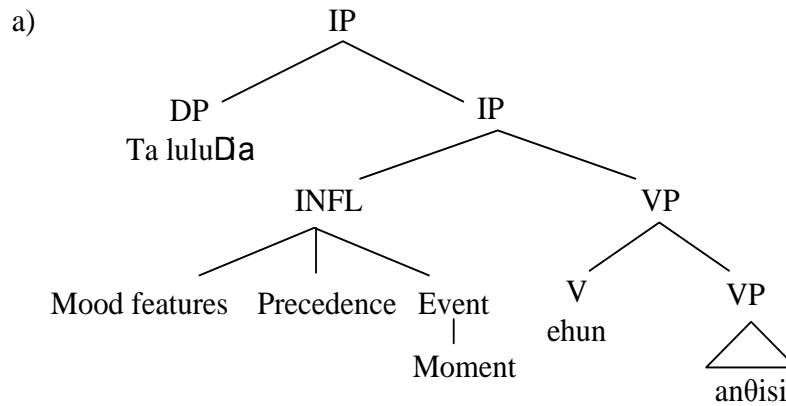


In conclusion, in finite forms the feature PRECEDENCE is spelled out by the past endings. The non-finite forms spelling out PRECEDENCE are the infinitival ending and the perfect stem. Like the perfective stem, the perfect stem additionally spells out MOMENT. It can describe therefore only perfective events, and thus does not appear with normally stative verbs, such as *know*. These conclusions have some crucial consequences for the structure of the perfect tense. Finally, it is suggested that another feature, the feature PROXIMATE, appears as a dependent of PRECEDENCE. PROXIMATE can be present only when the clause is interpreted prior to its temporal anchor, i.e. only when PRECEDENCE is present. This is spelled out by the perfect stem.

## 4.2 Mono- and bi-clausal structures

The conclusions we reached in the previous section raise some important questions regarding the structure of the perfect tenses. We saw that PRECEDENCE may be spelled out by various morphemes. But what happens when more than one instance of PRECEDENCE is accommodated in a clause, such as in the past perfect? That is, we now turn to the question of whether the perfect tenses have mono-clausal structures, consisting of one INFL, or bi-clausal structures, consisting of two instances of INFL. Synthetic tenses, such as the aorist, organize their features in a single INFL consisting of mood, tense and viewpoint aspect features. It could be that the features of INFL for the present perfect are also organized in a single INFL. This would give the structure below:

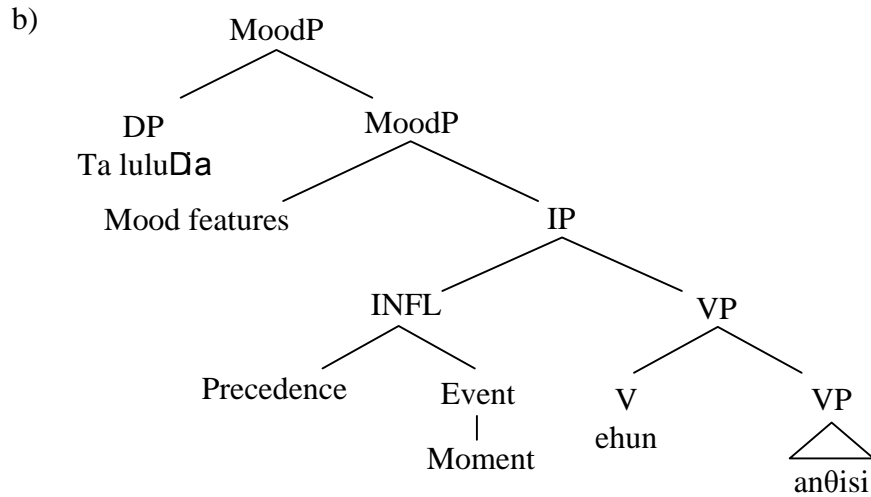
- (8) Ta            luluΔia        ehun            anθisi.  
 The.pl.neutr   flower.pl.neu   have-3s.pres   flower.perfv-inf  
 The flowers have blossomed.



In this structure the feature PRECEDENCE is licensed by the infinitival ending. MOMENT is licensed by the perfective stem of the infinitive. However this structure is identical to that of the aorist, in that the same features are spelled out, i.e. MOMENT by the perfective stem, PRECEDENCE by the past endings, and mood features which we assume for now, all under the same INFL node. This means that when vocabulary insertion applies to this monoclausal IP, nothing will prevent the insertion of the aorist. In fact, the present perfect will be immediately ruled out, as the infinitive of the present perfect only carries tense and viewpoint aspect features, and the aorist spells out all the features of this structure, i.e. mood, tense features, viewpoint aspect features. It follows then that the more specified vocabulary item, i.e. the aorist, will be favored over the less specified infinitive of the present perfect. What is more, this structure does not capture the semantics of the present perfect, in that there is no indication that there is a state involved, expressed by the auxiliary. Thus, this structure does not seem to correspond to the form and meaning of the present perfect.

A second possible structure involves a distinct Mood phrase, which will accommodate the mood features, and in which the auxiliary will be inserted. This will leave PRECEDENCE and *viewpoint aspect* features in INFL, which will be spelled out by the infinitive<sup>13</sup>:

<sup>13</sup> Essentially this structure has been proposed for the German periphrastic present perfect by Kyriakaki (2006), to account for one of the meanings the present perfect may express.

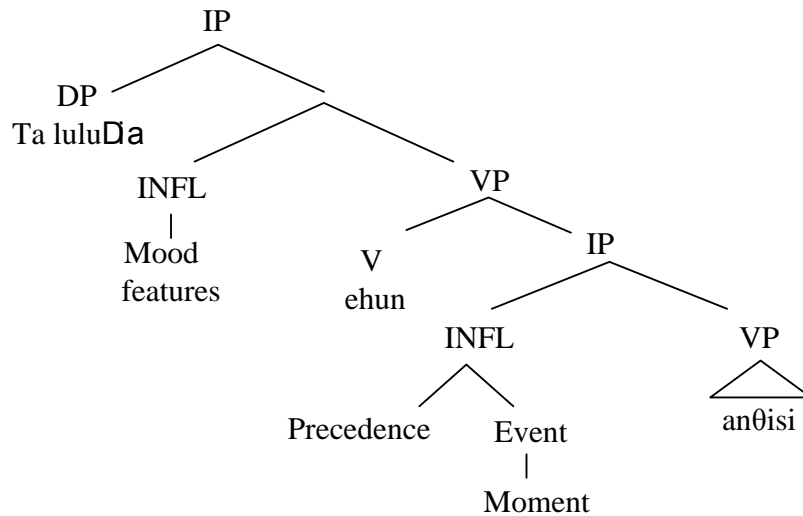


The structure in (b) will favor the insertion of the present perfect and prevent the insertion of the aorist. INFL does not contain any mood features, which means that the aorist will be ruled out. It also means that the infinitive will be inserted first, since it spells out only PRECEDENCE and MOMENT, and then the auxiliary will be inserted which spells out the mood features. Thus, it seems possible that the structure in (b) corresponds to the form of the present perfect *have + infinitive*.

However, the semantics of this tense is not captured by this structure either. Only one aspect is spelled out, i.e. MOMENT, spelled out by the infinitive. The meaning we want to convey though is that the flowers are now in the state of having blossomed at some earlier point, where the stative interpretation is expressed by the auxiliary. The structure in (b) though does not say anything about their current state.

Consequently, we need to suggest a structure where there will be an event, included in a state. To capture this fact, following Cowper (2003, 2001) we can suggest that the Greek present perfect has two IPs, similar to the English present perfect. The structure in (c) can be proposed:

c)

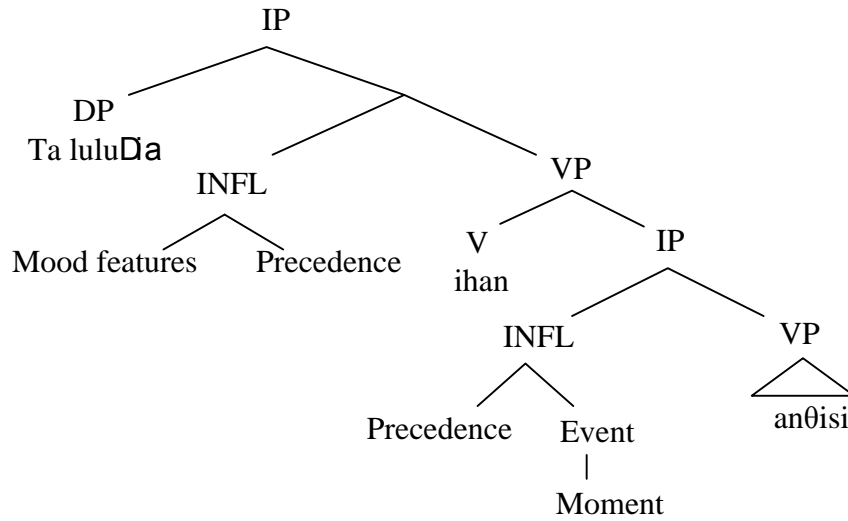


This structure captures the fact that there are two eventualities involved. In the lower IP the presence of MOMENT, EVENT is signified by the presence of the infinitive, while in the higher IP the absence of EVENT entails that the clause containing the auxiliary *have* will be interpreted as stative. More evidence that the present perfect must be bi-clausal will come from the past perfect. Consider example (9):

- (9) Ta luluDia ihan anθisi.  
 The.pl.neutr flower.pl.neutr aug.have-3pl.pst blossom.perfv-inf  
 The flowers had blossomed.

In this clause there are two occurrences of PRECEDENCE: one is spelled out by the past endings on the auxiliary *have*, and the other is spelled out by the infinitival ending. As Cowper suggests though, INFL can only accommodate one instance of PRECEDENCE. Consequently, a second occurrence of this feature will require the presence of a second INFL. This analysis captures the semantics of the past perfect, where the event of the main verb is situated earlier than a reference time, which is in turn earlier than the moment of the speech (Cowper, 2003). It follows then that the past perfect must be bi-clausal. A bi-clausal structure also accounts for the possible occurrence of two viewpoint aspects, a state, denoted by the auxiliary, and an EVENT denoted by the infinitive. We thus have the following bi-clausal structure for the past perfect:

d)



According to this structure, the infinitive spells out PRECEDENCE and MOMENT. The auxiliary on the other hand, spells out PRECEDENCE, and *mood* features, while the absence of EVENT means that the higher IP is stative.

We conclude that the perfect tenses are not mono-clausal, but rather bi-clausal. Evidence for this came from (a) the two distinct viewpoint aspects that the perfect tenses carry, which can be captured only by a bi-clausal structure; and (b) the past perfect, where more than one instance of PRECEDENCE is spelled out. Thus, it is shown that the periphrastic perfects are bi-clausal, while the tenses, such as the aorist, the present, and the imperfect are mono-clausal. This does not amount to saying though, that all periphrastic tense forms have bi-clausal structures. In the following section, which focuses primarily on the mood features, it will be shown that the periphrastic future tenses are mono-clausal.

## Chapter 5      Mood Features and the Greek Subjunctive

In this chapter we deal with Mood features, which we have assumed up until now. We will suggest which features are relevant in Greek, which morphemes spell them out, where these must be found in the syntactic structure, and how they are organized into dependency relations. We will specifically focus on the so-called Greek subjunctive, which seems to provide an answer to these questions.

### 5.1 Preverbal Morphemes and dependent verb forms

In this section we will examine the morphemes that can appear before the verb stem. It will be shown that these cannot be separated from the verb by most elements of the clause. The subject, if present, will obligatorily appear either before the preverbal morpheme or after the verb. The only elements that are allowed to intervene between these morphemes and the verb are a clitic object pronoun, and in certain cases, the negation.

