A COGNITIVE MODEL OF TMA SYSTEMS

with special emphasis on Modern Greek and English.

by Agneta M-L Svalberg

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Department of Linguistics
University of Sydney

February, 1991
Declaration
Except where otherwise indicated
this thesis is my own work.

Agneta Svalberg
Abstract

It is the aim of this thesis to define and describe the invariant semantic core of tense, modality and aspect (TMA) categories on four consecutive levels: pre-linguistic concepts; universal (linguistic) meanings; language specific meanings; language specific uses.

The thesis consists of two main parts. Part I is a theoretical discussion of TMA universally, from a cognitive-functional perspective. The end results of this analysis are: suggested universal definitions of TMA categories, and a cognitive model representative of Indo-European TMA systems.

Part II describes the TMA systems of Modern Greek and English, with particular emphasis on the former. Language specific definitions and constraints on the use of TMA are formulated. The descriptive framework throughout is the TMA model along with the universal definitions presented in Part I. In contrast with the more theoretical discussion in Part I, the language specific chapters in Part II deal with TMA categories descriptively, in context. Both the surrounding social/situational context and the text as context are considered. Some longer Modern Greek newspaper texts are analysed and the use of TMA in this language is contrasted with English.

The thesis makes two main claims, which it proceeds to argue and provide evidence for. Firstly, it is claimed that the universal meanings of TMA depend on a few pre-linguistic concepts and cognitive abilities. Chief among these are the ‘coincidence concept’, i.e. the coincidence of a figure with its ground (Langacker, 1987 and Hale, 1986), and our ability to make comparisons (Langacker, 1987). As a result of the discussion of these concepts and abilities it is suggested that TMA systems, at least in IE-languages but possibly more generally, are organized along two intersecting parameters: DISTANCE and SUBJECTIVITY.
Secondly, it is claimed that tense, modality and aspect interact to a degree which make it imperative that they be studied as a system. Questions debated in the literature and which find a solution if the suggested approach is accepted are, for example, whether Perfect (in any particular language) is a tense or an aspect category and whether future is a tense or a modality. The analysis of TMA as a system also elucidates complex relationships such as that between subjunctives, infinitives and modality, and between the temporal semantic component of aspect, on the one hand, and tense on the other. Among the phenomena which are described in depth are tense shift in English, e.g. the use of backshifting in indirect speech and narrative/historical present, the contrasting uses of the aspects in English and Modern Greek and the use of complementizers in both languages.

The discussion in the thesis does not assume any prior knowledge of Modern Greek and all examples have been transliterated.
Acknowledgements.

Work on the topic of this thesis started as a response to the perceived needs of advanced adult EFL learners. My first debt of gratitude is therefore to my students at Psomiadis’ Language School in Thessaloniki, Greece and to its owner and director, Dionisios Psomiadis, who allowed me a free hand in the classroom. Teachers at the British Council, Thessaloniki were also always encouraging and willing to listen and comment at this stage; a special thank you to Ed Joyce and Luke Prodromou. Their response to my ideas persuaded me to initiate an MA on the topic in the Department of Linguistics, at the Aristotelian University of Thessaloniki.

At the university my focus changed from classroom applications to a more theoretical investigation of TMA. My supervisors in Thessaloniki, Prof. M. Setatos and Dr. I. Veloudis, gave me invaluable advice and guidance and never showed impatience with my faltering Greek. Without the combined knowledge of Linguistics and Modern Greek which they were able to provide, the description at hand would have suffered from many more shortcomings than what is now the case. Dr. Veloudis was also very generous in continuing to comment on material I sent him after I had left Greece. I also thank my friend Andy for hours and hours of patient and extremely competent assistance in converting my first drafts – in far from perfect colloquial Greek – into academic Greek.

Before having completed the MA degree, I moved to Sydney, Australia where I continued my research as a PhD student at Sydney University. This is where the bulk of the research was done. My supervisor at the beginning of the PhD was Dr. M. Walsh who gave most generously of his time and whose interest in my topic and belief in my ability never wavered at a time when such support was most needed. The latter part of the thesis was supervised by Prof. W. Foley. His
approach to linguistic analysis has been an immensely stimulating influence. His criticism of my work was always to the point. It was under his supervision that the thesis took its final shape.

Other important contributors to this thesis are the Greek speaking consultants who have helped me throughout. Two of my consultants in Australia were also linguists: Dr. P. Nassou and Dr. L. Papademetre, from the Dept. of Modern Greek, Sydney University (Dr. Papademetre is now at Flinders University in Adelaide). Their theoretical knowledge combined with their native speaker proficiency made them especially valuable as consultants.

In Greece, George Karfis answered many baffling language questions with great enthusiasm. In Sydney, Artemis Tzatzos and Penelope Doyle were valued language consultants. Artemis (in addition to being a consultant) proof read the Greek examples in the thesis and also helped me maintain my proficiency in Greek through conversation lessons. A special thank you to Lea Brown who proof-read the final version of the thesis.

Finally, I express my warmest thank you to friends, fellow graduate students and staff in the Department of Linguistics at Sydney University who in their different ways, have been a great support!

Any omissions, mistakes or misunderstandings are my own.
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Abbreviations of terms:

(Some of the abbreviations are only used in glosses of examples. Conventions for such glosses are outlined following the table of abbreviations.)

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<tr>
<th>Abbreviation</th>
<th>Term:</th>
</tr>
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<tbody>
<tr>
<td>ASP</td>
<td>aspect</td>
</tr>
<tr>
<td>AT</td>
<td>at (the point of reference)</td>
</tr>
<tr>
<td>AW</td>
<td>alternate world</td>
</tr>
<tr>
<td>CNTRL</td>
<td>central (coincidence)</td>
</tr>
<tr>
<td>CO</td>
<td>co-incidental (complement)</td>
</tr>
<tr>
<td>CONC</td>
<td>concessional</td>
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<tr>
<td>COND</td>
<td>conditional</td>
</tr>
<tr>
<td>CTP</td>
<td>complement taking predicate</td>
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<tr>
<td>DIST</td>
<td>distance</td>
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<tr>
<td>DTR</td>
<td>dependent time reference</td>
</tr>
<tr>
<td>E</td>
<td>event</td>
</tr>
<tr>
<td>ET</td>
<td>event time</td>
</tr>
<tr>
<td>F</td>
<td>fact</td>
</tr>
<tr>
<td>FUT</td>
<td>future</td>
</tr>
<tr>
<td>HAB</td>
<td>habitual (aspect)</td>
</tr>
<tr>
<td>HYP</td>
<td>hypothetical</td>
</tr>
<tr>
<td>IE</td>
<td>Indo-European</td>
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<tr>
<td>IP</td>
<td>immediate perception</td>
</tr>
<tr>
<td>IPFV</td>
<td>imperfective (aspect)</td>
</tr>
<tr>
<td>ITR</td>
<td>independent time reference</td>
</tr>
<tr>
<td>IW</td>
<td>Imagined World</td>
</tr>
<tr>
<td>KAK</td>
<td>knowledge &amp; acquisition of knowledge</td>
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<tr>
<td>MNEG</td>
<td>modal negation</td>
</tr>
<tr>
<td>MW</td>
<td>Material World</td>
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<tr>
<td>NCNTRL</td>
<td>non-central</td>
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<tr>
<td>PFCT</td>
<td>perfect (aspect)</td>
</tr>
<tr>
<td>PFV</td>
<td>perfective (aspect)</td>
</tr>
<tr>
<td>POST</td>
<td>after (the point of reference)</td>
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<tr>
<td>POT</td>
<td>potential</td>
</tr>
<tr>
<td>PRE</td>
<td>before the point of reference</td>
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<tr>
<td>R</td>
<td>reference point (point of reference)</td>
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<tr>
<td>RT</td>
<td>reference time</td>
</tr>
<tr>
<td>S</td>
<td>speaker’s present</td>
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<tr>
<td>SBNV</td>
<td>subjunctive</td>
</tr>
<tr>
<td>SUBJ</td>
<td>subjectivity</td>
</tr>
<tr>
<td>TMA</td>
<td>tense, modality, aspect</td>
</tr>
<tr>
<td>TNS</td>
<td>tense</td>
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</table>
Conventions for Glosses and Transliteration.

Glosses:

Information that is not relevant to the analysis in this thesis has been left out of the glosses to make them easier to read. For example, case, person, gender and number marking on pronouns and articles has, as a rule, been omitted. Categories marked on the verb, in contrast, have been included in the gloss in the order indicated below. The most frequent glosses are the ones listed below. Other glosses can be found in the list of abbreviations above.

Aspect:
- IPFV....Imperfective
- PFV....Perfective
- PFCT....Perfect

Tense:
- p......past
- np......non-past

Number:
- s......singular
- p......plural

ART....indefinite article
DEF....definite article
GEN....genitive case
MNEG....modal negation
NEG....negation
OBJ....object

Examples:
Categories marked on the verb are glossed in the order aspect, tense, person, number, as in the Modern Greek example:

(a) Eigrapse
writePFVp3s (i.e Perfective, past, third singular)
She wrote

The aspect gloss is replaced by a hyphen when the verb does not have distinct aspectual forms. This is the case, for example with the verb ‘be’ in Modern Greek:

(b) ige arga.
be-np3s (non-past, third singular)
It is late.

Hyphen (−) is also used when the translation equivalent of one word in the original consists of two or more words, e.g. fenete (Modern Greek) is in some contexts glossed as ‘be-visible’.

Plus (+) is used when two lexical items in the original are written as one but need to be glossed separately. For example, apo'ki (Modern Greek) glossed as ‘from+here’.
Transliteration:

All the Modern Greek examples have been transliterated. Below, I am providing a table of those transliterations which might not be obvious. For those readers who have some command of the language, I have also listed the most common spelling in Modern Greek.

<table>
<thead>
<tr>
<th>Sound</th>
<th>Translit.</th>
<th>MGr. spelling</th>
</tr>
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<tbody>
<tr>
<td>[x] or [צ]</td>
<td>h</td>
<td>x, i</td>
</tr>
<tr>
<td>[j]</td>
<td>j</td>
<td>γ</td>
</tr>
<tr>
<td>[ŋ]</td>
<td>ng</td>
<td>γγ', γκ</td>
</tr>
<tr>
<td>[θ]</td>
<td>th</td>
<td>θ</td>
</tr>
<tr>
<td>[ð]</td>
<td>dh</td>
<td>δ</td>
</tr>
</tbody>
</table>

Vowel:

| [u]    | ou         | ou            |
I. THE CONCEPTUAL BASIS

Introduction.

The topic of the present thesis is TMA (tense – modality – aspect) systems. It is concerned with the encoding of TMA only by verbs and modal particles. The term ‘event’ will be used as a general term throughout to denote that to which the predicate refers. (Other authors use, for example, ‘situation’ or ‘event and state’.)

The investigation proposes to do the following:

1/ To present a theoretical framework for the analysis of Indo-European (IE) TMA systems.

2/ To base this framework, as far as possible, on universal primitive notions.

3/ Within this framework, to formulate and test hypotheses about the properties of IE TMA systems.

The hypotheses formulated are embodied in a model of the type of TMA system claimed to be representative of Indo-European languages. It will henceforth be referred to as ‘the (TMA) model’.

It was felt that a validation of the hypotheses formulated required the application of the model to the description of particular languages. The investigation therefore also has as one of its major aims:

4/ To describe the TMA systems of two IE languages, their organization, meaning potential and use.

Given the inevitable constraints on a dissertation, it was not considered feasible to investigate even a representative sample of IE languages at any depth. Instead, two languages – Modern Greek and English – are described, the former in more detail. The analysis of these languages suggests that the type of TMA system described here might in fact be common to all IE languages. My own command of other IE languages plus a cursory investigation of existing descriptions of, for
example, Lithuanian (Dambrunias et al., 1972) and Persian (Levy, 1951, Elwell-Sutton, 1963) suggests that this would be a valid claim to make. In anticipation of future, more extensive investigations I will, however, make the more cautious claim that the model is *representative of* TMA systems in IE languages.

A brief characterization of such systems would include the fact that they encode exactly four reference points and that the main primitive notions expressed are DISTance and SUBJectivity. It means, among other things, that the encoding of an event may depend on whether its reference point is past or non-past, realis or irrealis. However, as will be demonstrated, the implications are not quite as straightforward as this statement might suggest.

The model to be presented here is an abstract representation of TMA meanings expressed in IE languages. On to this model can be superimposed language specific realizations of these meanings. A description of the TMA system of a particular language would also require rules which operate on the abstract system, constraining its use. Such constraints will be provided for Modern Greek and English.

The approach rests on a number of assumptions. One is that TMA universally encodes an invariant semantic core. The evidence for this in the chapters ahead are the proposed universal definitions of modality and aspect (and subcategories) and the definition of reference time and event time implicit in the description of the same. Another assumption is that the description of TMA as constituting 'systems' in languages is both descriptively accurate and has explicative power. This assumption seems to me a sound one to make since notions expressed by TMA crosslinguistically show considerable semantic overlap and are also often encoded in similar ways. The semantic overlap is made evident by the fact that the same morpheme may be used to encode more than one category. An example is aspect which commonly also encodes event time (see 1.6). In addition, tense, modality and aspect categories fulfill similar discourse
functions. In Modern Greek one can, for example, indicate what can be loosely
called ‘tentativeness’ by manipulating either tense or modality or aspect (although
the effect may vary somewhat). It would therefore seem desirable that TMA be
described as related in systemic ways, i.e. as constituting systems in the various
languages.

For this one needs a theoretical framework, it seems to me, within which
the three categories can be described in terms of the same, invariant parameters.
(Hence the first and second aims above.) The solution I am proposing here is a
model of a particular type of TMA system as an outcome of (cognitive) acts of
comparison. I am suggesting that, at least in Indo-European languages, the
parameters along which these comparisons are made are DISTance and
SUBjectivity. The exact meaning of these terms, as used here, will be made clear
in chapters 1–2.