One of the preverbal morphemes that appear with the verbal form is the morpheme *θα* that we briefly introduced in the future tenses. *θα* is often called a futurate marker, since it appears in all of the future tenses. When it appears before the verbal form composed of the present/ unmarked stem and the present endings (present tense form), it forms the future progressive. When *θα* combines with a verbal form composed of the perfective stem and the present endings (the dependent form), the future simple is formed. In both tense forms only a clitic object pronoun is allowed to intervene between *θα* and the verb:

- (1)    *θα*    *το*    *epistrepso*                    *avrio*            *το*            *vivlio*.  
      Fut. clit.neu    return.perfv-1s.pres    tomorrow    the.neu        book.neu  
      I will return the book tomorrow.

The negation used with the indicative mood is the marker  $\Delta e(n)$  for the English *not*<sup>14</sup>. It always appears preverbally, and in the case of the future tenses it obligatorily appears before  $\theta a$ . In any other position, it results in ungrammaticality, as we can see below:

- (2)  $\Delta en$              $\theta a$     ( $*\Delta en$ ) to    ( $*\Delta en$ ) epitrepsi    ( $*\Delta en$ ) afto.  
 Ind.neg            Fut.                    clit.neu            allow.perfv-3s.pres    this-neu  
 S/he will not allow this.

The subject, when present, can either precede the periphrastic future tense form or follow it, but cannot appear between  $\theta a$  and the verb:

- (3) O Stratis             $\theta a$  (\* o Stratis) fitevi (o Stratis) sporus (o Stratis)    sto xorafi.  
 The Stratis    Fut.                    plant-3s.pres    seed.pl.acc            in-the field.  
 Stratis will be planting seeds in the field.

Thus, we saw that  $\theta a$  seems to form a complex unit with the verb, where nothing but a clitic object pronoun is allowed to intervene. The negation in the indicative has to be found before the verb, and in the case of the future tenses before  $\theta a$ . The subject, on the other hand, appears preverbally, probably in topic position, or post-verbally, perhaps in the spec vP. We will return to this in the following sections.

$\theta a$  corresponds in meaning to the English modal *will*, and denotes a futurate or epistemic modality. Following Cowper's analysis for the English modal *will*,  $\theta a$  must then spell out the feature IRREALIS as *will* does. This entails that the clause containing  $\theta a$  will be fully deictic and thus propositional<sup>15</sup>.

Other morphemes that appear before the verb are the morphemes: *na*, *as*, and *mi(n)*. These particles along with the verb constitute the so-called Greek subjunctive. *Mi(n)* is another negation that corresponds in meaning to *not*. Again, the final *-n* in the negation is

<sup>14</sup> the final *-n* in the negation is deleted when the following word begins with a consonant, other than *p*, *t*, *k*.

<sup>15</sup> See Section 5.2.1 for more on the entailment relations.

phonologically conditioned. *Mi(n)* is only found in the subjunctive and imperative, and thus forms the counterpart of the indicative negation  $\Delta en$ . Like the indicative negation, *mi(n)* also precedes the verb. It can either occur by itself or combined with *na/ as*. In contrast to  $\Delta en$ , when *mi(n)* co-occurs with any of these particles it always follows them, intervening between the preverbal marker and the verb:

- (4) As/ Na        *min*                pame                sto                cinema.  
AS/ NA        sbjun.neg        go.perfv-1pl.pres        to-the-neu        cinema  
Lets not go to the movies/We should not go to the movies.

The particles *na* and *as* indicate that the main clause constitutes a suggestion, prompting, permission, or (with *mi(n)*) prohibition. Hence, they are often used instead of the imperative mood to indicate politeness. One difference between *na* and *as* is that *na* denotes a slightly stronger prompting than *as* does. The particle *as* corresponds in meaning to the English *lets*. *As* occurs only in main clauses, while *na* also occurs in subordinate clauses. Also, only *na* can be found in questions.

As we can see in example (4), *na* in matrix clauses can often be translated with an English modal. *Na* can also occur though, in the complement of a modal verb, as in (5):

- (5) Prepi / mporume                na parume                ti        skini mazi mas.  
Must -3s/ can. -1pl.pres        NA take.perfv-1pl.pres        the.acc tent with us  
We must/ can take the tent with us.

When the modals are absent the interpretation is quite similar, only more suggestive. In the following sections we will concentrate on *na-clauses*.

All of these particles occur, like *tha*, either with the present tense form, composed of the unmarked stem plus the present endings, or with a verbal form composed of the perfective stem and the present endings. In either case the so-called Greek subjunctive is formed. This latter form cannot occur by itself, but only with one of the above mentioned

morphemes, or with a complementizer. We shall therefore call it the *dependent* verbal form.

As with  $\theta a$ , the subject in the subjunctive will either precede the  $na/as$  + verb sequence, or follow it, in almost any position. This will have an important role in determining the structural position of  $na$ , to which we turn directly.

In conclusion, we saw that the preverbal morpheme  $\theta a$  appears immediately before the verb to form the future tenses. Depending on the choice of the verb stem we will have either the future simple or future continuous. The negation that appears in the indicative is the negation  $\Delta e(n)$ . In the future tenses  $\Delta e(n)$  appears before  $\theta a$ . The subject on the other hand can either precede this verbal complex or follow it.

The subjunctive preverbal morphemes  $na$  and  $as$  also appear immediately before the verb. A syntactic difference between the future indicative and the subjunctive forms is that the subjunctive/imperative negation  $mi(n)$  can intervene between the preverbal morphemes  $na/as$  and the verb. The subject can appear also before or after this sequence, although its distribution in the subjunctive is more complex, as we will show.

These conclusions raise some important questions about how the *mood features*, *i.e.* PROPOSITION, DEIXIS and IRREALIS are spelled out, and what their distribution is in syntax. To answer those questions we must first answer the question of where the preverbal morphemes are found; and specifically, are  $na$  and  $as$  located in the same structural position in a tree as the futurate  $\theta a$ ? If the answer is positive, then it might be the case that  $na/as$  may also spell out the feature IRREALIS, like  $\theta a$ . However, if  $na$  and  $as$  are found in the same position as  $\theta a$ , this creates problems for the position of the negations  $\Delta e(n)$  and  $mi(n)$ , since  $\Delta e(n)$  always precedes  $\theta a$ , while  $mi(n)$  always follows  $na/as$ . It may be the case that these two negations occur in different structural positions. Another possibility is that  $\theta a$  and  $na/as$  are found in different syntactic positions, while the negations are found in one and the same position. In this case  $na/as$  likely do not spell out IRREALIS, and we will also have to explain why  $na/as$  and  $\theta a$  do not co-occur. Another

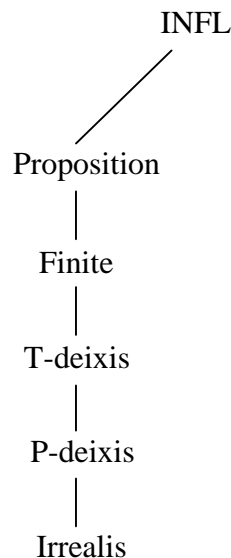
possibility would be to say that *na/as* are actually complementizers, but this too will raise some problems. All these we need to answer in order to make sense of the Greek subjunctive.

## 5.2 Mood Features

### 5.2.1 The position of FINITE

In this section we will discuss Mood features, and especially as they pertain to the subjunctive. According to Cowper (2005) IRREALIS entails P-DEIXIS, P-DEIXIS entails T-DEIXIS, T-DEIXIS entails that the clause is FINITE, and FINITE entails that the clause is propositional:

[1]



In the previous section it was suggested that when a clause contains the futurate marker *tha* the clause will be propositional. This follows automatically if *tha* spells out the feature IRREALIS. In the same sense it might be thought that *na/as* also spell out the feature IRREALIS, since they can appear in contexts where English modals occur. *Na/as* can be ambiguous, as we see in the translation in example (6), where they can be interpreted as either *should* or *can*:

- (6) Na perasume ama teliosume noris.  
 NA drop-by.perfv-1pl.pres if finish.perfv -1pl.pres early  
 We should/can drop by if we finish early.

It seems then, as if *na* corresponds to the English modals *should/can*, expressing some sort of possibility or necessity. *tha* on the other hand, which corresponds to the English *will*, is used for futurate or epistemic modality. Therefore, it is possible that *na* spells out the feature IRREALIS, which means that the subjunctive clause containing it also will be propositional by entailment. This assumption has a crucial consequence for subjunctive clauses. It entails that all subjunctive clauses will necessarily be interpreted as propositional, since they are introduced by a preverbal morpheme which spells out the feature IRREALIS.

A further important consequence of the structure in [1] is that all clauses in Greek must be propositional. That is, in Greek all clauses are finite, and they should therefore all be propositional. The so-called infinitive appears only in the perfect tenses, and never as a clausal complement. So, we need to examine the nature of propositional clauses, before we conclude that subjunctive clauses are propositional.

To begin with, according to Cowper (2005) a propositional clause denotes a cognitive manifestation of a state of affairs as well as the speaker's belief.

- (7) They saw [that John bought the flowers].

In sentence (7) the verb *saw* has a cognitive reading. We came to be aware of the truth of the proposition that *John bought the flowers*. The means by which we came to this understanding may or may not have been visual, since there is a purely cognitive sense of *see*. In contrast, in sentence (8) below the subordinate clause denotes a bare event, and not a proposition:

- (8) They saw [John buying the flowers].

In this example *saw* does not receive a cognitive interpretation, but rather a sensory one, meaning that we perceived the event of *John buying the book*. Hence, the embedded INFL in sentence (7) contains PROPOSITION, while that in (8) does not.

According to this analysis then, the sentence in (9) corresponding in meaning to that in (7), will be also interpreted as propositional:

- (9) IΔan [oti o ⊗iannis a⊗orase ta luluΔia].  
 See.perfv-3pl.pst that the John buy.perfv -3s.pst the.pl flower.pl  
 They saw that John bought the flowers.

This is indeed the case. The Greek verb for *saw*, like in English, may also have a purely cognitive reading. The subordinate clause is finite and the verb ‘bought’ is in the indicative mood. The clause is fully deictic, as the indicative spells out both T- and P-deixis, and is therefore propositional.

For the sentence in (8) though (repeated in the translation below), the subjunctive will be used instead, as there are no non-finite clausal complements in Greek:

- (10) IΔan [to ⊗ianni na a⊗orazi ta luluΔia].  
 See.perfv-3pl.pst the-acc John NA buy -3s.pres the.pl flower.pl  
 They saw John buying the flowers.

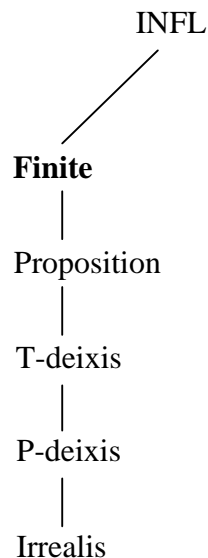
The subordinate clause in (10) is temporally relative, in that its time reference is computed with respect to that of the clause in which it is embedded (Cowper, 2005). The event of *buying* is interpreted as simultaneous with the event of *seeing*. The fact that it is not temporally deictic is supported also by the fact that the subordinate clause in the past will be ungrammatical, despite the fact that the event of *buying* precedes the moment of speech:

- (11) \* IΔan [to ⊗ianni na a⊗oraze/ a⊗orase ta luluΔia].  
 See (aor.3pl) the-acc John NA buy(imp.3s)/ (aor.3s) the.pl flower.pl  
 ≠ They saw that John bought the flowers.

Since this sentence is not temporally deictic or propositional, it seems that *na* cannot be spelling out the feature IRREALIS.

It thus appears that in Greek a subjunctive clause, though finite, can denote a bare event. This conclusion has a crucial effect on the Feature Geometry. According to Cowper (2005) FINITE entails PROPOSITION. This is motivated by the fact that in English all finite clauses, both indicative and subjunctive, are propositional. This is not the case for Greek, as just seen in example (10). While the embedded clause in (10) is finite, it may be non-propositional. The dependency structure for Greek must therefore be different from [1]. The possible solution is to propose that FINITE does not entail PROPOSITION, but rather PROPOSITION must entail FINITE, as shown in [2]:

[2]



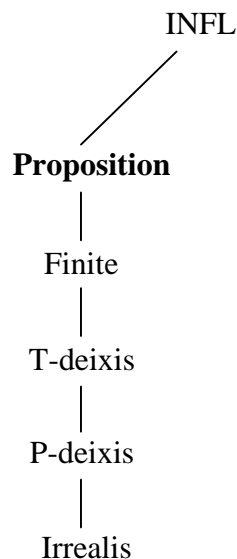
This change means that in Greek, a propositional clause will always be finite, while a finite clause does not have to be propositional. This is not to say though, that subjunctives

cannot be propositional. Like English infinitives, subjunctive clauses in Greek can be propositional, and as will be shown, they can be deictic, too.

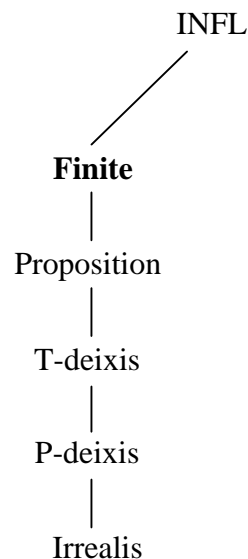
Note also that this solution is perfectly possible, despite the fact that these are entailment relations. Cowper (2005) points out that while most of the entailment relations are semantically motivated and thus intrinsic to the features, *Finite* has a purely syntactic content and thus its entailments must be stipulated. So the position of *Finite* in the geometry could in principle vary from language to language.

To conclude, in this section it is shown that the entailment relation *Finite*  $\rightarrow$  *Proposition* cannot account for the Greek facts, where all clauses are finite, but not propositional. For this reason we suggested that the entailment relation should be reversed, giving the entailment relation *Proposition*  $\rightarrow$  *Finite*. This will accommodate the fact that in Greek all clauses are finite. To repeat these, the dependency structures for the mood features in English and Greek are given in [1] and [2] respectively:

[1] English, Spanish (Cowper, 2005)



[2] Greek



### 5.2.2 Bare Events and Propositions

In the previous section we saw that subjunctive clauses may be either propositional or just bare events. Indicative clauses on the other hand, must always be propositional:

(12) Indicative

Akusa                      [oti ta              peΔia              tra⊗uΔisan].  
Hear.perfv-1s.pst      that the.pl      child.pl              sing.perfv -3pl.pst  
I heard that the children sang.

(13) Subjunctive

Akusa                      [ta peΔia              na              tra⊗uΔun].  
Hear.perfv-1s.pst      the.pl child.pl NA      sing -3pl.pres  
I heard the children singing.

Example (12) contains two propositional clauses, a main and an embedded one. The embedded clause is fully deictic, containing both temporal and personal deixis, propositional, in that it denotes a cognitive manifestation of the event that *the children sang*, and finite, as Greek has only finite clauses. In contrast the embedded clause in (13) denotes a bare event, and the sentence thus describes a sensory perception of *the children singing*.

We will now turn to the full range of subjunctive clauses and examine which clauses are propositional and which are not. We will mainly focus on the preverbal marker *na*, which has a wider distribution than *as*, since *na* can appear in both main and embedded clauses.

As mentioned, in main clauses the subjunctive is formed by a particle, such as *na*, *as* (lets), and/or *mi(n)*, plus the verbal form. The subject may be found in either pre- or postverbal position, and in most cases it is nominative. When the subject is found before the verbal complex, it is not found in its regular position, but rather in topic or focus position. The sentences below demonstrate the distribution of the subject in main clauses:

(14) *O* *Giorgos* *na* *perimeni* *eΔo.* (topic/focus)  
 The.nom George.nom NA wait -3s.pres here  
 George should wait here.

(15) *Na* *mi fi* *i* *Maria.* (regular subject position)  
 NA not leave.perfv-3s.pres the.nom Maria  
 Maria should not leave.

As we can see in these examples, in (14) the subject precedes *na* + verb, while in (15) it follows it. It will be shown that in the former case it must be in topic/ focus position, while in the latter it is not.

In embedded clauses we saw that some clauses may be propositional, while others denote bare Events. Crucial is that in embedded clauses the subject can be found either in nominative in any position, or accusative in preverbal position only. In the latter case, it seems that we have ECM constructions, as the embedded subject is assigned accusative case by the matrix verb (ex.16a, 17a). If the accusative subject appears post-verbally the clause is ungrammatical or is interpreted as the embedded object (ex.16b, 17b):

(16a) *iΔa* [*tin Anna* *na* *ferni* *ta* *vivlia*].  
 See.perfv-1s.pst the.acc Anna NA bring-3s.pres the.pl.neu book.pl.neu  
 I saw Anna carrying (/bringing) the books.

(16b) \**iΔa* [*na* *ferni* *tin Anna* *ta* *vivlia*].  
 See.perfv-1s.pst NA bring-3s.pres the.acc Anna the.pl.neu book.pl.neu  
 \*I saw carrying (/bringing) Anna the books.

(17a) *Akusa* [*ti Stella* *na* *elai*].  
 Hear.perfv-1s.pst the.acc Stella na laugh-3s.pres  
 I heard Stella laughing.

(17b) \**Akusa* [*na elai* *ti Stella*].

Hear.perfv-1s.pst      NA laugh -3s.pres      the.acc Stella  
 \*I heard laughing Stella.

As we can observe though, both of the subordinate clauses in these sentences actually denote bare events. That is, both *iΔa* for *saw* and *akusa* for *heard* receive a sensory (visual or auditory) interpretation, rather than a cognitive one. The same reading is yielded in the sentence below, although we don't have a clearly sensory interpretation:

(18) Perimene      [to Δimitri              na erθi]              (#alla ekane laθos).  
       Wait-3s.pst    the.acc Dimitris.acc    NA come.perfv-3s.pres (#but made mistake).  
       S/he was waiting for Dimitris to arrive                      (#but s/he was wrong).

In this sentence the verb for *wait* is used but only a bare eventive reading is possible. That the embedded clause cannot be propositional can also be supported by the fact that it is unacceptable with the parenthetic clause. The embedded clause does not denote the speaker's belief, but just a bare event. Compare this example with that in (19) with the same matrix verb, where the subject is nominative in preverbal position and the parenthetic clause is acceptable:

(19) perimene    [o        Δimitris        na erθi]              (alla ekane laθos).  
       Wait-3s.pst    the-nom Dimitris-nom    NA come.perfv-3s.pres (but made mistake)  
       S/he was expecting that Dimitris will come                      (but s/he was wrong).

As we can see from the translations, although in Greek the same verb is used, the interpretation changes when the subject is found in a different case. In (19) the embedded clause refers to the proposition that *Δimitris will come*, supported also by the acceptability of the parenthetic clause, while the embedded clause in (18) with the accusative subject denotes a bare event.

In most cases the subject can also appear in post-verbal position, and if so, it always receives nominative case:

- (20) perimeno [na erthi o Δimitris].  
 Wait -1s.pres NA come.perfv-3s/pres the.nom Dimitris.nom  
 I am waiting/ expecting for Dimitris to come.

In this case either interpretation is possible. Thus, the case and the position of the subject seem to indicate whether or not a clause is propositional. When the embedded subject can be assigned accusative case by the matrix verb, then the clause will most likely be interpreted as bare event. If not, then the clause will be propositional. Consider the propositional sentence for instance:

- (21) \*Pistevo to Δimitri na erθi.  
 Believe-1s.pres the.acc Dimitris-acc NA come.perfv-3s.pres  
 I believe Dimitris will come.

This sentence is ungrammatical. It can only be grammatical if the subject is nominative either in pre- or post-verbal position. It seems then that we can use this as a criterion to determine whether a subjunctive clause is propositional. However, it is not the case that propositional subjunctives can only have a nominative subject. In (22) the embedded subject is accusative:

- (22) θelo [tin Elena na erθi (ki oxī ti Hristina)].  
 Want-1s.pres the.acc Elena NA come.perfv-3s.pres (and no the-acc Christine)  
 I want Elena to come (and not Christine).

In this case though, the embedded subject *Elena* is in focus/topic position. In the bare eventive subjunctive clauses though, the embedded subject is not in focus/ topic position. Thus, when the embedded subject is in accusative in non-focus position, the clause will be interpreted as a bare event, otherwise as propositional.

Furthermore, the embedded subjunctive clauses that denote a bare event are not temporally deictic, but rather temporally relative. Consider example (17a), repeated as (23):

- (23) Akusa                    [ti    Stella   na   Øelai].  
 Hear.perfv-1s.pst    the.acc Stella   NA   laugh -3s.pres  
 I heard Stella laughing.

In this example the time reference of the embedded clause is the same as that of the matrix clause. If the time reference of the embedded clause was computed with respect to the moment of the speech, this sentence will be ungrammatical, which is indeed the case:

- (24) \*Akusa                    [ti    Stella   na Øeluse].  
 Hear.perfv-1s.pst    the.acc Stella   NA laugh -3s.pst  
 \*I heard Stella having laughed.

To sum up, it is suggested that in embedded subjunctive clauses, we have bare events when the embedded subject is exceptionally assigned accusative case by the matrix verb. This is also motivated by the fact that these clauses are shown to be temporally relative. Therefore *na* cannot spell out the feature IRREALIS, since IRREALIS entails TEMPORAL DEIXIS.

Clauses that do not allow an accusative embedded subject in non-focus/topic position are propositional. In this case the nominative subject can appear in almost any position, except between *na* and the *verb*. Consider for instance the sentence below, where the matrix subject is different from that of the embedded clause:

- (25) [I Maria]                elpizo [i Maria] na   aporripsi [i Maria]    tin prosfora [i Maria].  
 The.nom Maria   hope-1s.pres   NA   reject.perfv-3s.pres   the.acc offer  
 I hope Maria will reject the offer.

The positions that the embedded subject can occupy seem to actually be its possible syntactic landing sites. When the embedded subject appears at the very beginning, it is the topic of the main clause. When it appears immediately before *na* and the *verb*, the subject is also a topic, but this time in the embedded clause. When on the other hand the subject appears immediately after *na + verb* the subject seems to be in focus position, as it is interpreted *I hope it's Maria, and not somebody else, who will reject the offer*. Finally, when the embedded *object* precedes the subject, emphasis is given on the object, which is found in focus position, while the embedded subject must be in its regular position, i.e. in the embedded [spec, vP].

With respect to deictic features, it seems that the subjunctive propositional clauses actually carry Deixis. Both sentences below are grammatical, but they receive different interpretations:

(26a) Perimena      na      ine                      i                      Elia spiti.  
 Expect-1s.pst NA    be-3s.pres      the.nom          Elia home  
 I expected that she is at home.

(26b) Perimena      na      itan                      i                      Elia spiti.  
 Expect-1s.pst NA    be-3s.pst          the.nom          Elia home  
 I expected she was at home.

In (26a) the period of Elia's presence at home must include both the time of the matrix clause and the moment of the speech. This is what has been called the *dual access* use of the present tense (Stowell, 1995), and indicates that the embedded clause is interpreted with respect to the moment of the speech. In (26b) the complement clause is simultaneous with the matrix clause, prior to the moment of the speech. Thus, the propositional subjunctive clauses can be temporally deictic.

There are also cases where the verb, either the dependent or the present tense verbal form, can appear with just a complementizer, without *na*, or by itself:



These assumptions leave us with two possibilities: (a) *na* is in the same position as *θa* and spells out IRREALIS. This poses some problems with the negations, as the indicative negation precedes *θa* and the subjunctive negation follows *na*. In this case also, we cannot explain why subjunctive clauses can be bare events; (b) *na* may be in a different position from *θa*, which does not explain why they do not co-occur. In addition, we will have to explain where mood features are located, since they are not spelled out by *na*. This possibility also entails that *na* is in T° (or I°), which can also explain the embedded accusative subjects. Finally, a third possibility that we also need to consider and could account for the fact that *na* appears in both propositions and bare events, is that *na* is actually a complementizer. This possibility should not be ruled out, as we saw that there are cases where we have instead a complementizer like *if*. *Na* could be somewhere in C, which would perhaps account for the topicalized elements.