Elements of the theoretical framework are based on the works of other
linguists. I have relied on the works of linguists such as Reichenbach (1957) and
Bull (1963) in my analysis of tense and on mainly Langacker (1987) and Hale
(1986) for a cognitive perspective on grammar. The investigation of aspect owes a
lot to, for example, Comrie (1976), Chung and Timberlake (1985) and others. The
analysis of modality uses the classifications in Palmer (1979 and 1986) and
complementation is discussed within the framework proposed by Noonan (1985).
The influence of the works of these and numerous other linguists on the model
proposed here will become clear, especially in the three first chapters.

The notions DISTance and SUBjectivity are by no means new in the
linguistic literature. They have been discussed, sometimes under slightly different
labels, by many eminent linguists. Seiler (1971) associates the meaning
[+dissociative] with Ancient Greek Optative, Fillmore (1982) uses the terms Distal
and Proximal in his analysis of deixis, Lyons (1982) discusses subjectivity in
relation to deixis and both Benveniste (1966) and Langacker (1985 and 1988)
deal with subjectivity, albeit from different perspectives. Most of the work which refers to these notions seems to have been done on IE languages. However, Steele (1975) posits the feature DISSOCIATIVE in Proto–Uto–Aztecan to explicate the same kind of non–temporal uses of past verb forms as in IE–languages. Furthermore, a crosslinguistic study of the use of future verb forms carried out by Ultan (1978) suggests that the relevant parameter is SUBjectivity, although the author himself uses the term Uncertainty. My own independent, pre–theoretical analysis of Modern Greek, also resulted in a model which was implicitly based on the DISTance and SUBjectivity notions. I therefore formulated, in the early stages of my investigation, the hypothesis that DISTance and SUBjectivity were primitive notions expressed in all languages and, secondly that they were highly likely to be expressed in TMA systems. I have to date not found anything which would invalidate this hypothesis and so it remains a working hypothesis to be further investigated in future.

On a smaller scale than the universal, I would suggest that this thesis shows DISTance and SUBjectivity to be (what I will call) the Organizing Principles of any typical Indo–European TMA system. This has not, to my knowledge, been suggested before. It implies that both IE–languages described here, Modern Greek and English, have the same type of TMA system. What is meant by this is that the syntactic or discourse rules for how TMA meanings are encoded in these languages operate on the same abstract resource or potential (the suggested TMA model). The rules may consequently show language specific differences, but only within the constraints of the common system.

The analysis has been approached on four levels: pre–linguistic concepts and cognitive abilities; universal (linguistic) meaning; language specific meaning; language specific use. This is reflected in the organization of the thesis. The thesis consists of two parts. The pre–linguistic/cognitive underpinnings are dealt with first (Part I). Discussed are, for example, such concepts as Ego, World and ‘figure
and ground' (Wallace, 1982) and our ability to make comparisons (Langacker, 1987). They are discussed in relation to tense, aspect and modality, in that order. Part II deals with language specific meanings and uses, with special reference to Modern Greek and English.

Part I (chapters 1–3) presents TMA as an integrated system. Although the model is, as mentioned above, in important ways based on the works of other linguists it differs importantly in that it allows an analysis of the interrelationships and overlaps of TMA categories.

In chapter 1, two subcategories of tense, reference time and event time, are distinguished. This helps explain the simultaneous existence of ternary sequence (past – present – future) and a binary tense opposition (past – non-past) in IE tense systems. The relationship of aspect to event time is also explored in this chapter. Most importantly, the four reference points encoded in the type of TMA system being described are established and it is shown how they relate to DISTance and SUBJECTivity. Past verb forms are said to denote [+DIST]; that is, DISTance from the speaker in terms of time, reality or personal involvement. The choice of a spatial metaphor for the temporal and non-temporal meanings of tense rests on the argument that space and time are semantically similar and therefore often encoded in similar ways. In this context, it might also be noted that the term ‘location (of an event)’ is used throughout the thesis with a temporal meaning.

Chapter two explores the crosslinguistic validity of the categories Perfective, Imperfective and Perfect and proposes universal definitions of these aspects. TMA categories generally are seen to have a pre-linguistic, cognitive base and the definition of aspect in particular is seen to require the introduction of the notions event interval and coincidence (see Hale, 1986, on ‘coincidence’). An event interval is a time period including the event but which may or may not be coextensive with the event. As an example, consider the utterance I am leaving!. The Imperfective form of the verb here refers to an event interval from the point of
reference ('the speaker's now') up to and including the event, perhaps days later. In this case, the beginning of the event interval coincides with the point of reference. Not only the Imperfective, but all three aspects are defined in terms of the extension (or not) of the event intervals they refer to and according to the type of coincidence they denote. Finally, it is suggested that the description of Indo-European TMA systems put forward here may contain elements which are of more general validity. Some exploratory comments are made in this respect about Hawaiian (Austronesian), Hawaiian Creole (English based) and Kiksht (Chinookan, North America).

Chapter 3 discusses the SUBJectivity notion which is shown to be expressed by, for example, modal verbs. The relationship between modality and SUBJectivity is clarified. The question is asked whether one can profitably talk about 'irrealis modality', as suggested by Givón (1984) and whether complements express modality (Ransom, 1986). The queries are answered by reference to a universal definition of modality. Definitions of sub-categories of modality are also suggested. It is claimed that all modalities deal with necessity and possibility and that the expression of these concepts is an outcome of acts of comparison (Langacker, 1987).

Chapters 4, 5 and 6 (Part II) are descriptive and deal specifically with Modern Greek and English TMA categories. To the extent possible within the confines of the thesis, the use of TMA is analysed in context. Both the surrounding social/situational context and the text as context are considered. Some longer Modern Greek newspaper texts are analysed. The descriptive framework throughout consists of the TMA model and the universal definitions presented in Part I.

Chapter 4 deals with tense in the verb group and in connected discourse. The shifting of tense is discussed in some depth. Shifting can take place, for example, from non-past forms to past forms in indirect (reported) speech or from
past forms to non-past forms in narratives ('narrative/ historical present'). The rules for such shifts and their frequency in different genres are seen to differ in the two languages being described. In both languages the rules are shown to operate on the TMA system as described in Part I.

Chapter 5 establishes the language specific meanings of the aspects in Modern Greek and English and shows that they are compatible with the universal definitions given in chapter 2. In order to make this compatibility of the language specific with the universal clearer, I will be using the universal terms Perfective, Imperfective and Perfect for the language specific aspectual categories too. The differences between the languages are apparent in the meaning specifications mentioned and also in language specific rules for the use of aspect, formulated in this chapter. Especially in the case of Perfect aspect, it is found that Modern Greek and English differ in that rules are more often discourse driven in the former and grammaticized in the latter. The rules will show how the same abstract TMA system can be utilized in different ways by different languages.

Chapter 6 sets out to substantiate the claim made in Part I that SUBJectivity is one of the two main parameters around which the Modern Greek and English TMA systems are organized. To this end, the chapter deals with modality and complementation.

Chapters 3–6 are by no means a complete account of Modern Greek or English tense, modality and aspect. I have chosen to focus on issues related to the validity of the TMA model proposed in Part I. The interested reader might want to consult Mackridge (1985) for additional information on Modern Greek. The description of English concentrates especially on points where it differs from Modern Greek.

In the analysis of Modern Greek I have been helped to some degree by my own knowledge of the language. However, I have also relied heavily on the help of native speaker consultants and on text sources such as newspapers and
magazines (see 'Text sources'). My consultants (see Acknowledgements) were all, except one, native Greeks either living in Greece or who had left Greece at an adult age. One informant was born in Australia by Greek parents but has native command of Greek. The analysis of English is based mainly on my own knowledge of the language, but the more marked examples have been checked for acceptability with native speakers.

Given the topic of this thesis, it is perhaps inevitable that many rather awkward terms and abbreviations are used. In some cases there was a choice between using long established but potentially confusing terms (e.g. deontic modality, perfect – perfective aspect, subjective and subjunctive) or coining new ones. I have generally chosen to use established terms to ensure that the relation of the present work to that of other linguists be more easily assessed.
Chapter 1: Tense and its relationship to primitive notions.

This and the following two chapters are concerned with the assumptions and hypotheses on which the language specific description presented in the rest of the thesis is based. Many eminent linguists have taken an interest in the area of TMA and so an integral part of chapters 1–3 is a discussion of the works of those who have most profoundly influenced the direction of my own analysis.


In this section it will be shown that tense systems are the result of acts of comparison of locations in time and secondly of ‘real’ and ‘unreal’ locations (see Introduction on use of the term ‘location’ and also 1.3).

The notion of time involves at least a notion of T1 as opposed to T2, i.e. it involves the perception of two locations in time as being different. Fundamental to the concept of time is thus our ability to make comparisons. In Cognitive Grammar, Vol. 1 (1987) Langacker states:

Fundamental to cognitive processing and the structuring of experience is our ability to compare events and register any contrast or discrepancy between them. (ibid: 101)

‘Event’, in the above quote, refers to a cognitive event. The perception of a dark spot would be an example of such an event. It would include the comparison of the darkness of the spot with the degree of darkness of its background. This is a necessary event for the perception of the spot as being dark. Langacker goes on to say that such cognitive acts have three components: the standard, the target and the comparison of the two (his term is ‘scanning’). The standard is the component which:

serves as a baseline event or point of reference, relative to which the target is evaluated. (ibid: 102)

‘Point of reference’ is used here in a general sense not specifically to do with tense. Langacker uses S for standard and T for target. I shall prefer St for the
former to avoid confusion with S meaning moment of speech. (Both S and St will be used below.) An act of comparison is denoted by St>T.

Acts of comparison thus require a standard. Notions such as ‘now’ – ‘then’, ‘real’ – ‘unreal’ are perceived through acts of comparison. I suggest that the primary standard for such acts in any TMA system is the perceiver, i.e. the speaker or, in more general terms, Ego. The fundamental role played by cognitive acts of comparison in giving structure to our perceptions thus implies the centrality of Ego. Ego, or ‘the speaker’ (I shall use the terms interchangeably) is the assumed point of reference from which any communication takes off, just as it is the point from which children’s cognitive and linguistic development starts. On this topic, Cox (1986) states that the child relates deictic terms (e.g. I/you, here/there) first to herself and her own position. That the child takes herself as the initial reference point is simply, according to Cox, because this is “a stable and useful reference point to adopt” (ibid:87). I would suggest that this can be stated in stronger terms; the child’s own self (or the speaker’s own self) is the only stable reference point available.

Langacker points out that the assignment of standard and target functions is not fixed; what is standard in one instance may be the target in another. This applies also to tense systems. Although the most fundamental point of reference in any tense system is the speaker (his/her location in time, perception of reality etc) other points can also be taken as standards in second or even third order acts of comparisons. Such complex comparisons will be discussed later on (see especially 1.4.2).

I shall use S to denote the primary standard, i.e. the ‘moment of speech’ and ‘speaker/Ego’. If an event is located at S, then S is the standard of comparison and the location of the target event; the target event coincides with S. What is being compared in the tense system is thus first of all the location of events with the location of S. Events can coincide with S or not coincide with S.
coincidence or lack of coincidence with S can be expressed, for example, by ‘now’ versus ‘then’ or ‘here’ versus ‘there’. A number of related issues which have to be ignored for the moment will be dealt with later, e.g. the question of relative distance between events and the possibility of second and third order comparisons.

In terms of time, S is the present, without any specification of its extension. Events which coincide with S are therefore present. But temporal location is only one of the possible parameters of comparison. Events can also be compared with S in terms of reality status. Events which coincide with S are real because directly experienced rather than, for example, anticipated. Events at S can thus be present and real. These are the most important parameters of comparison. It is important to note that an event whose location does not coincide with S is not necessarily considered non-present and unreal at the same time. The status of the event depends on which characteristic of S is singled out for comparison. If the parameter of comparison is reality status, then an event ‘not at S’ is unreal. If the parameter is temporal location, then an event ‘not at S’ is past or future.

Ego can thus extend his/her conceptual realm from complete egocentricity by distinguishing between the here/now and the ‘other’, or the there/then (for a discussion of space – time, see 1.3). The location ‘here’ presents no problem since it is grounded in Ego. ‘Here’ is the location of the speaker. The location ‘there’, in contrast, is unspecified. I suggest that there are two possibilities: ‘there’ is either a location in the Material World (MW) or in the Imagined World (IW). A recalled past event, for example, is located ‘there’ in the Material World. An event which is merely anticipated, on the other hand, is located ‘there’ in the Imagined World. This can be illustrated as below:
Fig. 1 The Material and the Imagined World.

The World can be seen, in its most primitive form, as a plane across which Ego moves. What I call the Material World is the world of being and experiencing on this plane. Ego is thus located in the Material World. In language, the perception of the Material World gives rise to the concept of ordered events on a plane (represented by a line in the figure). This is the notion of sequence. Events can also be at varying distances or degrees of remoteness from Ego. Both the notions of distance and sequence are relevant to tense and will be discussed in depth below.

Ego can also extend his conceptual and linguistic realm into what I call the Imagined World: the realm of thoughts, ideas, emotions etc. This is the World of imagination in the widest sense of the word. (One can, of course, imagine a Material World, but more about that later.)

The claim I am making is that the primitive, pre-linguistic basis for TMA systems is 1/ our cognitive ability to make comparisons and 2/ our perception of Ego as the unmarked standard against which a target is compared. This gives rise to, what for the moment can be called, a ‘here’–‘there’ opposition. I am further suggesting that the Material World – Imagined World dichotomy, in other words our ability to distinguish between what is real and what is not, is fundamental to the organization of TMA systems.

It is interesting to compare the semantic primitives suggested by Wierzbicka (1988) with the primitive notions I have (independently) arrived at.
<table>
<thead>
<tr>
<th>Primitive notions in TMA systems</th>
<th>Semantic primitives acc. to Wierzbicka (1988)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ego/Speaker</td>
<td>I</td>
</tr>
<tr>
<td>here= at S</td>
<td>this &amp; place/time</td>
</tr>
<tr>
<td>there= not at S</td>
<td>other &amp; place/time</td>
</tr>
<tr>
<td>Imagined World</td>
<td>imagine/think &amp; world*</td>
</tr>
<tr>
<td>Material World</td>
<td>know &amp; world*</td>
</tr>
</tbody>
</table>

* = primitives 'under consideration' (ibid:10).

Table 1 Some primitive notions in TMA systems and their correlation with primitives posited by Wierzbicka (1988).

Wierzbicka (1988:10) posits 15 semantic primitives. In addition to the ones in table 1, these are you, someone, something, want, don’t want, say, become and part. The primitives world and other which are asterisked in the list, are included in a set of possible primitives “still under consideration”. No negation is included among the primitives, except as part of the expression don’t want. The comparison in table 1 shows that concepts such as ‘here’ and ‘there’ may indeed be able to be further explained by even more primitive notions. In this thesis I shall refer to the degree of ’primitiveness’ of the notions in the left hand column as ‘primitive’ although they may not be in an absolute sense.

The reason I have chosen to represent ‘here’ and ‘there’ as being equivalent to both place and time is that neither seems more fundamental than the other in the TMA system. It will be shown throughout this thesis that linguistic resources which are used to express temporal location also invariably realize non-temporal notions. Past tense forms, for example, are also used for tentativeness. There seems to be no a priori reason to assume that the non-temporal use derives from a temporal rather than from a spatial underlying meaning. In any case it is a matter which cannot be fully investigated in the space available. I would be inclined to think that the underlying meaning of both ‘past event’ and past forms for ‘tentativeness’ is a distance from S, i.e. ‘location not at S’ (see 1.7.3). For the analysis of the TMA system it does not seem to matter which – if either – is the
prior concept, since both can be considered primitive and so I shall not attempt to keep spatial and temporal notions strictly separate (see also 1.3).

Implicit in the above discussion is the view that the primitives on which TMA systems are based are universal and pre-linguistic. They do not necessarily manifest themselves as lexical items in all natural languages (cf. Wierzbicka, 1988). However, as this thesis aims to show, they do become apparent in the ways TMA systems are organized. The claim that they are universal will also be substantiated in the following chapters.

1.2. SUBJECTivity and DISTance.

Events in the Material and the Imagined Worlds clearly have different status. Events in MW can be verified by persons other than the perceiver (or ‘experimenter’). Events in IW, i.e hypotheses, expectations, ideas and the like, ‘exist’ only in the perceiver, hence they are very closely linked to Ego and this ‘egocentrism’ of events in IW make their expression subjective. Events in MW are, relatively speaking, more objective. I shall therefore refer to IW events as [+SUBJ] and to MW events as [−SUBJ]. An example of a [+SUBJ] event is a future event. It is located in IW. An example of a [−SUBJ] event is one that is ongoing at S and therefore located in MW. Which events are treated as [+SUBJ] is to some extent languages specific. Nakkarxa (Eather, 1990), for example, encodes negated, remote past and future the same way, showing that they are not considered to differ in terms of SUBJECTivity. Generally speaking, ‘here’ versus ‘there’ can be described as differing in reality status. This difference is often encoded as SUBJECTivity.

The other major parameter of comparison is time. The difference between ‘here’ and ‘there’ in terms of temporal location is distance in relation to S. An event located ‘here’, i.e. at S, is [−DIST]; the location of S and the event coincide. An event located ‘there’, i.e. ‘not at S’, is [+DIST]; its location does not coincide
with S. S is therefore both [−SUBJ] and [−DIST]. It is the unmarked location, the
standard against which events are compared.

![Diagram]

**Fig. 2** The outcome of comparisons of temporal location and reality status of events.

In fig. 1 and fig. 2 a convention has been introduced of displaying location in the
Material World in the upper half of the diagram and location in the Imagined World
in the lower half. The three different points in the diagram (* and + (twice)) can
represent, for example, past − present − future. The trichotomy can be stated
more generally as PRE − AT − POST in relation to S. It denotes *Sequence* on a
plane. In fig. 2 the plane is represented by a line. The line is broken in this figure to
show that future events can be seen as being located in the iW. It will be shown in
later parts of this chapter that the notions of a plane (Sequence and DISTance)
and that of a MW and an iW are combined in many TMA systems, e.g. in IE
languages generally (see 1.5, discussion of fig. 8). The combination of Sequence
and DISTance in these systems can be illustrated with English realizations:

<table>
<thead>
<tr>
<th>[+DIST]</th>
<th>[-DIST]</th>
</tr>
</thead>
<tbody>
<tr>
<td>had</td>
<td>S</td>
</tr>
<tr>
<td>gone</td>
<td>will</td>
</tr>
<tr>
<td>went</td>
<td></td>
</tr>
<tr>
<td>go</td>
<td>go</td>
</tr>
<tr>
<td>PRE</td>
<td>AT</td>
</tr>
<tr>
<td>AT</td>
<td>POST</td>
</tr>
</tbody>
</table>

**Fig. 3** DISTance and Sequence of events.

It involves a two stage comparison of locations: (the location of) an event is firstly
compared to S and found to be either [+DIST] or [−DIST]. The outcome of the
comparison, e.g. the [+DIST] location is taken as standard for the second comparison. This time the parameter of comparison is Sequence in relation to a [+DIST] location. For example, the event expressed by had gone in fig.3 is PRE a [+DIST] standard. (1) is an example of the use of a PRE form:

(1) When I arrived she had already gone without me.

Such two stage comparisons will be discussed further in section 1.4.2 which deals with locations of events as outcomes of acts of comparison.

Although languages differ in the way their TMA systems are organized, there is evidence to suggest that DISTance and SUBJectivity are, in fact, organizing principles of TMA systems generally (see 2.9 on some non-IE languages). Languages may make use of the gradability of either or both concepts. Hence DISTance can be more or less remote from the here/now and many languages have several remoteness distinctions in the past and/or future. At the remotest end the Material tends to blend with the Imagined World (see the reference to Nakkara above). This can perhaps be explained by the difficulty in ascertaining the truth value of remote events – especially those of which written records have not been kept. This is not to say that even mythical events are any less real to the speakers than other events. They simply belong to a realm where the Material and the Imagined Worlds blend (see also discussion in 1.5 and fig.9).

1.3. Tense as a spatio-temporal concept.

It was said in 1.1 that the World can be understood as a plane across which Ego moves. One has only to examine the lexical content of discussions concerning tense to discover the close connection between tense and the spatial relationships of location and plane. Givón (1984) defines tense as involving:

primarily – though not exclusively – our experience/concept of time as points in a sequence, and thus the notions of precedence and subsequence.

(Givón’s italics and bold print, ibid:272)
This is the PRE – AT – POST Sequence that was discussed above in 1.1. Comrie (1985) states that:

all clear instances of tense cross-linguistically can be represented in terms of the notion of a deictic centre,..., location at, before or after the deictic centre, and distance from the deictic centre. (ibid:9)

The unmarked deictic centre is, it was said in 1.1, the speaker, or in temporal terms, the moment of speech. It has been shown that both DISTance from a deictic centre and Sequence are expressed in the English TMA system (fig.3). Typologically distinct languages will be discussed in 2.9.

Terms such as ‘precedence’/‘subsequence’, ‘centre’ and ‘distance’ suggest the notion of sequence on a plane, as already mentioned. This notion is also apparent in everyday expressions such as the day before/after yesterday.

Examples abound, in many typologically distinct languages, of originally spatial terms having temporal meaning. Clifford Hill (1978), for example, reports that mbera and thuta in Kikuyu (Bantu, Congo–Kordofanian) have both a spatial in front of/behind meaning and and a temporal meaning equivalent to before/after. In Hawaiian (Austronesian) the particle nei can mean present in time or place (Alexander, 1968). Kiksht (Chinookan, North America), finally, has two directional verb affixes, u and j, with the spatial meaning from here to there and from there to here which are also used in a temporal sense (Hymes 1975, see also 2.9). There are indications that spatial notions are primary. Ultan (1978) carried out a crosslinguistic study of future tenses and found that future markers were commonly used for purposes other than to mark futurity. Regarding the spatial notions and futurity he concludes:

While there were many cases where a future tense evolved from an earlier spatial marker (directional, deictic), there were no instances of a future tense being used to refer to a spatial category. (ibid:118)

While temporal and/or modal categories can evolve out of spatial markers the reverse does not seem to be the case.
The temporal notions expressed by tense are very different from other types of time, e.g. clock or calendar time, in that tense relates events to the temporal location of the encoder or ‘observing ego’ (Bull, 1963). This location—the absolute present or S—determines the end of the past and the beginning of future time. No such deictic centre determines where January 5 finishes and January 6 begins. No verb system actually refers to time in the clock or calendar time sense. Rather it refers to location. *Tense is thus more closely linked to spatial notions than are other kinds of time.* Since tense is different from other time concepts and since it is not even exclusively temporal (it deals also with reality status, for example) I will prefer the terms ‘here’ and ‘there’ rather than the more clearly temporal ‘now’ and ‘then’.

Another intervening notion is that of movement across a plane. Clifford Hill (1978) states that:

> all languages that anchor time in horizontal space presuppose a line along which either movement or static relationships between fixed points can be measured. (ibid: 485)

The movement can be of two kinds; either the encoder is moving unidirectionally and time is fixed, or vice versa. The fixed time view can be illustrated by Ego advancing along a path and is clearly expressed in e.g. (English) *I’m going to do it.* and (French) *Je viens de le faire,* (I’ve just done it. Literally: I come from doing it.).

Closs Traugott (1978) says about languages that have an ‘imaginary time-line’ concept that:

> ..one comes from the past, which is in the Source, or ablative, relation....one goes toward the future, which functions as Goal or allative. (ibid: 376)

This view contrasts with the ‘fixed Ego – moving time’ alternative which can be pictured as Ego standing in a river facing up-stream. It is night time. The darkness symbolizes the fact that we have direct experience only of the now and here so from this position Ego can observe only the ever changing present. The future is yet to come, what has floated past is past. This conception is expressed
in phrases such as in days gone by, this coming Monday, and in ‘come–futures’ as in, for example, Swedish: Det kommer inte att gå. (It won’t work. Literally: It comes not to function.)

Whichever view is chosen, the sequence of events remains fixed and can be represented as dots on a time–line with the deictic centre, e.g. Ego’s location, in the middle, and PRE – POST locations on either side (fig.3). The two perspectives can therefore coexist in one and the same language, as the English examples in the preceding two paragraphs have shown.

The distance between events is not quantified in the verb systems of IE languages. A past form in English or Modern Greek only conveys anteriority in relation to S but says virtually nothing about the relative temporal distance (but see discussion in 5.4.3). There are, however, many non–IE languages which have a number of remoteness distinctions in the past and/or future. Such distinctions are often quantified by being related to natural cycles such as the day, year or season (Comrie, 1985). Degrees of remoteness may also convey the speaker’s subjective perception of events rather than objective time–spans (see 5.3.3 on Modern Greek and 2.9 on Kiksht).

1.4. Temporal reference.

1.4.1. The Reichenbachian view.

An analysis which greatly facilitates the understanding of tense is that presented by Reichenbach in Elements of Symbolic Logic (1947; in McMahon, 1976). It is relevant to the present discussion because it can be used to describe the cognitive acts of comparison of location discussed in 1.1. It is based on three points in time:
a/ the speaker’s present (S)
b/ the point of time reference (R), which is a:

   temporal setting or background relative to which an event
   predicated in the utterance or in the longer discourse is
   located.  (Fleischman, 1982:7)

c/ the event (E).

In reference to Reichenbach’s analysis Marion Johnson (1981) says:

   This analysis has been influential because, for example, it
   provides a satisfactory account of the difference between a
   simple past tense (as in the English he left) and a present
   perfect form (as in he has left). For the former, both the
   point of the event and the point of reference are earlier than
   the point of speech, whereas for the latter only the point of
   the event is earlier.  (Ibid: 145–6)

In other words, present perfect has present reference, which can be written
E°R/S. The event E precedes R which serves as point of reference or standard for
the comparison. The point of reference or ‘location’ R equals the location S. Thus
E precedes R conflated with S: E°R/S. This is the relationship expressed by
present perfect (but see also chapter 2 on aspect). Simple past, in contrast, has
past reference, E/R°S, or the location of E, which is R, precedes S. As the
discussion of Johnson’s comment illustrates, Reichenbach’s S, R and E do in fact
describe locations on which comparisons are carried out. S is the unmarked
standard which grounds the whole tense system in Ego/the Speaker. R is also a
standard against which events are compared. It can be the same location as S but
it can also be a different location. E finally is the target which is being located
relative to a standard.

The point of reference is not always S, i.e. R is not always the temporal
location of the speaker. It can also be PRE or POST S. Below are some tentative
interpretations of temporal relationships between points (cf. Comrie, 1985:125–9
and McMahon, 1976 on Reichenbach). The notation, which will be discussed and
revised in 1.4.2, is: slash (/), meaning ‘conflated with’, and ‘wedge’ (”) meaning
‘preceding’. 
a. Pleased to meet you. E/R/S
b. He arrived on the Monday. E/R'S
c. He had already arrived. E'R'S
d. I knew he would come. R'E'S
e. I shall see John. S'R/E
f. I will have seen John. S'E'R or E'S'R or E/S'R

As discussed by Comrie (1985) the relation of the event E to the moment of speech S can often not be determined without knowledge of the context, since the distance between points is not quantified in the verb system. The last of the examples in (2) I will have seen John, can be understood in three different ways: S'E'R or E'S'R or E/S'R. The relationship between S and the point of reference is given: S'R. The event, E, is predicated as occurring before R, which is a future point in time, but how long before is not specified. It may be inferred from context to occur either between S and the reference time or it may be occurring at the moment of speech or it may already have occurred before S. Comrie therefore suggests that R should be specified relative to S and E relative to R, with no direct temporal relation allowed between S and E. The future-in-the-past, as in ex.(2) d, would then be represented by the combination of R'S – a point of reference preceding S, and R'E – an event following the point of reference, with the relation between the event E and the moment of speech S left unspecified. (Suggestions for a notation which can capture this in a more economical way will be put forward in 1.4.2.) A similar view is expressed by Bull (1963) when he states that:

(verb systems) can be understood only by returning to the axiom that events, like points on a line in space, can be meaningfully organized only in terms of one axis of orientation at a time. (ibid:24)

In the terms introduced in 1.1, this means that the location of events is determined by acts of comparison involving only one standard at a time.