### 5.2.3 The relation between Comp and Infl

In this section we deal with the syntax of *na* and propose where the mood features are. We will begin first with the syntax of subjunctive clauses denoting bare events, which provide substantial evidence that *na* is in T, or originates in T. We saw that in bare events the subject is found in preverbal position and non-topic position in accusative case, while when it is nominative in pre- or postverbal position, or accusative in topic position the clause will be interpreted as propositional. In the case of bare events, the subject of the subjunctive embedded complement clause is exceptionally assigned accusative case by the matrix verb (example (17a)) of the previous section, repeated here as example (28)):

- (28) Akusa                                    [ti     Stella   na   *θelai*].  
       Hear.perfv -1s.pst     the.acc Stella   na laugh-3s.pres  
       I heard Stella laughing.

Although the embedded verb is finite, and should assign nominative case to its subject, the subject is raised higher to be assigned accusative case by the higher verb. Like in

English we can say that this is an ECM construction. This suggests that there is no CP, but rather only an embedded TP. Following the analyses provided for the English ECM constructions, let us assume that *na* is in T. The verb then must have a strong unchecked feature that raises it to T, as in bare events only a clitic object pronoun can intervene between *na* and the verb. Notice that in this case not even the subjunctive negation is allowed to appear in contrast to the embedded propositional subjunctive clauses:

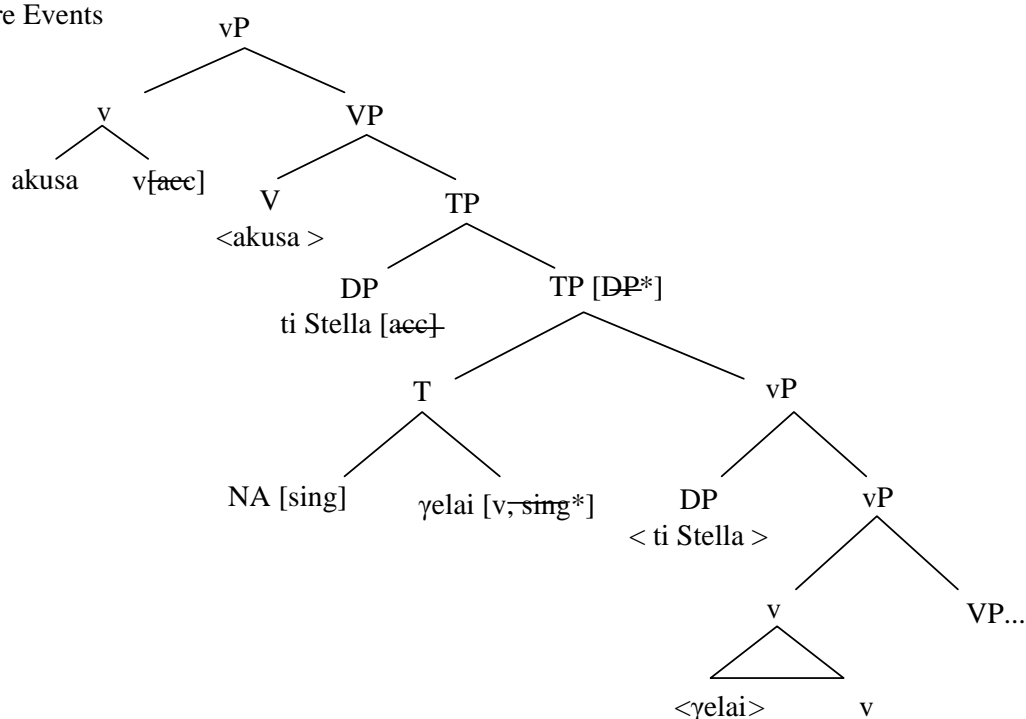
- (29a) \*Akusa                    [ti    Stella   na    mi                    Øelai].  
           Hear.perfv -1s.pst    the.acc Stella   NA    sbjun-neg    laugh-3s.pres  
           \*I heard Stella not laughing.

This sentence is unacceptable, as it is in English. *Hear* is incompatible with the event of someone not laughing. Thus, in bare Events no negation is present suggesting that in Greek the position of negation is higher than T°. This can also be supported by the fact that also the position of the indicative negation must be higher, as it appears before the propositional futurate marker *θα*. With respect to the embedded subject, it raises to T, to check T's strong EPP feature<sup>16</sup>. It is then assigned case by the matrix verb:

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<sup>16</sup> Note that Alexiadou and Anagnostopoulou (1998, 1999) suggest that there is no strong EPP feature in Greek. There is no reason however to reject this idea, as it will be shown later that it can account for Greek.

[3] Bare Events



In this ECM construction, the verb merges with T after it has moved to the little vP. It is then marked with  $\phi$ -features by T. The strong feature of the verb is motivated by the fact that nothing (except a clitic object pronoun) can intervene between *na* and the verb, and as there are cases where the subject stays in situ, we need to prevent it from intervening. The subject raises from the spec vP to the spec TP, to satisfy the strong EPP feature on T. It is then assigned accusative case by the matrix light v. This ECM construction seems then to give an account for why bare events have an accusative subject.

Since these clauses denote bare events, mood features are absent. Only the syntactic feature FINITE is present in the TP (or IP), since the verb agrees with the subject in  $\phi$ -features. Notice that it is possible for FINITE to occupy a different position from the mood features, as we now assume that FINITE does not entail PROPOSITION. Viewpoint aspect must also be present as the perfective stem is present in these clauses:

- (30) perimeni      tin      Anna na erθi.  
 Wait-3s.pres    the.acc Anna NA come.perfv-3s.pres  
 S/he is waiting for Anna to arrive.

What cannot be present in these structures though, is the feature PRECEDENCE. A clause denoting a bare event is ungrammatical if the embedded verb is marked with the past endings:

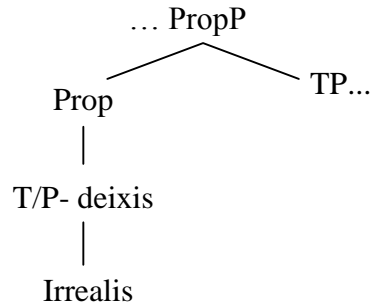
- (31) \*perimene tin Anna na irthe/ #erxotan.  
 Wait-3s.pst the.acc Anna NA come.perfv-3s.pst/ come-3s.pst  
 S/he was waiting for Anna to have arrived.

This sentence may be grammatical if the imperfect in the embedded clause is used. The interpretation though that the clause receives will not be a bare event but the proposition that *s/he expected that Anna would come*, expressing the speaker's belief. Since a bare eventive interpretation is not possible with the imperfect or the aorist, this means that PRECEDENCE is not present in bare events either, probably due to the semantic incongruity of perceiving something having happened prior to the perception. To conclude, the features that may be present in a bare eventive clause are FINITE and MOMENT, i.e. EVENT.

Propositional *na*-clauses behave quite differently. The subject is nominative, and appears either before (in topic) or after the verbal complex (in situ). Its position depends on the intended emphasis. The subjunctive negation occurs in these clauses and it always follows *na*.

Before providing an account for the propositional *na*-clauses, we will first look at the indicative clauses, which are always propositional, focusing on those containing the futurate marker  $\theta\alpha$ . As mentioned,  $\theta\alpha$  spells out Irrealis, and thus entails that the clause will be propositional. Since we concluded that mood features are not in T, this entails that  $\theta\alpha$  cannot be in T, but rather in a higher position. Suppose that there is a propositional phrase (PropP) where  $\theta\alpha$  is inserted to spell out IRREALIS. This is not in T but higher, in the CP system. This phrase will contain the feature PROPOSITION and all of its dependents, when present:

[4] PropP



Regarding T it seems that in bare events the verbal forms are marked with  $\phi$ -features and features of viewpoint aspects only, but not with features of tense and mood. For this reason we will use  $I^\circ$  for inflection from now on, instead of  $T^\circ$ . We have assumed that the features of Deixis are bundled together, since we have no proof to the contrary. Regarding negation, as this occurs before  $\theta\alpha$ , we can say that NegP is found just above PropP in the structure. In the case where  $\theta\alpha$  is absent we only have the features DEIXIS and PROPOSITION. It can be suggested then that the verb moves to this position, since the clause containing it will be deictic and propositional.

We can now turn to propositional *na*- clauses. We have shown that in bare Events *na* is in  $I^\circ$ , along with the verb which has moved to this position. Since *na* appears with bare events it cannot spell out IRREALIS in propositional clauses, as it has been suggested. It may be the case that *na* does not spell out any feature, similar to the English *to* as proposed by Cowper and Hall (2001), and that in fact it may spell out the highest clausal head when no more specific vocabulary item is inserted. If *na* is in part similar to the English *to*, and does not spell out IRREALIS, it follows that *na* cannot be inserted in the same position as  $\theta\alpha$ , i.e. in PropP. A further effect will be that the two negations will be found in one and the same position, in NegP, dominating PropP in the CP system. This means that *na* is found higher, as it must precede the negation. The only possible solution then is our third possibility suggested in the previous section, i.e. that *na* in propositional clauses is some kind of complementizer. Following Rizzi's analysis (1997) we can assume that subjunctive propositional clauses have a ForceP, which can be realized by the complementizers. *Na* may function then as the head of Force. This can be supported

by the fact that *na* co-occurs with only a small number of ‘complementizers’, like *mexri* (*until/as soon as/up to*) and *⊗ia(for)*, where the presence of *na* is obligatory:

(32a) *⊗ia na* pame ⊗ia kataskinosi xriazomaste tulaxiston Δio  
skines.

For NA go.perfv-1pl.pres for camping need-pass.1pl.pres at-least two tents  
In order for us to go camping there we need at least two tents.

(32b) \* *⊗ia O* pame ⊗ia kataskinosi xriazomaste tulaxiston Δio skinses.

For go.perfv-1pl.pres for camping need-pass.1pl.pres at-least two tents  
In order for us to go camping we need at least two tents.

(33a) *mexri na* teliosis to mpanio su, θa ime etimi.

as soon as NA finish.perfv-2s.pres the bath your, Fut. be-1s.pres ready  
As soon as you take your bath I will be ready.

(33b) \**mexri O* teliosis to mpanio su, θa ime etimi.

as soon as finish.perfv-2s.pres the bath your Fut. be-1s.pres ready  
As soon as you take your bath I will be ready.

All of these elements also function as prepositions appearing with DPs:

(34a) *Perpatisame mexri to Δasaki.*

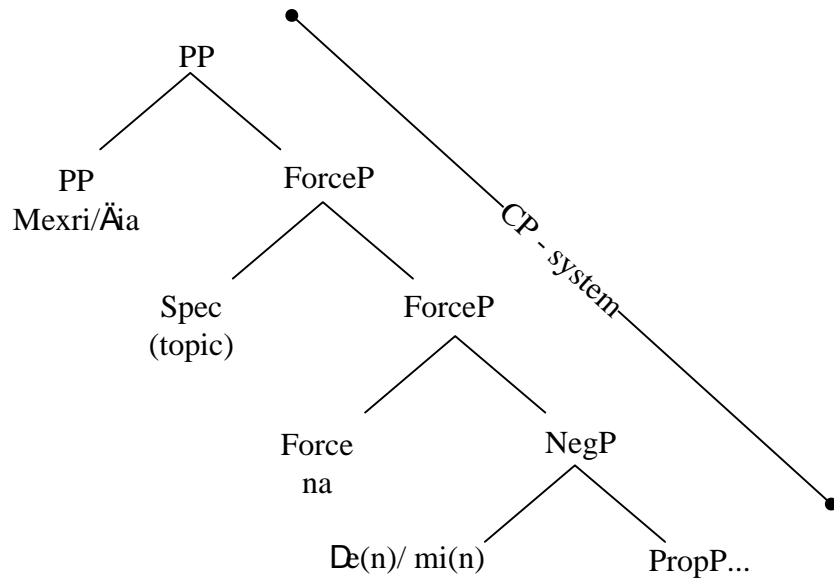
Walk.perfv-1pl.pst to the little forest.  
We walked to the park.

(b) *To a⊗orase ⊗ia afton.*

Clit.acc buy.perfv-3s.pst for him  
S/he bought it for him.