The question then arises: Is the number of possible axes of orientation limited?

Comrie (1985) points out that conceptually it is possible to build up quite complex chains of reference points. This can be illustrated by the following ‘mini-narration’ (cf. Comrie 1985:76):
(3) John left for New York; by the time he got there, the news of his resignation would have spread.

An analysis of the text can be rendered in the tentative notation introduced above as:

\[
\begin{align*}
\text{IF R1/S:} \\
\text{left} & \Rightarrow E1 \wedge R1/S \wedge B2 \\
\text{got there} & \Rightarrow E2 \wedge R2 \wedge B3 \\
\text{would have spread} & \Rightarrow E3 \wedge B3 \\
\end{align*}
\]

I have assumed S to be the (only) reference point relative to which the first event is located. That is to say: R1/S. The first event is located before the moment of speech: E1 \wedge R1/S. The location of the first event, left, then becomes the reference point for the following event: E1 \wedge R1/S = R2. The following event, got there, is located after the first event: R2 \wedge E2, and this new location becomes the point of reference for the third event: R2 \wedge E2 = R3. The final, third, event, would have spread, is located prior to the 'getting there': E3 \wedge R3 and this location could be used as a new reference point for yet another event in the text (but not included in 3).

The example shows the need for some system of numbering of reference points and of events in text analysis (see also 4.2.2). One needs, however, to differentiate between reference points in connected discourse and morphosyntactically expressible reference points. The numbering of reference points in the example refers to the former. The number of conceptual reference points is probably unlimited. In contrast, it would be reasonable to expect that the linguistic resources available for the expression of points of reference would be limited.

A second question consequently has to be asked: how many axes of orientation might there be in a tense system? Or in Reichenbachian terms; how many points of reference? Rephrasing it yet again, one might ask: what locations other than S can serve as standards of comparison for the location of target
events? This issue will be dealt with in 1.5 but first the system of notation will be refined.

1.4.2 Temporal locations as outcomes of acts of comparison.

Classifications which depend on categories such as the ones employed in 1.1 (DISTance and SUBJectivity) are not problem free. One problem is that of finding reasonably exact definitions for the terms used. Another is the connotations that the terms already have in everyday use. One might therefore prefer more precise, abstract notation, such as Reichenbach’s. The modified version which has been used so far will be refined in this section. It does not directly represent any TMA categories. What it expresses instead are outcomes of cognitive acts of comparison (Langacker, 1987 and 1.1) which form the basis for TMA systems. In this section I shall refer specifically to TMA systems such as those found in IE-languages. To achieve clarity, a certain amount of overlap with the argument in 1.1 is inevitable.

What has in effect been claimed in this chapter is that the tense system encodes comparisons along two main parameters, DISTance and SUBJectivity. Events which coincide with S are maximally near S and thus unmarked for DISTance. The comparison is often one of temporal DISTance so that events ‘not at S’ are past, events ‘at S’ non-past.

Events at S are unmarked also in terms of SUBJectivity. The comparison often concerns the likelihood of occurrence of the event so that non–coincidence with S, e.g. futurity, can be seen as the occurrence of the event being uncertain to some degree. The comparisons can be represented diagramatically as:
A horizontal arrow, in fig. 4, signifies a comparison of locations in terms of DISTance. A vertical arrow stands for a comparison of SUBJectivity. S being the standard against which events are compared, the diagram shows that an event which coincides with S is non-DISTant and non-SUBJective. In discourse, the absence of marking for DISTance or SUBJectivity is usually taken to mean that the event coincides with S along either of these parameters. An event which is not at S can, for example, be encoded as temporally past or future. An event denoted by E° S (see figure) coincides with S in terms of SUBJectivity but does not coincide in terms of DISTance. The future event in the diagram, S° E, coincides with S in terms of DISTance but not in terms of SUBJectivity (see 1.7.2, and also 3.2 for an example of a 'future', [−SUBJ] event). The diagram clearly shows that an event being located 'away from S' as far as a comparison of SUBJectivity goes, does not exclude it from being 'here/now' when it comes to DISTance, and vice versa.

The comparisons discussed above and shown in fig. 1 are first order comparisons (cf. Langacker, 1987:103). Second order comparisons are also encoded in the tense system. An event can be compared to S via another point of reference. This is illustrated in fig. 5:
In fig. 5, and from now on, notation within brackets, ( ), indicates the location which is point of reference (i.e. standard).

The location of an event functioning as the target (T) can be considered not coinciding with an intermediate location, which does not itself coincide with S. This second order non-coincidence can be of two kinds. Either T is in MW and both steps of the comparison are in terms of DISTance (T₁). If T is an IW event the location of which is being compared against the location of a [+DIST], MW event, then the first step of the comparison is in terms of DISTance and the second step in terms of SUBJectivity (T₂).

The comparisons can be described as Sequence: PRE – AT – POST a point of reference. An event which coincides with the standard is ‘AT R’ Other events are either ‘PRE’ or ‘POST R’. The PRE and POST locations are, as has been said earlier, of different status. PRE events are more likely to be seen as real whereas POST events are often anticipated, predicted, inferred etc. (but see also 3.2).

There is finally the possibility of encoding third order comparisons. An example is the ‘contrafactive conditional’, e.g. would have taken..., which specifies an event PRE a point of reference (St₂) which is POST in relation to another point of reference (St₂) which itself is PRE S (St₁).
The relationships between locations have been discussed in temporal terms but, as has been mentioned before and will be discussed in depth in 1.5, temporality is only one possible dimension. In general terms, fig. 6 shows that the first comparison establishes [+DIST] from S, the second comparison shows the event to be [+SUBJ] and the third and final outcome is that the event is PRE this [+DIST][+SUBJ] point of reference.

A few paraphrases of first, second and third order comparisons are given below. The notation adopted shows the standard within brackets and the target event outside the brackets. The only exception is the unmarked point of reference S which is not within brackets. It will be noticed that the standard can be equated with Reichenbach’s point of reference (R) as this term has been used in earlier sections.

First order comparison:
\[ E'S \] an event PRE S

Second order comparison:
\[ E(E'S) \] an event AT a location PRE S.
\[ (E'S)E \] an event POST a location PRE S.

Third order comparison:
\[ E'[(E'S)E] \] an event PRE a location POST another location PRE S

Table 2 Some examples of comparisons of event location.

The gloss for the third order comparison can be compared with fig. 6, starting from the bottom left and following the arrows backwards up to S (notice that the POST
location (St₂) is under St₁ because the former is located in IW). The notation exemplified above is more revealing and precise than the one used earlier. The bracketing allows R to be specified without the need for R as a symbol (in the notation). It also makes it possible to specify E’s relationship to R without saying anything about its location relative to S. The desirability of doing so was discussed in 1.4.1.

Notice that the direction of the comparison (as indicated by the arrows in fig.6) is crucial. An event which is POST a past point of reference stands in no direct relationship to S. The form would + V in the utterance: I knew that I would die... may encode an event located in the future relative to the event knew but the linguistic form gives no clue as to its temporal relationship to S. The example utterance can be completed by expressions referring to times PRE, AT or POST S, e.g. then, now, in the year 2000. For the same reason it is not correct to describe events encoded by the ‘conditional’ (e.g. would have done) as PRE future events. To some extent it is true that would is the ‘past’ form of will. In terms of tense agreement in English reported speech, for example, this is certainly true. Such correspondences are however the result of shifting the point of reference of sections of discourse and is a separate issue (see 4.2.1).

The relationship between reference points in TMA systems and cognitive acts of comparison is shown below.
Fig. 7  Possible target locations for comparison with S and the parameters of comparison, DISTance and SUBJECTivity.

Fig. 7 effectively claims that there are four possible points of reference in this type of TMA system and no more. Target locations which can be morphologically encoded have been labelled PRE, AT or POST the point of reference which functions as the immediate standard of comparison. The arrows are connections between possible standards and targets. They indicate the direction of the comparison away from possible standards. They show that the location of a hypothesized event event or an event PRE a past event cannot be directly compared to the location S.

The dotted lines are the parameters of comparison. They show that, for example, an event which is PRE the point of reference denoted by (S'E), does not relate directly to S and not at all to ((E'S)E). The reason is, as was said above, that the direction of comparison is ‘away from’ S.

The location represented in fig. 7 by will take is POST S, but it can also functions as an IW point of reference for future or modal events. Events PRE this point are then encoded by will + Perfect non-past, as in will have taken. The same relationship as between S and the future point of reference holds between the past, (E'S), and the ‘conditional’ point of reference.
Fig. 7 makes it clear that there are only four linguistically expressible points of reference in the type of TMA system we are dealing with. This is reflected in the notation in table 3 (cf. McMahon, 1976:63) which also shows that the same realization can fulfill different functions:

<table>
<thead>
<tr>
<th>NOTATION</th>
<th>REALIZATION</th>
<th>TEMPORAL INTERPRETATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES</td>
<td>take</td>
<td>AT-present</td>
</tr>
<tr>
<td>E'S</td>
<td>took</td>
<td>PRE-present</td>
</tr>
<tr>
<td>S'E</td>
<td>will take</td>
<td>POST-present</td>
</tr>
<tr>
<td>(S'E)E</td>
<td>will take</td>
<td>AT-future</td>
</tr>
<tr>
<td>E'(S'E)</td>
<td>will have taken</td>
<td>PRE-future</td>
</tr>
<tr>
<td>(S'E)E</td>
<td>will be going to take</td>
<td>POST-future</td>
</tr>
<tr>
<td>E(E'S)</td>
<td>took</td>
<td>AT-past</td>
</tr>
<tr>
<td>E'(E'S)</td>
<td>had taken</td>
<td>PRE-past</td>
</tr>
<tr>
<td>(E'S)E</td>
<td>would take</td>
<td>POST-past</td>
</tr>
<tr>
<td>E((E'S)&quot;E)</td>
<td>would take</td>
<td>AT POST-past</td>
</tr>
<tr>
<td>E'((E'S)&quot;E)</td>
<td>would have taken</td>
<td>PRE POST-past</td>
</tr>
<tr>
<td>((E'S)&quot;E)E</td>
<td>would be going to take</td>
<td>POST-past</td>
</tr>
</tbody>
</table>

Table 3 Temporal location of events in a four module verb system in relation to points of reference.

In column one, reference points are within brackets. Column two shows common verb realizations. In column three event times are called: E’R=PRE, ER=AT, R’E=POST. Notice that bracket ( ) is to be read: ‘point of reference’, or R. S is unbracketed since it is the only point which can be its own point of reference.

Below is an example of the relatively rare POST POST-past in context:

(4) I knew that she would be going to build a house so she would be taking out a mortgage.

The notation in table 3 has some advantages over that originally suggested by Reichenbach and discussed in McMahon (1976) and also over the modifications to this system suggested by Comrie (1985:127). In table 3, the location of E is specified only in relation to the next inner bracket. The relation E to S is only specified when it is direct (present reference). Otherwise brackets are
used to indicate that a location has become a point of reference. This eliminates the need for the use of the symbol R used by Reichenbach and Comrie, at the same time making the location of R explicit. Comrie distinguishes between absolute tense (locations in relation to S only) and relative tense (locations in relation to a point of reference not necessarily S) by using the symbols E and S for the former, E and R in the latter case. In the notation suggested in table 3, the distinction would simply be that absolute tense has an event in relation to an unbracketed S, while relative tense is any tense where the point of reference is set by E in relation to S within brackets. To indicate the relative order of events to the point of reference Comrie uses the two terms ‘before’ and ‘after’. In table 3, the symbol \( \sim \), or the lack of it, and the position of the target E in the notation make the order clear. Comrie states that a notation is needed for non-past and non-future forms and suggests the terms not-before and not-after respectively. The above notation could easily be expanded to cover such a need by the use of, e.g. ‘−‘ meaning not. Non-past, absolute tense would then be: E−S (E not before S) and non-future: S−E (E not after S).

One of the problems with Reichenbach’s notation was that it necessarily established a relationship between E and S which, for forms such as the ‘future perfect’ (e.g. will have taken) required three different formulae to be used (see 1.4.1 (2) f). Comrie (1985) eliminated this drawback by establishing the convention that the relationships between E and R and between R and S in a formula such as ‘E before R after S’ (future perfect), are separate. The formula should thus be read ‘E before R and R before S’. This can be compared with the suggested notation in table 3: E−(S−E). The latter has the same advantage as Comrie’s, that it does not establish a direct relationship with S. In addition, however, it makes explicit the location of R to S (in this case, R is after S). This is especially interesting when we are dealing with third order comparisons, as in would have taken. Comrie’s notation would be: ‘E before R1 after R2 before S’
which can be compared with the suggested: $E^-(E^-(E^-(E^-(E^-(E^-S)^E)$). The bracketed notation is
a more detailed description of the relationships between standards and targets
and is consequently also more explicative. It reveals the relationship between
'conditional' forms and other tenses.

Returning now to the example quoted in 1.1: John left for New York; by the
time he got there, the news of his resignation would have spread. the analysis with
the above suggested notation would be as follows:

(5) John left for New York;
    $E^-(E^-(E^-S)^E$

This is assumed to be the first event in the narrative so $S$ is the point of reference.

(5) cont. by the time he got there
    $(E^-(E^-S)^E$

The first event location has now become the point of reference for the subsequent
event. Although the form has been reduced (or 'neutralized', see 1.7.2) due to
syntactic constraints, it clearly denotes anticipation from a past point of reference,
i.e. POST-past, and not simply an event recounted in chronological order. The
unreduced form would be would return but in a time-clause the futurity is carried
by the preceding time expression.

(5) cont. the news of his resignation would have spread.
    $E^-(E^-(E^-S)^E$

This event is recalled, or seen retrospectively, from the POST-past which is its
point of reference. The original, past point of reference $(E^-S)$ is still represented in
the innermost bracket.

The reduction of the post-past form occurs, as is typical, in a subclause.

The reason for such reductions is discussed by Givón (1984) who claims that:

The more dependent the SUB-clause is
semantically/pragmatically on the MAIN-clause, the less
likely are independently-expressed TAM markers to appear
in the SUB-clause. (Givón's capitals, ibid:315)
Although the exact nature of constraints will be language specific, it is clear from (5) that the notation must stand for relations between locations and not for realizations as such.

Finally, it is worth noting that in discourse analysis one would have to consider not only the events mentioned in the discourse but also other means of conveying, or any knowledge about, temporal location. An example such as: By five-thirty I’ll be finished, could be represented as S¬E and E(S¬E), where S¬E is not an event but a time expression. Events and non-events could, of course, be kept apart by different notation, for example E for events and T for other indications of locations, e.g. time adverbials, thus E(S¬T).

There are indications that, crosslinguistically, an event cannot establish its own point of reference. All events are assumed to be related to S unless there is some indication to the contrary, in the discourse or wider context. A typical non-present context is the narrative. In some languages there is a specific narrative verb form used on all but the first verb expressing a sequential series of events (Dahl, 1985:114, Comrie, 1985:102-4). Such narrative forms may be tenseless and the encoding of past tense on the first verb is sufficient indication of pastness. Another way of making clear, from the very beginning, that there is no relation to a present point of reference is by cue phrases such as English Once upon a time... and the equivalent Modern Greek Mia fora ke enan kero.... Such phrases establish a temporal location in the remote past which serves as reference for the beginning of a chain of subsequent events.

Concerning Kpelle (Mande, Congo-Kordofanian), which has tenseless narrative forms, Welmers (1973:364) remarks that overt past reference can be completely dispensed with in informal narrative, especially in folk-tales. Narrative forms can then be used from the first event. Past temporal reference can apparently be sufficiently established through the shared knowledge of the participants. There may be indications in the situational context that what is about
to occur is the telling of a tale and so no overt linguistic signal of pastness is necessary.

1.5 Our Relation to Events, according to Bull.

The formal framework discussed in 1.4.1–2 seems satisfying from the point of view of logic but the doubt may still remain whether this logic actually has anything to do with speakers and the way they perceive and talk about the world. This section aims to show that approaching the same subject – temporal reference – from a different and more ‘human’ perspective confirms the validity of the argument in the previous section. This pragmatic approach has the advantage of making more apparent the relationship between the TMA system and the communicative needs it serves.

I will be referring to a study of the Spanish tense system by Bull (1963) in which he claims that ‘man’ i.e. Ego, can have four different types of relationships to event. From Ego’s temporal location, the moment of speech (S), events can be Recalled, Experienced, Anticipated or merely Contemplated, according to Bull. The four ‘relationships to events’ correspond to four locations which function as R (points of reference) for events located relative to them. The first three relationships denote PRE, AT and POST events or the ‘traditional’ ternary sequence of past–present–future. Contemplated events – the fourth category – is realized by conditional forms. One interesting aspect of Bull’s work is that he limits the number of morphosyntactically expressable points of reference to four in much the same way as in fig. 7 (cf. ibid:21–22). The framework also provides the elements for an explanation of the relationship between the two notions which, I have claimed, are most central to TMA systems, namely SUBjectivity and DISTance. Before attempting such an explanation I shall discuss Bull’s model in more detail. In some cases my interpretation of Bull (1963) takes the analysis further than the original.
The Experience relationship is a direct relationship of Ego to events and so the events are located relative to S. In this sense the events in (6)–(8) are all non-past, whether recalled, directly experienced or anticipated from S:

(6) She built a house. Recall at S
(7) She builds a house. Experience at S
(8) She will build a house. Anticipation at S

(6)–(8), contain Perfective aspect (English 'Simple' aspect). I shall continue to use Perfective forms in the examples, whenever possible. (Aspect will be treated in chapter 2.)

Each of Bull's four relationships is recursive. The Recall relationship is when Ego mentally and linguistically places her/himself at a past point in time and from there Recalls, Experiences or Anticipates events:

(9) She had built a house. Recall at a Recalled R
(10) She built a house. Experience at a Recalled R
(11) She would build a house. Anticipation at a Recalled R

The point of reference for (9)–(11) could be set, for example, by the higher clause: I knew that....

In a parallel fashion, Ego can place her/himself at a future, or Anticipated, point in time and from there Recall events. One can also Anticipate events from a future R. An overt realization in English of this latter relationship would contain 'going to' (14), but it is more common that a 'future in future' event is simply expressed as future (13):

(12) She will have built a house. Recall at an Anticipated R.
(13) She will build a house. Experience at an Anticipated R.
(14) She will be going to build a house. Anticipation at an Anticipated R.

The Recall, Experience and Anticipate relationships to events can be temporal. The Contemplate relationship, in contrast, does not represent a temporal relationship of Ego to events. The verb forms used to express this relationship correspond to 'conditional' or 'past modal' forms in conventional terminology:
(15) She would have built a house.  
Recall at a Contemplated R.
(16) She would build a house.  
Experience at a 
Contemplated R.
(17) She would be going to build a house.  
Anticipation at a 
Contemplated R.

The 'contemplate' relationship in itself is not temporal but Sequencing adds a temporal dimension to the atemporal reference time in (15)–(17). Thus (15) denotes an event PRE whatever temporal reference time the context of the utterance may indicate. (15)–(17) show that it is possible for temporal and non-temporal notions to be expressed simultaneously.

One can also conceive of events being Contemplated from a past, present or future point of reference:

(18) Men were men in those days.  
Contemplated event at a 
Recalled R.
(19) The sun rises in the east.  
Contemplated event at S.
(20) The week shall inherit the earth.  
Contemplated event at an 
Anticipated R.

(18)–(20) illustrate what might be thought of as Contemplated events from different points of reference. At that particular point in time they are 'omnitemporal'. That is to say, they denote generic rather than specific events. However, there are no specific verb forms for such relationships in the type of system illustrated in fig. 8. They are not encoded by [+SUBJ][+DIST] forms as are other Contemplated events. The types of event illustrated in (18)–(20) will therefore be considered Recalled, Experienced and Anticipated, respectively, and will not be referred to as Contemplated.

In fig. 8 below, Bull's analysis has been taken a step further by the projection of the four points of reference on to time lines. Although the commonalities between Bull's and my own approach are apparent, the arrangement of the resulting four modules in fig. 8 is very different from the diagrams presented by Bull (cf. Bull, 1963:31, diagram 5).
The set of realizations in each of the four modules in fig.8 will be called a
‘paradigm’. The term ‘mode’ will be used to refer to the relationships expressed by
the paradigms; the Recall Mode, the Contemplate Mode etc.

The system in fig.8 is a model of the four module TMA system found in
English and Modern Greek. First hand knowledge of Swedish, English, Modern
Greek and Spanish plus an investigation of the literature (e.g. Levy (1951) on
Persian and Dambrianas (1972) on Lithuanian) suggests that it might be common
to all IE languages. This hypothesis would need to be substantiated by further
research, outside the scope of the present study. Aspectual realizations will be
added to this system in chapter 2 and the place of modality will be discussed in
chapter 3. This is the type of TMA system I will be referring to throughout the thesis
unless explicit mention is made to the contrary. Particular to this type of system is
that 1/ there are four points of reference, 2/ for each of these there is a paradigm
of verb forms and 3/ the paradigms are organized along two axes: DISTance and
SUBJectivity. The paradigms will be expanded, i.e. more realizations will be added,
when aspect is dealt with in chap.2.

The main justification for claiming that the arrangement of components in
fig.8 constitutes a system is that a great number of constraints can be formulated
which operate on one or more of its paradigms. Phenomena such as tense agreement, tense shifts, conditionality, modality and complementation, to name a few, operate on the paradigms shown in fig.8 and not on random lists, or any other constellation of verb forms. I suggest that constraints which are formulated in the terms set by the above model therefore tend to be explicative as well as descriptive. These claims will be substantiated throughout the thesis. We shall now have a closer look at the model.

Fig.8 can be compared with fig.7 and table 3 in the previous section. In fig.8, the encoder’s present, i.e. S, is the point of reference (*) in the Experience paradigm. From the verb realizations supplied for the various locations it becomes clear that some verb forms have more than one function. A Perfective past (took) can realize an event before the moment of speech, i.e. E’S in the Experience mode. This location can become the past point of reference in the Recall mode, (E’S). The Perfective past (e.g. ‘took’) also denotes events AT or in chronological sequence with this point, E(E’S).

The same form thus denotes two types of events – events PRE S, and events AT a [+DIST] point of reference. As my analysis in 2.4 and 5.2 will show, both the Perfective past and the Perfect non-past (e.g. took and have taken) can, in fact, realize events PRE S, but the former is more often the unmarked choice. This is the rationale for positing the Perfective as the unmarked realization for the location E’S. Bull, in contrast, considers only the Perfect non-past (have taken) to be the form which designates an event PRE S.

All the Perfect forms in fig.8 (had taken, will have taken, would have taken) represent locations PRE a specific R. They denote events which are ‘out of sequence’, that is to say, which do not occur in chronological order in the discourse. It is a common discourse convention that chronological sequence need not be marked. Out of sequence events, in contrast, are often, as here, expressed by specific PRE forms (see for example Givón, 1982 and 1984, on Creoles).
Out of sequence events, i.e. locations which are PRE a point of reference other than S, only rarely serve as R. Consequently, when there is more than one out of sequence event, each event will usually be taken to have the same point of reference (R). Analyzed below is a sentence with two out of sequence events:

(21) When she arrived (E1) I had already made (E2) sandwiches and packed (E3) my bags so we could leave (E4) on the first train.

\[ R=(E^S) : \]
\[ \text{arrived} \quad E1(E^S) \]
\[ \text{had already made} \quad E2(E^S) \]
\[ \text{packed} \quad E3(E^S) \quad (\text{ellipsed 'I had packed'}) \]
\[ \text{could leave} \quad (E^S) \quad E4 \]

We know about R that it is [+DIST], represented as \( (E^-S) \) and encoded by arrived, since only the [+DIST] paradigms give the speaker access to forms such as the Perfect past (Pluperfect) and 'past' forms of modals (e.g. could). Both E2 and E3 are PRE R. To be maximally explicit we should write: \( E2^*(E1(E^-S)) \) etc. However, the point of reference does not change in terms of the system as long as the reference event (here E1) is AT its point of reference. The range of possible realizations is the same whether R is \( (E1(E^-S)) \) or \( (E^-S) \) and so I have chosen the simpler notation.

The event in the last clause, could leave, is future to E1 rather than to E2 or E3. All three events in the main clause are thus located relative to the event in the time clause and so there is only one point of reference in (21). (The possibility for points of reference to shift within a sentence will be looked at in 4.2.)

The convention that events are taken to have occurred in the order they are mentioned holds also (internally) for series of out of sequence events. The most likely reading of the above example is therefore that the sandwiches had been made before the bags were packed. This interpretation can be reversed either by an explicit addition, such as 'and packed my bags even before that', or by knowledge of the actual events. This illustrates the point made by Comrie
(1985:26–27) that chronological sequence is not part of the meaning of any tense but an implicature deducible from context.

The double function of the Perfective past (e.g. took), mentioned above, has parallels in the future and conditional. The form, will take, in fig.8 is shown to express both an event POST S and an event at an Anticipated point of reference, and would take is the realization both of an event POST a Recalled point of reference and of an event at a Contemplated point of reference.

Bull describes cases such as these in the Spanish verb system, i.e. one form performing more than one function, as ‘desynchronizations’ and ‘standard substitutions’. They are considered deviations from the hypothesized verb system. I would say on the contrary that such duplicity of function is one of the basic characteristics of the system and follows logically from the fact that S is the only temporal location which is absolute in relation to the encoder. Reference points other than S are only established by an initial comparison with S as standard. It follows that verb forms expressing events directly related to S in fact denote both events in relation to S and potential reference points for further second order comparison. (This was elaborated on in 1.4.2.)

Some of the facts described above can be assumed to be universal, e.g. the ‘egocentredness’ of the TMA system. In contrast, the four-paradigm TMA system that was illustrated in fig.8 is only one of several types of TMA system. For example, the number of reference points encoded in the system may be greater or smaller than four; far from all languages have separate paradigms for past versus non-past or future versus non-future reference. In Hawaiian (Austronesian) there seems to be only one reference point and one paradigm which, unless otherwise indicated by the context, would express events relative to S (Alexander, 1968). There are thus no verb forms in Hawaiian whose specific function is to indicate present, past or future reference (see also 2.9). Other languages have many more remoteness distinctions than English or Modern Greek. One example is Kiksht
(Chinookan, North America) with four main distinctions, or 'time frames', in the past and one in the future, all relative to S (Hymes, 1975). In addition there are aspectual markers which refer to locations within these time frames, so that the total number of distinctions is ten (to be discussed in 2.9, see also 1.6 on aspect and event time).