We can treat then these elements as prepositions above the ForceP, whose head is *na*:

[5]



According to Adger (2003) the specifier of the CP can be filled with a topicalized element. Since Force can be occupied by a complementizer, it can be assumed that the spec ForceP can be filled with a topic. In the case we discuss here, if a PP is present, the preposition will assign case to the topic, i.e. accusative (repeated ex.32a):

- (35) *Øia mas na pame*                      *Øia kataskinosi xriazomaste tulaxiston Δio skinses.*  
 For us NA go.perfv-1pl.pres for camping ` need-pass.1pl.pres at-least two tents  
 In order for us to go camping there we need at least two tents.

Here, the subject has raised to the spec ForceP as the topic of the sentence, and is assigned case by the dominating PP. If the PP is absent, the topic is nominative:

- (36) *Pisteva*                      *o*                      *Øiannis*                      *na*                      *erxotan.*  
 Believe/hope-1s.pst    the.nom John.nom                      NA                      come-3s.pst  
 I believed/ hope John would come.

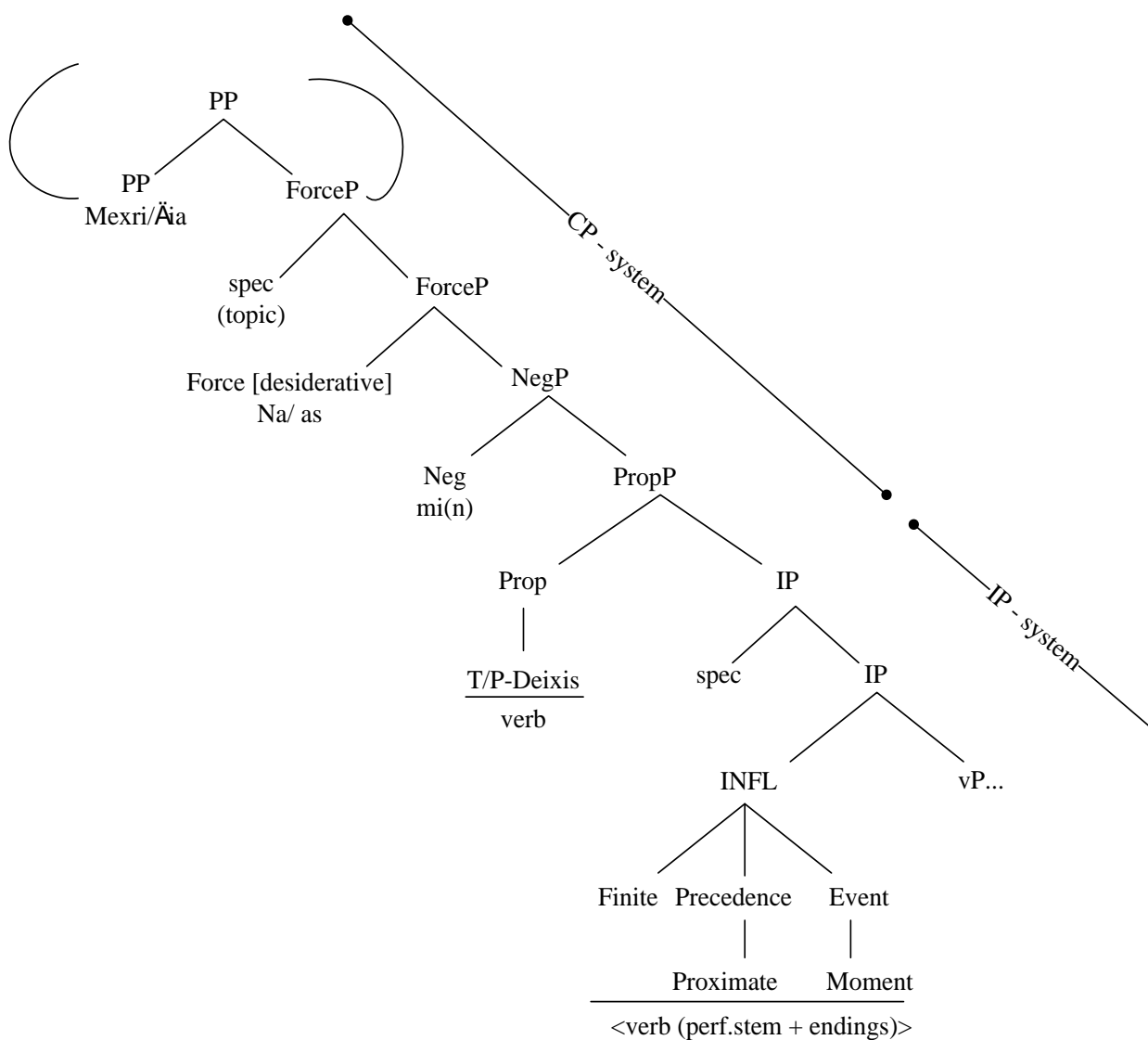
In this case the DP is presumably assigned nominative case by INFL, but it seems that nominative can be overridden by other cases. Thus, we can account for the fact that in these clauses the embedded subject is found preverbally in nominative case. Notice also that in this clause the embedded verb is marked by the past endings, showing that in embedded propositional *na*-clauses PRECEDENCE can occur as in indicative clauses.

This analysis can also account for the matrix subjunctive propositional clauses. As mentioned these are introduced by *na*, *as* or just the subjunctive negation *min*. They indicate a sort of prompting, or prohibition if the negation is present, with *as* inserted in more weak desideratives, and *na* in stronger desideratives and questions. In every case we can have a topic immediately preceding any of these particles:

- (37). [o ⓧiannis]                    *na/as (min)*                    perasi ([o ⓧiannis]).  
           The.nom John.nom    NA/AS (sbjun.neg)    come-in.perfv-3s.pres  
           (*You should not*) Let John come in.

So again what we have here is the structure in (5). Generalizing it to all propositional *na*-clauses the following structure results:

[6] Propositional *na*-clauses: embedded and main

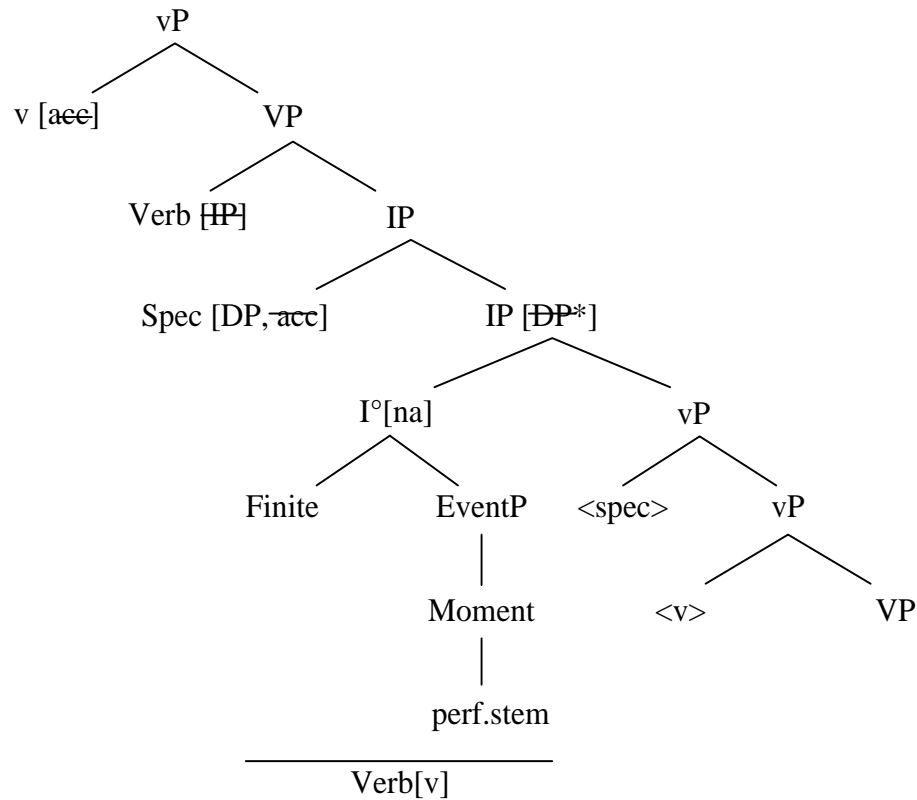


According to this structure, in a propositional *na*-clause after the verb raises to INFL to spell out finite, tense and aspect, it moves to PropP to spell out *mood features*. Notice also that IRREALIS is absent, as the indicative *θa* is absent. *Min*, the negation immediately dominates PropP as nothing can intervene between the negation and the verb (except the clitics). *Na/as* spells out Force, and in particular desiderative force. A topic may be present in spec of ForceP, in which case a PP can dominate it and assign accusative case

to it. If the topic is not present, the PP can dominate the ForceP, where *na* is located<sup>17</sup>. In this case the subject will be found post-verbally, probably in the spec vP in which case it is assigned nominative case probably by INFL.

Up to now we answered the question of what *na* spells out. We suggested that in bare events, which are always embedded, there is only one IP. *Na* is inserted in the I° *na* spelling out no particular features. We also suggested that I° hosts only the features FINITE, PRECEDENCE and EVENT. The embedded spec IP will also be licensed case but not from I°, but rather from the matrix light v. This gives the structure:

[7] Bare Events



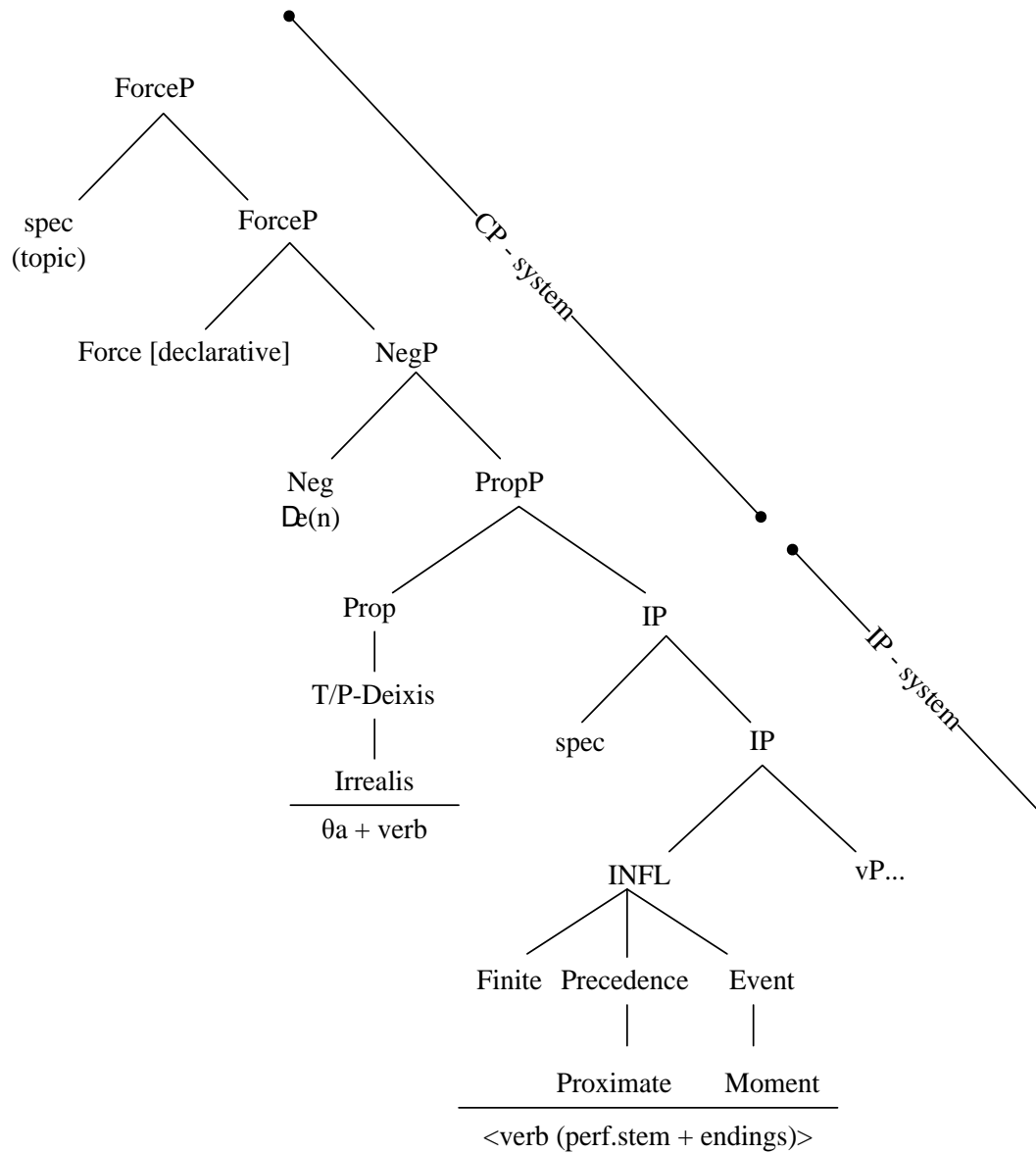
For propositional *na*-clauses we suggested that there is also a CP, which will prevent the subject from being accusative, except in topic position. In propositional clauses *na* will be inserted in the Force°, following Rizzi's analysis (1997). In contrast to Rizzi's, but

<sup>17</sup> In this case we have an adjunct clause, similar to those we saw in examples in 32.

similar to Adger's analysis the topic moves to the specifier of the ForceP, which can then be assigned accusative case if there is a PP immediately dominating the ForceP. We suggested also that NegP and PropP are also in the CP system, with NegP immediately dominating PropP. It is shown that mood features are realized in this phrase, as in the IP system these are absent. This gave the structure in [6], for both embedded and main propositional *na*-clauses.