One reason I have discussed Bull's framework at some length is that his labelling of 'man's relations to events' implies the dichotomy Material–Imagined introduced in 1.1. The Recalled and Experienced points of reference are locations in the Material World. What is Experienced or Recalled is relatively more objective than that which is merely Anticipated and Contemplated. The Anticipated and Contemplated points of reference are locations in the Imagined World. Bull's treatment also shows the recursiveness in this type of TMA system. The Recall–Experience–Anticipate–Contemplate distinction is used once to establish point of reference and then again, barring the always non–temporal Contemplate notion, to establish Sequence (see also discussion of recursiveness in 4.1.2). From the speaker's point of view this means that he/she chooses realization by first establishing reference point and then location of the predicated event relative to that reference point.

Recursiveness also explicates the appearance of the World as a plane (represented by the timeline) in the Imagined World (fig.8). In 1.1. it was said that the Material World could be seen as a plane across which ego moved. Thus the Material World is what one experiences or has experienced. However, that which is imagined (or anticipated, hypothesized etc.) can also be seen as a Material World albeit not (yet) realized. Therefore, there is no contradiction between describing the time line as a representation of the Material World and saying that events both in the Material and the Imagined Worlds can be placed on a time line.

The Recall, Experience and Anticipate modes are essentially different from the Contemplate mode in that the former three but not the latter have strong
temporal connotations and constitute ternary Sequence (see fig. 8). It is difficult to see where the notion of Contemplation fits in. This is where the shortcomings of Bull’s choice of terms become obvious. Using instead the non-temporal notions of DISTance and SUBjectivity it can convincingly be shown that the Contemplation mode is in fact a combination of notions expressed by the Recall and Anticipation modes.

A.  

B.  

### Fig. 9 The four module TMA system.

For each quarter section of fig. 9, A or B, there is a corresponding paradigm of realizations, as shown earlier in fig. 8. Fig. 9 can also be compared with fig. 7. The leftmost figure above (A) shows DISTance and SUBjectivity. The rightmost figure (B) has Bull’s terms in the equivalent positions. Fig. 9A illustrates the creation in the TMA system, by the interaction of DISTance and SUBjectivity, of the [+DIST] [+SUBJ] paradigm which corresponds to the Contemplate paradigm in B.

Our ‘relation to events’ is not only temporal. The substitution of temporal terms by spatio-temporally more neutral ones as in 9A is therefore more accurate and more explicative. The term DISTance describes what temporal and non-temporal uses of past forms have in common (see further discussion in 1.7.3), and ‘SUBjectivity’ is the semantic component which all the uses of future and other I-W forms share. It will be shown to explicate, for example, what futurity has in common with modality (see e.g. 1.7.2).
1.6 Aspectual realizations of event time.

A discussion of aspect and how it differs from tense has been deliberately avoided so far, since aspect is treated in depth in chapter 2. This section will limit itself to the discussion of what tense is and what aspect is not. Clarification of this question is necessary because the relationship between encodings on the one hand and tense and aspect on the other is not one to one. I shall be using the following terms and abbreviations:

- PFV  Perfective  e.g. goes, went, will go
- IPPV Imperfective e.g. is going, was going, will be going
- PFCT Perfect e.g. has gone, had gone, will have gone

A distinction has been made above between reference time and event time but other terms have been used. Reference time is the marking of either of the four points of reference and event time is Sequence. It is convenient to use the term event time here because, as will be shown, it describes its scope. Event time and aspect are often treated as one and the same thing, especially in discussion of Perfect (PFCT) aspect. My claim is that event time and aspect have to be treated separately (and reference time separately from event time).

The relationship between aspect and event time is not one to one. The aspectual meaning of the realization has to be compatible with the event time it is meant to encode, but this still leaves the speaker a choice of aspect. Firstly because more than one aspect may be compatible with the location of the event, and secondly, because speakers can often choose not to indicate event time if it can be understood by the meaning of the higher predicate or by the context. The relationship aspect – event time is shown in table 4. It will be further elaborated on in chapter 2.

<table>
<thead>
<tr>
<th>Compatible aspect</th>
<th>Event time</th>
<th>Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFV IPPV -</td>
<td>R/E AT</td>
<td>PFV Perfective</td>
</tr>
<tr>
<td>PFV IPPV -</td>
<td>K/E POST</td>
<td>IPPV Imperfective</td>
</tr>
<tr>
<td>PFV - PFCT</td>
<td>E/R FRE</td>
<td>PFCT Perfect</td>
</tr>
</tbody>
</table>

Table 4  The compatibility of aspect with event time.
Table 4 uses the abbreviated notation with R instead of bracketed relationships of S to E. The PFV aspect is compatible with any event time, IPFV may denote events AT or POST a point of reference, while PFCT can only denote events PRE a point of reference. Aspect will be discussed in depth in chapter 2. Below is just one example of choice of aspect in English for one and the same event time.

(22) I saw him get up and walk out of the room.
    TNS [RT [+DIST]]
    [ET [E/R]]
    ASP [PFV]

(23) I saw him getting up and walking out of the room.
    TNS [RT [+DIST]]
    [ET [E/R]]
    ASP [IPFV]

As shown in table 4 and illustrated by (22–3), both the PFV and the IPFV aspect are compatible with events located AT a point of reference.

Since each event time can be realized by more than one aspect, it can clearly not be just event time which determines the speaker’s choice. The main determining factor is the universal meanings of the aspects. There will also be language specific constraints on aspects, as for example in Modern Greek where PFV cannot be used for E/R if R=S. This constraint is however not inherent in the meaning of the PFV. In the absence of such constraints, the PFV aspect is the default, or unmarked, option.

It has been demonstrated in the preceding paragraphs that aspect and event time are not one and the same. What makes the two concepts difficult to separate is the fact that one way of realizing event time is aspect. The similarity between aspect and event time which allows this ‘symbiosis’ is scope. Foley and Van Valin (1984) characterize aspect in the following way.

In all cases aspect is concerned with the structure of the narrated event itself. The speech event and its participants are of no importance. (ibid:204)
They go on to say that aspect consequently has scope only over the event, in contrast to reference time (their 'tense') which has scope over the whole proposition. In this respect aspect is similar to event time, as illustrated in (24)–(26) below. The sentences should be read as part of a narrative about grandma and grandpa building their first house in the 'new country'. Notice that the reference time (RT) remains constant in the gloss underneath each example, while event time (ET) and aspect (ASP) change.

(24) in 1923 they built their first home

\[
\begin{align*}
\text{TNS} & \quad \text{RT} \quad [+\text{DIST}] \\
\text{ET} & \quad [E\cdot R]
\end{align*}
\]

\quad \text{ASP} \quad \text{[PFV]}

(25) in 1923 they had (already) built their first home

\[
\begin{align*}
\text{TNS} & \quad \text{RT} \quad [+\text{DIST}] \\
\text{ET} & \quad [E\cdot R]
\end{align*}
\]

\quad \text{ASP} \quad \text{[PFCT]}

(26) they decided on the spot that this was where they were building their first home

\[
\begin{align*}
\text{TNS} & \quad \text{RT} \quad [+\text{DIST}] \\
\text{ET} & \quad [R\cdot E]
\end{align*}
\]

\quad \text{ASP} \quad \text{[IPFV]}

In the examples the predicate and the arguments are all placed in the [+DIST] past. This gives the speaker access to a range of so called 'past forms'. When the event time is AT the reference point as in (24), both the participants and the event are located at the same point in time. Only the event is affected by the event time being PRE or POST the reference point, as in (25) and (26). The grandparents, are still at the past reference point with the event of building either behind them or still to be done. The house is also in the same spot either as a potential or a completed house. The scope of the event time is thus only over the event, not over the participants, just as aspect is only predicated of the event. This allows event time to be encoded by aspect.
Perhaps the strongest argument for separating aspect and event time is that aspect characterizes the event in other important ways than as regards location. It is, in fact, easy to find examples in English of meaning differences encoded by aspect, despite the fact that, as will be shown in chapters 4 and 5, aspect is not as important as tense in English (and much less important in English than in Modern Greek):

(27) At that very moment she hit him.
(28) At that very moment she was hitting him.

The reference point is [+DIST] in both examples and the event is AT R. However, the Perfective aspect suggests that (27) denotes one instantiation of the event hit whereas the Imperfective in (28) gives a first reading of repeated instantiations of the event hit. Other consequences of the differences in aspect include the fact that the event is seen as already begun at R in (28) but as both beginning and ending at R in (27). Aspect in Modern Greek will be discussed in depth and compared with English aspect in chapter 5. All that needs to be said at this point is that the meaning differences cannot be explained by event time. They are the result of the aspectual encoding. We thus reach the conclusion that aspect and event time are different categories but that event time can be encoded by a compatible aspect.

1.7 Status of Present, Past and Future.

1.7.1 Present.

Present it was said above, is the temporal location of Ego, the encoder. It was also said that either time or Ego is seen as moving. Therefore the present is fixed only in relation to ego. Events that have not yet been experienced are in the future, those already experienced in the past. Present can thus be defined as the borderline between past and future. As such it can have no temporal extension. It is, in other words unmarked for DISTance.
Linguistically this borderline can be assigned to the past or to the future. The former results in a primarily future – non–future tense system, the latter in past – non–past (cf. Ultan, 1978).

The marginal character of present as a temporal concept manifests itself in the absence of a specific present category in some languages. Ultan reports that present and future merge in Modern Mandaic and to a great extent in Finnish and Hungarian and also that the distinction between past and present is absent in many North American Indian languages. The same occurs also in a number of Australian and Papuan languages (Dixon, 1976 and W. Foley, personal communication).

In any type of system, present events will necessarily cover sections of past and future time, since in Bull’s words “events take time to take place”.

Present as a linguistic concept thus covers an indefinite area on both sides of the borderline between past and future time. Time periods of such varying lengths as ‘this very moment’ and ‘this millenium’ can be referred to as present time. It is not surprising that the unmarked present in most languages that have a PFV/IPFV opposition is IPFV, which denotes extension and unbounded events.

1. 7. 2 Status of Future: temporal and modal use.

Past and future are often used rather loosely to refer both to event time, i.e. E^S and S^E respectively, and to past and future reference: (E^S) and (S^E). This use might obscure the fact that in terms of event time the relationship past – future is symmetrical, but in terms of reference it is clearly not. As was argued in previous sections, past reference implies the marking of DISTance and future reference usually the marking of SUBJECTivity. Reportedly, Yimas (Papuan) distinguishes sharply between ‘modal’ and ‘non-modal’ future (W. Foley, personal communication), i.e. speakers can indicate whether a future event is considered a
fact or not (see also 3.2). Nevertheless, there seems to be a strong tendency for future forms to be encoded as [+SUBJ] (see below).

Future events differ most obviously from past events in that they are real only as intentions, plans, signs etc. at S. A past event can be judged as to its truth value, a future event cannot. Futurity represents an extension into the Imagined World and is thus a more subjective notion than pastness. This has led to discussions as to whether future is a tense or a modality (or ‘mood’) Lyons (1977) says:

There is also a good deal of diachronic evidence to support the view that reference to the future, unlike reference to the past, is as much a matter of modality as it is of purely temporal reference. (ibid:816)

In many languages futurity is expressed by auxiliaries or other markers which have additional modal functions. Djinang (Australia), for example, uses what Waters calls ‘the FUTURE inflection’ also to express ability and as a purposive marker (Waters, 1989). In English the modal auxiliary WILL can express Epistemic Modality, as does the Modern Greek particle THA in, for example:

(29) Tha to ḥanō.
    THA OBJ do-npln
    I’ll do it.

(30) Tha ine  perasmēna tis dhodeka, dhen nomizis?
    THA be-3s.np past DEF twelve NEG believeIPFVnpln2s
    It must be after twelve, don't you think?

Both WILL and THA are originally volitional main verbs.

Uttan (1978), who surveyed the modal, aspectual and goal-oriented (eg. purpose, result) uses of future forms in about 50 languages from a number of different language families, found that the modal functions predominated. Future was used to express: imperative, obligation/ necessity, polite request, optative, hortative, cavetive, desiderative, probability, possibility, potential, supposition, hypothetical condition or consequence, and wonder and amazement (ibid:103–4).

Similarly, Hoddingott and Kofod (in Dixon, 1976) report that future in Ngangikurungur (Australia) encodes a range of modal meanings: obligation,
necessity, intention, desire, possibility and condition. Ultan concluded that modal notions had one important element in common with future, namely Uncertainty:

The reason for the preponderance of modal applications of future tenses must lie in the fact that most modal categories refer to differing degrees of uncertainty, which correlates with the element of uncertainty inherent in any future event,... (ibid:105)

The modal notions found in Ultan’s study are all except one (wonder and amazement) clearly related to either Futurity, Conditionality or Likelihood. It seems that Uncertainty forces the speaker to participate by making some kind of judgement, thereby revealing an attitude towards the proposition. ‘Wonder and amazement’ cannot be said to be a judgement but is semantically close in that it conveys speaker attitude.

Ultan’s findings support the claim made earlier that future represents locations in the Imagined World and it seems a felicitous choice of expression to say that future encodes SUBJectivity, since speakers’ judgements and attitudes are clearly subjective.

The strong subjective component of future constitutes a link with the present, the temporal location of the encoder. It is the encoder who makes the assessment which is inherent in any proposition concerning I/W events. This is manifested in the fact that markers of periphrastic futures, such as the ones mentioned above, are formally present or unmarked for tense (Ultan, 1978:92). Future forms are thus able to have a general non-past meaning when they double as expressions of modality. An example of a future marker with a present base form is English will. In Modern Greek future is indicated by the non-temporal, uninflected particle tha.

One of the ways in which the difference between past and future manifests itself is neutralization. According to Ultan (1978) future is often neutralized in negative constructions without a corresponding neutralization in the past. In
English, future is neutralized in time-clauses (see discussion of (5) in 1.4.2) and in conditional clauses, whereas past is not.

We shall have occasion to return to a discussion of futurity in chapters 3 and 6 on modality.