The structure that can be proposed for indicative clauses is similar to the one in [6]. Some differences are that the feature IRREALIS can be present in PropP; the NegP is realized by the indicative negation  $\Delta_n$ , while the head of the ForceP is not spelled out by a particular morpheme, as suggested also by Roberts (2004). Thus, the following structure is suggested:

[8] Declarative clauses



To conclude, in this chapter it is shown that the relation between the CP and the IP is of crucial significance, as only a clause containing a CP will be propositional. We provided an account of where and how the features are organized into syntactic projections, as well as by which elements they are spelled out. This analysis is shown to have some important effects on main and embedded clauses, either propositional or not. What remains to be proposed now is the Feature Geometry of the Greek INFL.

## Chapter 6      The Greek INFL and its Manifestations

Over the course of this work we discussed the features of Aspect, Tense and Mood, as they are realized in Greek. We showed by which elements these are spelled out, and how they are organized into syntactic projections.

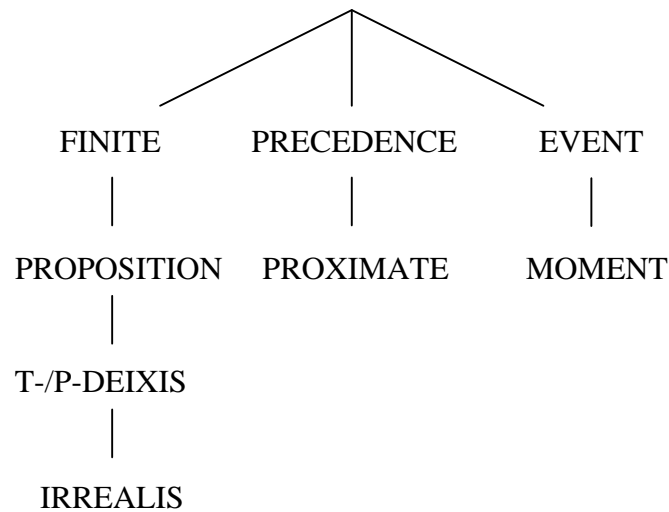
Focusing on the features that are spelled out by the different verbal morphemes, we showed that **MOMENT**, rather than **INTERVAL**, is the marked feature in the Geometry, spelled out by the perfective, as well as the perfect stem. The unmarked stem, i.e. the present of the aorist, is unspecified for events or states. As a result all the tenses that make use of the perfective stem will be perfective, while all the tenses that make use of the unmarked stem will be imperfective or stative, depending on the context.

The feature **PRECEDENCE** is realized by the past endings that appear in the imperfect, and the aorist, and in the auxiliary in the past perfect. Other morphemes that are shown to spell out **PRECEDENCE** are the perfect stem found only in the participial perfect tenses and the infinitival ending. The perfect stem also spells out the feature **PROXIMATE**, which entails the presence of **PRECEDENCE**.

Mood features are present in all main clauses, both indicative and subjunctive, as well as by certain embedded clauses. Regarding the entailment relations it is suggested that in Greek the feature **PROPOSITION** entails **FINITE**, and not the other way around as in English or Spanish, as **FINITE** appears in all Greek clauses, both propositional and bare events/states. This is possible since **FINITE** is the only feature that has a purely syntactic content. **IRREALIS** is spelled out by the futurate marker *θα* which corresponds to the English modal *will*.

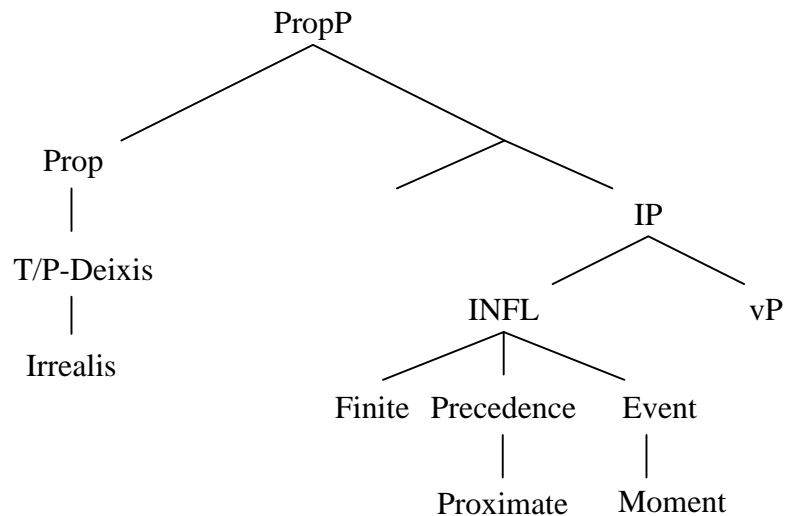
We can now propose the Feature Geometry of the Greek INFL, which shows what features are present in this language:

[1] The Greek Feature Geometry



The following structure displays the syntactic places of the features and how these are organized into dependency relations:

[2] The syntactic position of the features



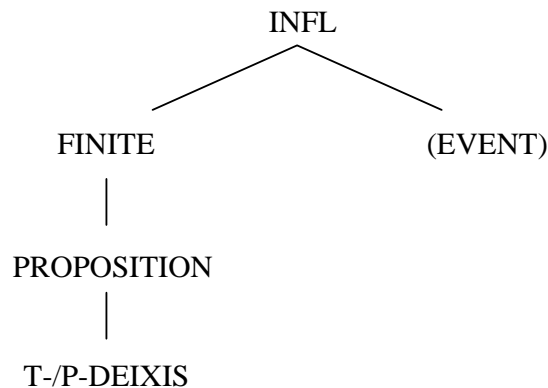
These are the features that the verb makes use of in Greek. With respect to T- and P-DEIXIS we will assume that these are bundled together, as we have no reason to assume otherwise. Depending on the particular feature combination a corresponding tense form

will result. We will now proceed on showing which features appear in each of the tenses under discussion.

## 6.1 Manifestations of the Greek INFL

As mentioned, depending on which features appear in the structure a particular tense form will be inserted. We can now examine the feature geometries of each of the tenses<sup>18</sup>:

[3] PRESENT TENSE:



- (1) Sta peΔia            ares-un            i            sokolates.  
 To-the children        like -3pl.pres    the.pl.nom     chocolate.pl.nom  
 The children like chocolates. (Stative)

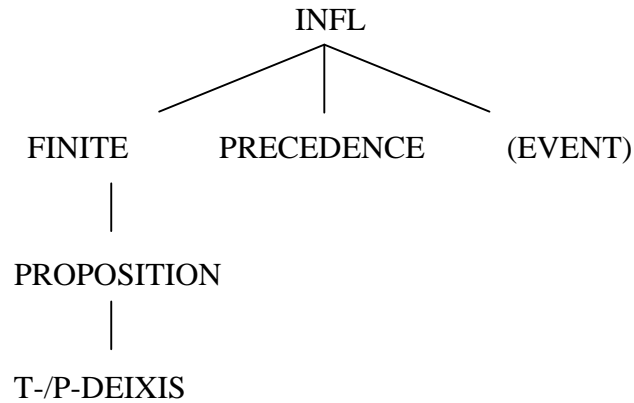
This clause is fully deictic and hence propositional. By entailment it is also FINITE. The absence of PRECEDENCE denotes that the clause will be interpreted as taking place at the same time as its temporal anchor. In its geometry the feature EVENT will be absent, and will receive a stative interpretation. In the presence of a bare eventive node, the clause will be interpreted by default as imperfective:

- (2) Plen-i            to            aftokinito.  
 Wash-3s.pres    the        car  
 S/he is washing the car. (Imperfective)

<sup>18</sup> We have already looked at the syntax of the tenses. In this section we only examine the features that are spelled out and the dependency structures they form.

The geometry of this clause will be the same as the one for the clause in example (1), except that a bare event node will be present, which means that this clause will receive an imperfective viewpoint aspect.

[4] IMPERFECT:



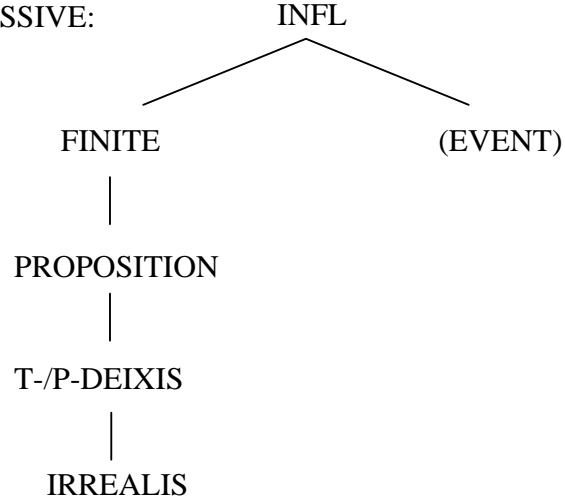
- (3) Sta peΔia                    ares-an            i                    sokolates.  
 To-the children            like-3pl.pst    the.pl.nom    chocolate.pl.nom  
 The children liked chocolates. (Stative)

Similar to the present tense this tense can also be stative, i.e. in the absence of EVENT. Thus, the clause in example (3) will be interpreted as *the children were or used to in the state of liking chocolates*. The presence of PRECEDENCE signifies that the clause will be interpreted prior its temporal anchor at the moment of the speech. This is spelled out by the past endings.

- (4) E-plen-e    to            aftokinito.  
 aug-wash-3s.pst                                    the        car  
 S/he was washing the car. (Imperfective)

In this clause, like in the present, a bare eventive node will be present, which is interpreted again as imperfective, as we can also see from the translation, where the progressive English past is used.