1.7.3 Status of Past: temporal and non-temporal use.

The temporal relation of past to S is one of Sequence, more specifically it denotes events PRE S. It was said above that it conveys an event in the there/then of the Material World. By its connection with the Material World, pastness is inherently more objective than future. However, past forms also perform other than temporal functions, for example that of being more tentative, less assertive, as in eg. Could you do it for me? rather than Can you..? This use of past is conceptually related to its temporal meaning in that both denote DISTance. Tentativeness can be characterized as distance from personal commitment/involvement and is encoded by the same forms as distance in (past) time. It can be concluded from the above that the more general meaning of past forms is DISTance. A similar proposal made by Steele (1975) in a paper on Proto-Uto-Aztecan will be discussed later on. First, we shall look more closely at the non-temporal use of past forms in English and Modern Greek. The examples in table 5 are translation equivalents.
<table>
<thead>
<tr>
<th>PAST FORMS</th>
<th>NON-PAST FORMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a I read /red/ the paper. Diavasa tin efimerida.</td>
<td>b. I read /rid/ the paper. Diavazo tin efimerida.</td>
</tr>
<tr>
<td>2.a 'I know him.' He said he knew him. 'Ton ksero.' Ipe oti ton kseri.</td>
<td>b. 'I know him.' He said he knows him. 'Ton ksero.' Ipe oti ton kseri.</td>
</tr>
<tr>
<td>3.a I wish I didn't have so much work. Makari na min iha toso poli doulia.</td>
<td>b. I don't have very much work. Den eho toso poli doulia.</td>
</tr>
<tr>
<td>4.a He might be Chinese. (Tha) boronse na ime kinesos.</td>
<td>b. He may be Chinese. Bori na ime Kinesos.</td>
</tr>
<tr>
<td>5.a I wanted to see you for a moment. (Tha) ithela na se dho mia stigm.</td>
<td>b. I want to see you for a moment. Thelo na se dho mia stigm.</td>
</tr>
<tr>
<td>6.a He would come. Tha'rhotan.</td>
<td>b. He will come. Tha'rthi.</td>
</tr>
</tbody>
</table>

Table 5 Non-temporal uses of [+DIST] forms.

Linguistic forms are typically multifunctional. Using past to convey only its basic temporal meaning would be uncharacteristically wasteful of linguistic resources. As could be expected, its expressive potential has in fact been expanded. It covers past and other notions which are semantically related in that they include an element of DISTance. Comments by Hymes (1975) on Kiksht (Chinookan, North America) and the analysis of Proto-Uto-Aztecan presented by Steele (1975, see below) suggest that such uses are not limited to IE languages.

The first example in table 5 illustrates the purely temporal meaning of past. The difference between 1a and b (out of context) is simply that the former refers to the past whereas the latter (b) refers to present action. In contrast, the direct speech in example 2 refers to the present in both a and b, but the report can be made with time-shift (knew/iksero) or without (know/kseri). As will be discussed in section 4.2, time-shift can be used in reported speech when the speaker of
the main clause is not certain of the truth value or present validity of the reported
utterance, or when the verb action reported is considered 'historical', i.e. without
any connection with the present.

The difference between 3 a and b is that the former is a wish for something
the truth of which the speaker has little confidence in (I don't have much work.). A
sentence like: I hope I don't have too much work to do., in contrast, takes no past
form, since hope implies greater confidence in the desired proposition
being/becoming true than does wish (see also discussion of (31)-(36) below).

In example 4 both a and b refer to the present. This is made clear by the
complement (na ine/ be). The past form of the modal simply expresses lower
probability than the present form.

Of the two utterances in example 5, a would be a more polite in both
English and Modern Greek. The past form makes it more tentative and formal than
b which gives a more direct and decisive impression.

Examples 1 - 6 are not necessarily good translation equivalents in all
contexts. The conditions which determine the exact use of the forms differ from
language to language. Nevertheless, the notions expressed seem to be the same
in English and Modern Greek. They are summarized in table 6:

<table>
<thead>
<tr>
<th>PAST FORMS</th>
<th>NON-PAST FORMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Lower probability</td>
<td>- Higher probability</td>
</tr>
<tr>
<td>- Lower confidence</td>
<td>- Confidence</td>
</tr>
<tr>
<td>- Tentativeness</td>
<td>- Directness</td>
</tr>
<tr>
<td>- Formality</td>
<td>- Personal involvement</td>
</tr>
</tbody>
</table>

Table 6 Non-temporal concepts expressed by past and non-past
forms.

The notions listed in the table should be seen as highly provisional
categories which attempt to capture the semantic/pragmatic content of past and
non-past forms. It seems that past forms can express, apart from temporal
distance from the moment of speech, a distance from what is real or true and also
a distance in terms of lack of personal involvement. The examples thus illustrate
and support the claim that the there/then in the Material World realizes not only
temporal notions but a number of other notions all related to the DISTance
concept. This use of past forms is common in a great number of unrelated
languages.

Steele (1975) reached a similar conclusion in a paper dealing with TMA in
Proto-Uto-Aztecan. In "Past and Irrealis: Just what does it all mean?", Steele
maps the use of past forms with non-temporal meaning in Proto-Uto-Aztecan.
Past is there a sub-category of non-future but has very similar functions to those
outlined above including, for example, polite requests. She points out that past has
been described in many languages as denoting irrealis. Steele suggests that "past
and irrealis have in common the semantic primitive DISSOCIATIVE" (ibid:117) and
claims that this is a universal semantic primitive. If DISSOCIATIVE is taken to be
non-coincidence with S, my findings support this claim. It is, however, possible to
be more specific about the irrealis notions expressed by past, at least in English
and Modern Greek. The notions listed in table 6 are all gradable. This indicates
that past expresses uncertainty about reality status, but not to the point of being in
itself an assertion of irrealis status. In English and Modern Greek a further
indication that past cannot be adequately described as, in itself, a marker of
irrealis is that, although it often occurs in propositions with irrealis status, such
status is always expressed by some element other than the past form. An example
of this is 3a in table 5 which contains the past form (didn't have). Irrealis meaning
is encoded by the higher predicate wish while the past form in the complement
indicates low degree of confidence.

Past forms thus encode degree of confidence in an irrealis event
being/becoming real. Degree of confidence is encoded by past forms in the
following English conditionals and wishes:

(31) If you are a bit nicer to her she will stay.
     (irrealis realizable)
(32) If you were a bit nicer to her she would stay.
     (irrealis questionable)
(33) If you had been a bit nicer to her she would have stayed. \textit{[irrealis contrafactive]}

(34) We hope they can come. \textit{[irrealis realizable]}

(35) We wish they could come. \textit{[irrealis questionable]}

(36) We wish they could have come. \textit{[irrealis contrafactive]}

I have attempted to capture the meanings of (31)–(36) by the terms enclosed in brackets. The particle if and the higher predicates hope and wish denote that the following proposition is irrealis and the use (or non-use) of past forms indicates degrees of confidence in the realizability of the irrealis events. In (31) and (34) the events are irrealis but realizable. (32) and (35) show that DISTance, i.e. a past form, can denote that the realization of an event is considered questionable. Further marking of pastness by a [+DIST] and PRE R form, as in (33) and (36), denotes that the event has not been and will not be realized. It is contrafactive. It is a language specific feature of English that pastness is used in precisely this way, but the use of past forms for similar notions is usual in languages generally. Hoddinott & Kofod (1976.a) report that desire and contrafactive conditionals are realized by a combination of future and past marking in Ngangikurungur (Australia) and that future plus remote past in Djamindjungan (Australia) encodes “uncertainty or unfulfilled intention about action which took place in the past” (1976.b:700–1).

Past is essentially non–coincidence with S and anteriority (PRE R). Evidence from IE and non–IE languages alike support the claim that past in its non–temporal meaning denotes DISTance from reality expressed as relatively lower confidence in the reality or realizability of the event. This includes lower degrees of probability and the use of DISTance to signal, for example, politeness.

1.8 Summary.

To make this summary as concise as possible reference to sources and cross–referencing has been avoided but can be found in the relevant sections.
TMA systems are universally egocentered because the speaker’s here/now and the speaker’s perception of what is real and true is the only absolute point of reference available to us. Other locations in TMA systems are the product of acts of comparison operating on the primitive here/now – there/then opposition on the one hand, and the opposition Material – Imagined World, on the other.

These acts of comparison have been analyzed from two perspectives: one formal, using a modified Reichenbachian notation, and one more functional/pragmatic. Both analyses support the hypothesis of a four module system in IE languages. The main organizing principles of this system are called DISTance and SUBjectivity; notions which can be defined in terms of the previously mentioned primitives. The saliency of DISTance and SUBjectivity in TMA systems of typologically very different languages can be expected to vary. Evidence from non–IE languages cited briefly in this chapter suggest that two hypothesis are worth investigating: 1/ that these notions will always be expressed in TMA systems and 2/ that they can always be said to be main organizing principles of such systems. I am not in a position to verify or falsify these hypotheses within the constraints of this thesis.

Tense has been described in this chapter as dealing with locations. Firstly, with locations relative to S, i.e. reference time, and secondly with locations relative to any other location (not necessarily S), i.e. event time or Sequence. It was argued that although aspect can encode event time there are important reasons for separating the two notions.

In this chapter I have focussed on tense while claiming to construct a model of not only tense but also modality and aspect systems. To what extent starting at this end is the result of a linguistic/cultural bias I am not sure. Tense is certainly a very salient notion in the English language. However this may be, I believe the following two chapters on aspect and modality respectively will show that, when the model is complete, it does in fact depict TMA as an integrated system.
Chapter 2: Aspect – coincidence and extension.

It is my contention that aspect is best defined on a more primitive level than what has usually been done. This chapter will therefore discuss specific meanings such as ‘iterativity’ or ‘completion’ etc. only briefly and will deal in more depth with the pre-linguistic notions which underlie these meanings.

In 2.1 I will first outline what is generally meant by the term ‘aspect’. The crosslinguistic validity of some aspectral categories will then be discussed in 2.2. Section 2.3 presents some basic assumptions in my own analysis of aspect. It is suggested that the basic difference between tense and aspect is that aspect refers to event intervals, which may or may not be ‘extended’, whereas tense refers only to location of events. It is hypothesized that frequently referred to aspectral meanings such as ‘duration’, ‘iterativity’ and ‘completion’ etc. are subsidiary to, and less primitive than, the ‘extension’ meaning. The notions introduced in 2.3 are further elaborated on in 2.4–5, which deals with aspect from a figure and ground perspective. 2.6 gives a universal definition of aspect and 2.7 describes the interaction of aspect and tense in a four module TMA system. The final section, 2.8, explores aspect in some non–IE languages in the light of the universal definition and within the framework of the proposed description of TMA systems.

2.1 Inherent aspect and morphological aspect.

Most of the literature on aspect deals with the aspectral meaning encoded by particular forms of verbs. Perfectiveness and imperfectiveness can, however, also be seen as inherent properties of predicates. In the following discussion ‘inherent aspect’ will be distinguished from ‘morphological aspect’ when
necessary. The latter term will be used when a base form of a predicate is modified
by affixes or auxiliaries which change its aspectual value.

Langacker (1982) distinguishes between the following types of predicates
and their inherent aspect:

a/ Processes – PFV, eg. ‘run’
   – IPFV, eg. ‘know’

b/ States, expressed by, for example, adjectives and prepositions.

Langacker’s analysis is limited to aspect in English, but much of what is said is
relevant to a crosslinguistic discussion. Processes are said to be inherently
perfective (PFV) or imperfective (IPFV) while states are imperfective (IPFV) but
atemporal. I shall consider states inherently imperfective, although this is an
oversimplification of Langacker’s view that:

...a state can be regarded as the limiting case of an imperfective process, the special case where the temporal
profile is zero (a single point)... This means that if we take a cross-section of an imperfective process at any arbitrarily
selected point in its duration the result is a state, the same situation viewed atemporally. (ibid:272)

PFV predicates denote processes which are complete. In Langacker’s
words they “involve a full trajectory through time”. The IPFV on the other hand,
“describes the mere perpetuation or continuation of a configuration through time
without essential change” (ibid:270–1).

A parallel is drawn between nouns and aspect. Langacker likens the PFV to
countables, the IPFV to mass. Count nouns, such as DOG, are bounded in
physical space and have definite shape just as PFV processes are bounded in time
and have complete trajectories. Pluralization of count nouns is said to correspond
to pluralization or ‘repetitive’ aspect on PFV processes. IPFV processes, in
contrast, are likened to mass nouns, eg. BLOOD, in that they are unbounded,
shapeless and cannot be repeated/ pluralized.

What is meant by pluralization of processes can best be illustrated by an
eexample. The PFV predicate ‘cut down’ in the sentence:
(37) She cut down three trees.

is normally understood to denote three instances of the event. If the verb is
imperfectivized by the addition of BE.....ING, as in:

(38) She was cutting down three trees.

then the process of cutting becomes one mass–like process. Any point in the IPFV
process is a valid instantiation of that process, just as any portion of BLOOD is
blood. The meanings of PFV:IPFV, as analyzed by Langacker, are summarized in
figure 10:

<table>
<thead>
<tr>
<th>Verbs:</th>
<th>PFV</th>
<th>IPFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOUNDED</td>
<td>UNBOUNDED</td>
<td></td>
</tr>
<tr>
<td>COUNTABLE</td>
<td>UNCOUNTABLE</td>
<td></td>
</tr>
<tr>
<td>Nouns:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOG</td>
<td>BLOOD</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 10 PFV and IPFV meanings.

Morphological aspect is treated by Langacker as a modification of the
inherent aspactual value of predicates by auxiliaries and affixes. BE together with
-ING is said to stativize perfective predicates, eg. RUN (PFV) > is running (IPFV).
IPFV predicates do not need to be further imperfectivized, thus KNOW (IPFV) > *is
knowing (IPFV).