[5] FUTURE PROGRESSIVE:

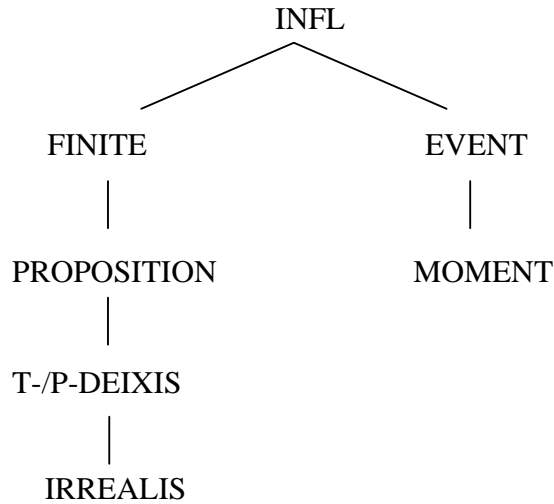


- (5) Malon        θa     tus     kser-i.  
Probably       fut.    them   know-3s.pres  
S/he will probably know them. (Stative)

In the feature geometry of this sentence the feature *EVENT* will be absent, which means that it is interpreted as stative. The presence of *IRREALIS* entails that the clause is fully deictic and propositional. *IRREALIS* is spelled out by the futurate marker *θa*. When *Event* is present, only an imperfective interpretation becomes available, as the sentence below shows:

- (6) θa        tin episkeft-etai        kaθe mera.  
Fut.    her visit-pass.3s.pres    every day  
S/he will visit her every day. (Imperfective)

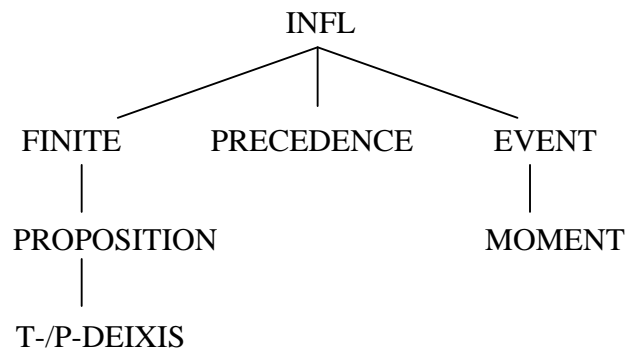
[6] FUTURE SIMPLE:



In the future simple only the perfective viewpoint aspect is possible. This means that Event will have dependent feature MOMENT, rather than being a bare eventive node. This is realized by the perfective stem. IRREALIS will also be present as this is spelled out by the futurate  $\theta a$ :

- (7)  $\theta a$  tin episkeft-i avrio.  
 Fut. her visit.perfv-pass.3s.pres tomorrow  
 S/he will visit her tomorrow. (Perfective)

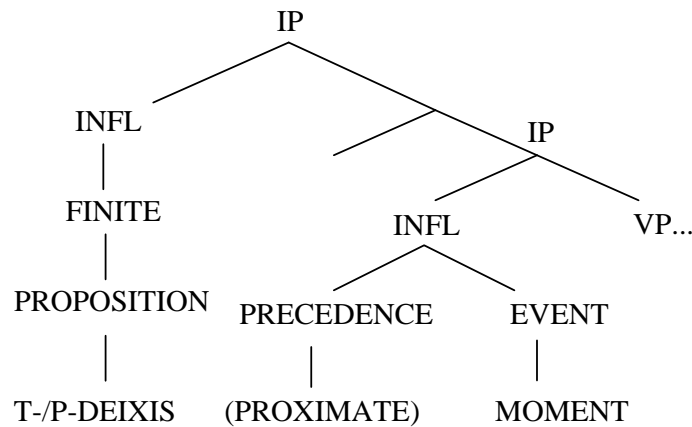
[7] AORIST:



- (8) E-plin-e to aftokinito.  
 aug-wash.perfv-3s.pst the car  
 S/he washed the car. (Perfective)

In the aorist IRREALIS is absent. The feature PRECEDENCE is present though, spelled out by the past endings. This means that the clause is temporally anterior to its anchor point. It is fully deictic, and thus finite, and perfective, as the feature MOMENT is spelled out by the perfective stem.

[8] PRESENT PERFECT:



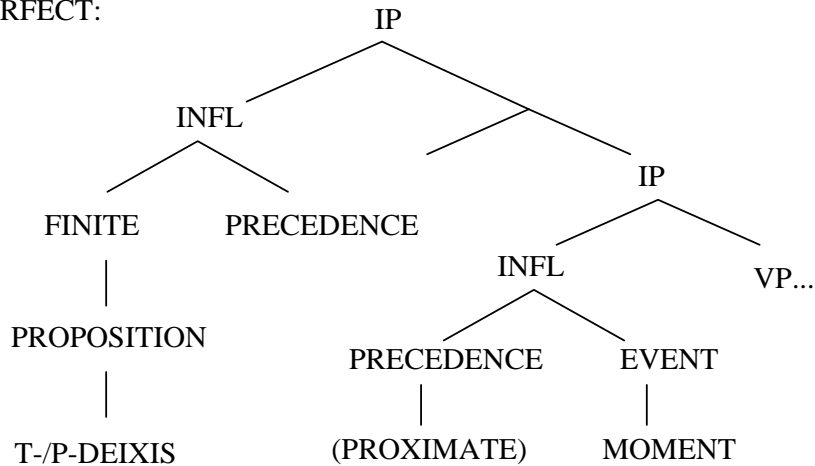
- (9) eh-i            anaps-i            to            fos.  
 Have-1s.pres    switch-on.perfv-inf    the.neu.s    light.neu.s  
 S/he has switched the light on.

In this sentence mood features are spelled out by the auxiliary *ehi* (*has*). The absence of the feature EVENT in the higher INFL means that it is interpreted as stative. In the lower INFL MOMENT is spelled out by the perfective stem and PRECEDENCE by the infinitival ending. When the feature PROXIMATE is present, the results of the perfective event are still evident at the moment of the speech:

- (10) eh-i            anam-eno            to            fos.  
 Have-1s.pres    switch-on.perf-pass.neu.s    the.neu.s    light.neu.s  
 S/he has switched the light on/ the light is (switched) on.

In this case MOMENT and PRECEDENCE is spelled out by the perfect stem. The clause then surfaces as a result state.

[9] PAST PERFECT:



- (11) i-h-e                      anaps-i                      to                      fos.  
 Aug.have-1s.pst              switch-on.perfv-inf      the.neu.s              light.neu.s  
 S/he had switched the light on.

In this sentence there are two instances of PRECEDENCE realized by two verbal forms, and therefore two INFLs. One instance of PRECEDENCE is spelled out by the past endings that mark the auxiliary and another by the infinitival ending. Again, mood features are realized by the auxiliary only, while the absence of EVENT in the higher INFL will signify again that the clause is stative. In contrast, in the lower INFL MOMENT is spelled out by the perfective stem, and therefore EVENT is present. As mentioned, when the feature PROXIMATE is present in the geometry as a dependent of EVENT, this is spelled out by the perfect passive participle:

- (12) i-h-e                      anam-eno                      to                      fos.  
 aug.have-1s.pst              switch-on.perf-pass.neu.s      the.neu.s              light.neu.s  
 S/he has switched the light on/ The light is (switched) on.

## 6.2 Conclusions

After having looked at the different aspects of the verb, and its effects on the interpretation of the clause we proposed the Feature Geometry of the Greek INFL, and showed how features related in a dependency structure.

We also showed that depending on the different feature combination that appears in the structure a certain tense form will be inserted. This feature combination will correspond in the form and meaning of the particular tense form. It has to be added though that the particular geometries that we saw account only for the main tense forms that we are dealing with in this work<sup>19</sup>. It is also possible for more complex feature geometries to result, in tenses such as the future perfect, where additionally to the present and past perfect, IRREALIS is spelled out, as the futurate marker precedes the auxiliary and the infinitive/ participle. A simpler feature combination is also possible, with participles other than the perfect passive participle we have seen, which do not form a tense form though. The present participle for instance, composed by the unmarked stem and an adjectival endings, can have a bare INFL, denoting a state, or just the feature EVENT as its dependent. Another participle, the past participle, formed by the perfective stem and an ending, does not form a tense form either, while it does not frequently appear in the every day's speech. This participle could be just marked for PRECEDENCE and MOMENT only.

Any combination of these features gives a verbal form, either finite or not, which will be inserted in the structure.

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<sup>19</sup> See the Appendix for more on the verbal forms.

## Chapter 7 Conclusions and further research questions

Assuming the feature geometric treatment of INFL (Cowper, 2005) we proposed the corresponding Greek INFL. We broke the verb into pieces, and showed which features are spelled out. Specifically, we showed that MOMENT is spelled out by the perfective stem. As the perfective stem is found in the future simple and the aorist, these tenses can only express a perfective viewpoint aspect. The unmarked stem on the other hand, found in the present, imperfect and the future simple may denote a state or an imperfective event. Thus, these tenses will be unmarked for aspect too, and the interpretation of the clause is shown to be determined by the context. In contrast to the English INFL then, MOMENT rather than INTERVAL will be the marked value in the geometry Greek, while the imperfective aspect will be the default interpretation of an eventive clause. PRECEDENCE is spelled out by the past endings and the infinitival ending. It is proposed that the archaic stem of the perfect tenses spells out the feature PROXIMATE, a dependent of PRECEDENCE, and thus, by entailment it also spells out PRECEDENCE. As the perfect stem does not appear with canonically stative verbs, this is shown to spell out MOMENT too, which then surfaces as a result state. Mood features such as PROPOSITION and DEIXIS are not spelled out by a particular morpheme, but rather these are expressed by the interpretation of the clause. The feature FINITE is spelled out by the verbal endings, while the feature IRREALIS by the futurate marker *θα*. All these can be summarized in table (1) below:

(1) PROPOSITIONAL, DEICTIC CLAUSES					
FINITE	VIEWPOINT ASPECT		TENSE		
	STATES	EVENTS		PRECEDENCE	PRECEDENCE + PROXIMATE
		INTERVAL	MOMENT		
<i>Present endings</i> <i>Past endings</i>	<i>Unmarked stem</i>		<i>Perfective stem</i> <i>Perfect stem</i>	<i>Past endings</i> <i>Infinitival ending</i> <i>Perfect Stem</i>	

With respect to the entailment relations these are shown to be slightly different than both English and Spanish. It is suggested that in Greek PROPOSITION entails FINITE and we could thus account for the fact that not all finite clauses are propositional too. Another consequence of this change is that it made it possible for FINITE to be in a different syntactic position in the structure.

To determine the structural position of the features we looked at the so-called Greek subjunctive. We tackled the question of whether the particle *na* also spells out the feature IRREALIS, similarly to the futurate particle *tha* and showed that this is not the case. In fact it is suggested that in bare events *na* originates in INFL. In this case bare events are just TPs, or rather IPs, as only the features FINITE and EVENT can be present. The particle *na* is then inserted in INFL spelling out no features, similar to the English *to*. Assuming a version of Rizzi's CP-system (1997), we proposed that in propositional clauses *na* is found in the Force head of a CP, spelling out desiderative force when the clause is matrix. We thus suggested that bare Events are just IPs, while propositional clauses are always CPs. For this reason mood features should be in the system of CP, and hence there is a PropP which will host all the mood features. To distinguish a bare eventive from a propositional clause, it is shown that the distribution and case of the subject has a leading role to this. It is assumed that in bare events the subject is accusative found in the spec IP, while in propositional clauses the subject is either in the spec IP, or in topic position either accusative or nominative. It is the properties of the subject then that may be used as a diagnostic to determine whether a clause is propositional or not.

Insofar as these assumptions prove to be correct, interesting questions may arise. The interaction of the CP and IP system seems to have some crucial effects to the meaning and structure of a Greek clause. The change of the entailment relation of FINITE and PROPOSITION, as well as their syntactic position may open up more possibilities for cross-linguistic phenomena. The case assignment of the subject DPs and their position in the structure are some more questions that need to be further addressed, and specifically how these are established exactly. It would be interesting thus, to see how these could be accounted for within the theoretical frameworks used in this work.

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## Appendix: All possible combinations of the pieces of the verb<sup>20</sup>

In Chapter 2 we briefly presented the parts that the verb may be composed and showed which tenses are formed. We broke up the verb into pieces in order to investigate in the remainder of this work which features they spell out. These pieces may be: *preverbal morphemes*, such as the futurate marker ‘ $\theta a$ ’, or ‘ $na$ ’, which we look in detail at Chapter 5; *the verbal stem*, the present or rather the unmarked stem, and the past stem, which will be called the perfective stem<sup>21</sup>; and the *endings* of the verb, either finite or non-finite. In this section we will present all the pieces and their possible combinations and see that each time a particular verbal form arises.

We will first look at those simple finite tense forms that do not use an auxiliary. Table (1) below gives us all the possible verbal forms that can be combined:

### [1] Simple finite tense forms

Preverbal morpheme	Verb	
$\emptyset$	unmarked stem	present endings
$\theta a$	perfective stem	past endings
$na$	////////////////////	////////////////////

Table [1] gives 12 possible possibilities, which we consider in turn:

1. *Present tense:*  $\emptyset$  + *unmarked stem* + *present endings*

This combination gives the present tense. No preverbal morpheme like  $\theta a$  or  $na$  are present, but the verb, i.e. the present stem and the present endings:

(1a) I	Stella	kser-i	$\emptyset$ ermanika.
The.fem.sing	Stella	know-3s.pres	German

<sup>20</sup>Footnote for this section is located in Footnotes 12 and 19 in Chapters 2 and 6, respectively.

<sup>21</sup> See Chapter 3 for more on the present as the unmarked stem, and the past as the perfective stem.

Stella knows German. (stative verb, hence receives stative interpretation)

(1b) I Stella μαθην-ι ⊗ermanika.

The.fem.sing Stella learn-3s.pres. German

Stella is learning German. (eventive verb, receives an imperfective interpretation)

2. *Imperfect Tense:* ∅ + *unmarked stem* + *past endings*

This combination gives the imperfect tense, and the only difference in form with the present is the past endings that mark the verb in the imperfect:

(2a) Διavaz-a oli mera (exθes).

study-1s.pst all day (yesterday)

I was studying all day (yesterday). (imperfective event)

(2b) tus ares-an aftu tu iΔus ta pehniΔia.

them please-3 pl.pst this.gen the.gen. kind.gen the.pl game.pl

They liked (/ or used to like) these games. (stative)

3. *Future Progressive:* θα + *unmarked stem* + *present endings*

The future progressive is actually formed by the futurate particle *θα* and the present tense of the verb:

(3a) θα se episkept-ome kaθe mera.

Fut. you.acc visit-1s.pres.pass every day

I will visit you every day. (imperfective event)

(3b) θα τον θim-ame ⊗ia panta.

Fut. him remember-1s.pres for ever

S/he will remember him for ever (stative).

4. *Conditional Future:* θα + *unmarked stem* + *past endings*

This combination forms the conditional future, which is actually ‘*θa*’ + imperfect. This form corresponds in meaning to the English *would* + *infinitive*:

- (4) *θa ton episkept-omun kaθe mera, ean...*  
 Fut. him visit-1s.pst.pass every day, if...  
 I would visit him every day, if... (imperfective event)

5. *na* + *unmarked stem* + *present endings*

This forms the present subjunctive, formed by ‘*na*’ + present tense:

- (5a) *Na perimen-ume li⊗o akoma?*  
 Na wait-1pl.pres a bit more  
 Should we wait a bit more?

- (5b) *Mu zitise [na tis tilefoname pu kai pu].*  
 S/he ask.perfv-3s.pst NA her call-1pl.pres ‘once in a while’  
 S/he asked me to call her once in a while.

6. *na* + *unmarked stem* + *past endings*

This form is used for past wishes:

- (6) *Na perimen-ame li⊗o akoma!*  
 Na wait-1pl.pst a bit more  
 If we only waited a bit more!

7. *∅* + *perfective stem* + *present endings (dependent form)*

This form, when it does not appear with *θa* or *na* it appears with a complementizer, or rarer by itself. We therefore call it the *dependent form*, which we deal with in Chapter 5:

- (7) *[Erθ-i] [Δen erθ-i] de θa ta paratis-un.*

Come.perfv-3s.pres ind.neg. come.perfv-3s.pres ind.neg fut. them give-up.perfv-3pl.pst

Whether s/he comes or not they will not give up.

8. *Aorist*:  $\emptyset$  + *perfective stem* + *past endings*

This combination forms the aorist:

(8) Ema $\emptyset$ -e Ispanika.

Learn.perfv-3s, pst Spanish

He learned Spanish (eventive).

# He knew Spanish (# stative, states can only be expressed by the imperfect tense)

9. *Future Simple*:  $\theta\alpha$  + *perfective stem* + *present endings*

As mentioned in Chapter 2 this combination forms the future simple:

(9)  $\theta\alpha$  stil-o to  $\otimes$ rama to proi.

Fut. send.perfv-1s.pres the letter the morning

I will send the letter in the morning (perfective interpretation)

10.  $\theta\alpha$  + *perfective stem* + *past endings*

This tense form is the perfective counterpart of the conditional future (10b). In English it is best translated by *must have + participle*:

(10a)  $\theta\alpha$  pi $\otimes$ -e na ton  $\Delta$ i.

Fut. go.perfv.3s.pst NA him see.perfv-3s.pres

Sh/e must have gone to see/ visit him.

vs

(10b)  $\theta\alpha$  pi $\otimes$ en-e na ton  $\Delta$ i.

Fut. go-3s.pst NA him see.perfv-3s.pres

She was going to visit him.

So again, we have an aspectual distinction between two tense forms, even in the

conditionals, determined by the stem.

11.  $Na$  + *perfective stem* + *present endings*

This is the perfective subjunctive, or traditionally called the past subjunctive which forms the perfective counterpart of the present or rather unmarked subjunctive in (5):

(11)  $Na$        $kathisume$        $li\otimes o$  sto parko?  
 NA            sit.perfv-1pl.pres      a bit in-the park  
 Should/Could we sit a bit in the park? (perfective interpretation)

12.  $Na$  + *perfective stem* + *past endings*

Again this form is the perfective counterpart of the form in (6):

(12)  $Na$  e-ftas-an                       $ara\otimes e$ ?  
 NA    aug-arrive.perfv-3pl, pst      (I wonder-particle)  
 I wonder whether they arrived.

**[2] Complex tense forms**

	Auxiliary		Non-finite form
$\emptyset$	unmarked stem	present endings	infinitive
$\theta\alpha$		past endings	participle
$\nu\alpha$			

Table (2) provides 12 possible combinations of the complex tense forms, i.e. all the perfect tense forms, such as the present, past, future, and the conditional perfect tenses, as well as the subjunctive perfect tenses, which are used to express wishes:

1. Present Perfect:  $\emptyset$  + unmarked stem + present endings + *infinitive*

(13)  $Tin$  eh-o             $\otimes norisi$ .

her have-1s.pres      met.perfv-inf.  
I have met her.

2. Past Perfect:       $\emptyset$  + unmarked stem + past endings + infinitive

(14) Ih-ame fi $\otimes$ i                              otan phres.  
aug.have-1pl.pst leave.perfv-inf      when call.perfv-2s.pst  
We had left when you called.

3. Present Perfect:       $\emptyset$  + unmarked stem + present endings + *participle*

(15) Ta                              eh-o                              stalmen-a.  
cl.obj.them                              have-1s.pres      sent.perf.pass-pl  
I have sent them/ they are sent.

4. Past Perfect:       $\emptyset$  + unmarked stem + past endings + *participle*

(16) Ta                              ih-a                              stalmen-a.  
cl.obj.them                              aug.have-1s.pst      send.perf.pass- pl  
I had sent them/ They had been sent.

5. Future Perfect:       $\theta\alpha$  + unmarked stem + present endings + *infinitive*

(17)  $\theta\alpha$  eh-un                              pa $\otimes$ osi                              me tetio kero.  
Fut. have-3s.pres      frieze.perfv-inf.      with this weather  
They must have frozen with this weather.

6. Conditional Future Perfect:

$\theta\alpha$  + unmarked stem + past endings + infinitive

(18) [ $\theta\alpha$  ih-an prolavi                              to treno] an den      itan      to atihima.  
Fut. have-3pl.pst      caught-up.perfv.inf.      the train if ind.neg. be-3s.pst the accident  
They would have caught up the train, if it weren't for the accident.

7. Future Perfect:       $\theta\alpha$  + unmarked stem + present endings + *participle*

(19)  $\theta a$  ine enimeromen-i  $\otimes$ ia to atihima.  
 Fut. Be-3s, pres inform.perf.pass-pl for the accident.  
 They must be informed about the accident.

8. Conditional Future Perfect:

$\theta a$  + unmarked stem + past endings + *participle*  
 (20)  $\theta a$  itan enimeromen-i  $\otimes$ ia to atihima.  
 Fut. Be-3s, pst inform.perf.pass-pl for the accident.  
 They must be informed about the accident.

9. Present Perfect Subjunctive:

$na$  + unmarked stem + present endings + *infinitive*  
 (21) [Na eh-is ksipnisi] otan  $\theta a$  er $\theta$ un.  
 NA have-2s, pres wake-up.perfv-inf when fut come-3pl  
 (You must) have woken up when they will be here

10. Past Perfect Subjunctive (wishes):

$na$  + unmarked stem + past endings + *infinitive*  
 (22) Na ihes er $\theta$ i noritera!  
 NA have-2s, pst come.perfv-inf earlier  
 I wish you had come earlier!

11. Present Perfect Subjunctive:

$na$  + unmarked stem + present endings + *participle*  
 (23) Na ine simpliromen-a ola!  
 NA be-3pl, pres fill.perf.pass-pl all  
 I wish everything has been filled in!

12. Past Perfect Subjunctive:

$na$  + unmarked stem + past endings + *participle*  
 (24) Na itan simpliromen-a ola!

NA be-3pl, pst      fill.perf.pass-pl all  
 I wish everything had been filled in!

We will now consider the non- finite forms:

**[3] non-finite forms**

unmarked stem	active	infinitival suffix
perfective stem	passive	past participle suffix
Passive Perfect stem <sup>22</sup>		present participle suffix

\*This form takes as a suffix only the passive present participle suffix

Not all of these possible combinations are used in Modern Greek as we shall see.

1. unmarked stem + active + present participle suffix

(25) [*Perimen-ontas* to leoforio], iΔe oti ksehase ta kliΔia tis.

Wait-act.pres.suffix the bus, see.perfv.pass-3s.pst that forget.perfv-3s.pst the keys hers

While she was waiting for the bus, she saw/realized that she forgot her keys.

(26) *I apotih-ontes* aftis tis eksetasis apoklonte apo to Δeftero meros.

The.pl fail-pres.part.pl this.gen the.gen exam.gen exclude-3pl.pass from the second part

Those that will fail this exam will be excluded from the second part.

2. \*unmarked stem + active + past participle suffix

This form is unattested even in Classical Greek.

3. unmarked stem + passive + present participle suffix

It functions either as an adjective or even as an adjectival noun:

<sup>22</sup> This form takes as a suffix only the passive present participial suffix. In Classical Greek though, all the combinations were possible, giving rise to multiple combinations.

(27) *I emfanizom-i s'afti ti sira...*  
 The.nom.pl appear.pass-nom.pl in-this series  
 The people that appear in this series...

- 4. \*unmarked stem + passive + past participle suffix
- 5. \*unmarked stem + active + infinitival suffix
- 6. \*unmarked stem + passive + infinitival suffix
- 7. \*perfective stem + active + present participle suffix

All these forms do not occur in Modern Greek.

- 8. perfective stem + active + past participle suffix

This form occurs mainly in formal speech:

(28) *I apohorisantes itan poli.*  
 The.nom.pl leave.perfv-pl.pst suff. be-3pl.pst many  
 Those that had to leave were a lot.

- 9. perfective stem + passive + present participle suffix

This form is another formal form that mainly occurs in ecclesiastic documents.

- 10. \*perfective stem + passive + past participle suffix
- 11. \*perfective stem + passive + infinitival suffix
- 12. perfective stem + active + infinitival suffix

The form in (12) is the infinitive which we have already seen. Both of the forms in (10) and (11) do not occur, i.e. are possible only in legal or ecclesiastic documents.

- 13. perfect stem + passive + present participle suffix

This is the participle that occurs in the perfect tenses which we have already seen.

To sum up, in this appendix we showed which forms may arise from the different

morpheme combinations. We have also seen that the current verbal system is simplified compared to the more inflectional Classical verbal system. Now that we have seen all the verbal forms we can go back to Chapter 3 and consider the aspectual properties of the verb, and the sentence overall.

## **Glossary for Abbreviations**

pa	-	past stem
perfv	-	perfective stem
perf	-	perfect (participle) stem
pp	-	passive participle
pres	-	present endings
pst	-	past endings
inf	-	infinitival ending
aug	-	verbal augmentation