The perfect participial morpheme (PERF) is said to stativize a process,
IPFV or PFV, by “focusing on the point at which the trajectory is fully instantiated”.
(Notice that Langacker does not use PERF here for forms such as have done but
only for the participle, e.g. done.) For a PFV process this means the end–point of
the process, eg.:

(39) The leaves are fallen.

(40) He has/is gone. (ibid:279)
However, with IPFV processes – which are stable, unchanging over time – PERF is said to focus at any point in the process without implying completion or change, eg.:

(41) He is well-known.

As pointed out above, any point in the IPFV process is a valid instantiation of that process.

The function of what Langacker calls the ‘aspectual predicates’ HAVE, DO and BE, finally, is to anchor the clause in time. The analysis in this thesis does not include nominal and adjectival uses of what can be considered aspectual forms (in English: gerunds and participles, eg.(41)), although this would be an interesting area to explore at a later stage. Consequently, and in contrast to Langacker, I will always include the auxiliary as part of periphrastic aspectual forms.

Langacker’s analysis provides one explanation as to why certain predicates are not compatible with IPFV aspect (see above). Another explanation is suggested by Comrie (1976) who sees perfectivity as involving:

lack of explicit reference to the internal constituency of a situation  
(ibus:21)

whereas the imperfective makes:

explicit reference to the internal temporal structure of a situation.  
(ibus:24)

According to this analysis, the IPFV can thus not be used of situations which lack internal constituency, e.g.:

(42) he was knowing my name.

whereas situations which do have internal constituency can be seen perfectively or imperfectively, e.g.:

(43) he ran/was running.

It is easy to perceive ‘internal temporal structure’ when activities such as RUN are imperfectivized. With predicates such as FLOW the ‘internal constituency’ becomes much less obvious:
(44) The river was flowing, more peacefully than ever, past our house.

Although the situation in (44) is dynamic (see 2.2), Langacker’s characterization quoted above seems more to the point here. (IPFV denotes “the mere perpetuation or continuation of a configuration through time without essential change.”) I would suggest that the ‘internal constituency’ meaning is less basic than the meaning of extension implied in Langacker’s definition. An event without extension, or which is not referred to as having extension (i.e. PFV predicates or PFV forms), cannot have any internal structure. Extended events, unbounded series of events or events which are referred to as having extension (i.e. IPFV predicates and IPFV forms) can have the additional meaning of ‘internal temporal constituency’.

Whether they in fact do or not depends on the specific type of predicate (see further discussion 2.3 and 5.1.4 on Modern Greek).

2.1.1 Morphological aspect in Modern Greek and English.

Aspectual forms are related to a point of (time) reference and can therefore be coded for DISTance. In Langacker’s words, the function of the auxiliary is to “anchor the clause in time” by carrying tense (Langacker, 1985). In both Modern Greek and English, DISTance is coded on the first verb of a verb group, sometimes an auxiliary. Aspect, in contrast, is coded on the main predicate, sometimes by 0 (zero) as in the case of English PFV.

<table>
<thead>
<tr>
<th></th>
<th>[DIST]</th>
<th>[-DIST]</th>
<th>Aspect Markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFV</td>
<td>wrote</td>
<td>write</td>
<td>0</td>
</tr>
<tr>
<td>WGr</td>
<td>egrapsa</td>
<td>(grapso)</td>
<td>-s</td>
</tr>
<tr>
<td>IPPV</td>
<td>was writing</td>
<td>am writing</td>
<td>BE -ing</td>
</tr>
<tr>
<td>WGr</td>
<td>egrafa</td>
<td>grafo</td>
<td>-C (not /s/)</td>
</tr>
<tr>
<td>PFCT</td>
<td>had written</td>
<td>have written</td>
<td>HAVE -en</td>
</tr>
<tr>
<td>WGr</td>
<td>iha grapsoi</td>
<td>eho grapsoi</td>
<td>EHO -s+3s</td>
</tr>
</tbody>
</table>

Table 7 Aspectual forms and aspect markers in Modern Greek and English.
The table shows aspectual forms and aspect markers in Modern Greek and English. PFCT stands for perfect aspect. In Modern Greek the IPFV non-past (grafa) is considered the base form of the verb. The PFV non-past (grapsa), in brackets in the table, is only used after certain modal markers and conjunctions. The change from the final consonant of the IPFV stem (a consonant other than /s/) to PFV stem /-s/ is often accompanied by other phonological changes, as in the example verb ‘write’: grafa (IPFV stem) which becomes grapsa (PFV stem). The PFCT is formed in similar ways in the two languages. In Modern Greek the auxiliary ‘have’ (evo) is followed by the third person singular PFV non-past (e.g. grapsi).

Tense, person and number is marked on the first verb by suffixes; in table 7 -o is first person singular non-past, -a first person singular past and -i third person singular non-past (the ‘past participle’ is always third singular).

2.2 Crosslinguistic validity of aspectual categories.

In the preceding section I have referred to the aspectual categories IPFV, PFV and PFCT, with examples mainly from English. This section will discuss to what extent these categories can be used to talk about languages of the world.

The crosslinguistic validity of aspectual categories was investigated by Dahl in “Tense and Aspect Systems” (1985). Sixty-four languages, of which twenty-one are Indo-European, were included in this survey which was carried out through the distribution of a questionnaire to native speaker informants. The questionnaire was made up of sentences and short texts forming a context for verbal predicates in their base form, as in the example:

My brother SAY [right now] that the water BE COLD (yesterday but I don't believe him). (ibid:203)

These sentences and texts were translated by the informants and the verb forms classified by the investigator into TMA categories. The analyzed data was then fed into a computer and processed. Seeing how specific verb forms matched up with
certain contexts, Dahl was able to isolate a number of prototypical uses of aspectual categories. These are presented, in the book, as lists of the questionnaire items in which a given category was typically used.

The most common crosslinguistic aspectual opposition was found to be PFV/IPFV. They were also the categories most often marked by bound morphemes, whereas perfect (PFCT) and progressive (PROGR) were usually periphrastic. The relationship between the categories are shown in the diagram below. It would seem that the more specific the aspectual meaning the more likely it was to be expressed periphrastically.

\[ \text{ASPECT} \]
\[ \text{PFV} \quad \text{IPFV} \]
\[ \text{NON-PFCT} \quad \text{PFCT} \quad \text{HAB} \quad \text{CONT} \]
\[ \text{NON-PROGR} \quad \text{PROGR} \]

Fig.11 PFV and IPFV subdivisions.

The right side of the diagram in fig.11 is taken from Comrie (1976) and shows "the most typical subdivisions of imperfectivity" (ibid:25). HAbitudinal meaning is very often included in IPFV, as is the case in Modern Greek. Modern Greek έγραψε ("wrote‘(IPFV)) can thus be translated with the English periphrastic HAB, He used to write., or He wrote, with habitual meaning. Dahl found that specific HAB categories were unusual and always periphrastic when they did occur.

The sub–category PROGRressive is similar to CONTinuous in that it is "imperfectivity not occasioned by habituality" (ibid:33) but different in that it implies non–stativity (ibid:35). From this follows that the English BE....ING form can only be categorized as PROGR. Perception verbs in examples such as (45) or a behavioral process as in (46) would then be considered dynamic situations "viewed in progress, from within", in other words imperfectively/ progressively.

(45) She was hearing voices.

(46) You are just being silly.
The dynamicity of the situation accounts for the implied temporariness, since dynamic situations require continual input of energy if they are to continue (ibid: 49).

Continuousness, as opposed to progressiveness, does not exclude stativity. This is illustrated by the following example in Spanish:

(47) Se les notaban las enormes cicatrices.
      .......be noticeable (CONT).........
      On them were visible the enormous scars.— You could see their enormous scars.

Spanish is especially rich on IPFV distinctions. It also has a PROGR form. He was speaking could therefore be translated either hablar (CONT) or estaba hablando (PROGR). In addition, the CONT has a habitual reading for which there is a periphrastic equivalent: sola hablar (‘he used to speak’). Imperfectivity in Spanish is summarized below.

![Fig. 12 Imperfectivity in Spanish.](image)

The example verb is hablar (‘speak’). It has three different forms which are all to be considered imperfective. In addition, The PFV of the auxiliary estar (‘be’) can be combined with the IPFV Present participle (eg. hablando) to form a PFV–PROGR form estuve hablando (ibid: 22).

Turning now to perfectivity, there was only one PFV opposition in the earlier figure, fig. 11, namely NON–PFCT:PFCT. The NON–PFCT perfective has been referred to simply as PFV. The PFCT and the PROGR are in some ways mirror image equivalents, although the relationship is not completely symmetrical. Both can describe a relationship between two points. PFCT connects a state at the point of reference and an event at an earlier time:
I have eaten.

PROGR can also be used to connect two points in time; for example, a point of reference at which an arrangement for the future exists, and a later time:

She is/was leaving on the next train.

The event is in both cases, (48, 49), of relevance at the point of reference.

PFCT is normally formed periphrastically with a PFV form or stem. A Modern Greek example was seen in table 7: grasps- (PFV stem), egrapsa (PFV past), eho graspei (PFCT non-past). The similarity in form is paralleled by similarity in meaning. The resultative PFCT in:

Somebody has broken the handle.

implies the completeness (of the action) which also characterizes the PFV events.

There are, however, other uses which seem less related to PFV meaning, especially the use of PFCT for persistent situation in English, eg.:

I have lived here for as long as I can remember.

In Dahl’s survey this use does not qualify as a prototypical use of PFCT, in contrast to the so-called perfect of result and experiential perfect (Comrie, 1976:56–60 and Dahl, 1985:133–6).

I have painted it (that’s why it looks different).

Have you been introduced?

...been there...done that...

(52) is an example of the PFCT of result, (53) and the idiomatic expression in (54) exemplify experiential PFCT.

According to Anderson (1982) the general meaning of the English PFCT is ‘current relevance’ of an anterior event, eg.:

He has studied the whole book (so he can help). (ibid:228)

He uses a mapping technique to compare the PFCT in Mandarin Chinese and English, among other languages. Contexts where PFCT is a potential candidate are arranged like islands on a map so that closeness in semantic space is translated into approximate distances in physical space. Borderlines of PFCT in
each language are then drawn. By experimenting with different arrangements on the map Anderson finds one that reveals a considerable area of common semantic space for Mandarin and English, as well as non-overlapping areas. Anderson comes to the conclusion that languages differ as to which end of the PFCT field is most salient: the initial event or the subsequent state at the point of reference. These two cases of PFCT are illustrated in figure 13, which is based on Anderson (1982) but using terms introduced above.

Fig. 13 Skewing of PFCT meaning.

Considering the above example of perfect for persistent situation, (51), it would seem that in English the emphasis on current relevance is rather strong. However, Anderson finds that the present state is more salient in the Mandarin PFCT and thus, in comparison, anteriority is more salient in English. The Mandarin PFCT `le is said to have "uses translated by 'now' and the future" (ibid: 237) and, Anderson suggests, is not used for experiential PFCT (eg. (53), (54)) because experiences are often quite far back in the past. Mandarin thus seems to be an extreme case two (fig. 13). The emphasis on currentness is so strong that the PFCT can refer to a present event. One might expect a strong emphasis on anteriority (case 1 in fig. 13) to have the opposite effect. That is to say, that PFCT non-past and past PFV would become interchangeable. This may account for the development in, for example, French where PFCT has taken over the functions of the preterite. Bybee and Dahl (1989), in a crosslinguistic study of grammaticization, also report that the development of forms from semantically PFCT into semantically PFV is a common path of change. Given this instability of PFCT as a category it would seem important to arrive at a semantic definition of PFCT aspect independent
of what is considered PFCT on morphological grounds in any particular language. This is the approach taken throughout this thesis (see for example 2.6–7).

Discussions on aspect rarely fail to mention Slavic languages which are said to have a rich aspectual system. It is therefore interesting to compare a Slavic system to the languages already mentioned above. Figure 14 below shows forms of the Russian verb lit (‘pour’):

<table>
<thead>
<tr>
<th>PAST</th>
<th>PRESENT</th>
<th>FUTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFV: vyili</td>
<td>PFV: 1ju</td>
<td>PFV: vyilju</td>
</tr>
<tr>
<td>IPFV: ilii (vyilivai)</td>
<td>IPFV: 1'ju (vyilivaju)</td>
<td>IPFV: budu lit'</td>
</tr>
</tbody>
</table>

Fig. 14 The Russian IPFV verb lit'.

Stated in very simple terms, verbs in Russian have an inherent PFV or IPFV meaning which is modified (imperfectivized or perfectivized respectively) by affixes. The IPFV verb lit (pour), non–past l'ju, is thus perfectivized by the affix vy–. Its non–past PFV form refers to the future. There is also a periphrastic IPFV–future form. Present reference is always expressed imperfectively. Present and future forms are marked by the non–past suffix –ju (1 pers. sing.). The PFV marker, vy– (masc., sing.), can also be understood as a resultative marker, similar to the particle in pour out. Pour out, which is then in itself PFV, can be imperfectivized, e.g. by the affix –va, which usually has iterative meaning (the forms in brackets). One feature of Russian aspect which makes it different from, for example, Modern Greek, is the complex interaction between the inherent meaning of the simple verb and affixes (perfectivizing or imperfectivizing); ‘speak’, for example, can be perfectivized to convey the meanings ‘persuade’ or ‘begin to speak’ depending on the choice of prefix (cf. Forsyth, 1970, Timberlake, 1982).

A superficial look at the Russian aspectual system suggests, however, that there are also similarities with many other systems. The greater aspectual diversity
in the past than in the present and the use of PFV for future and past, but not for present, are crosslinguistically common features.

Although aspect is rather an elusive topic involving many concepts which are difficult to define, the research surveyed above shows that there are in fact important similarities in how languages handle aspect. Dahl (1985) isolated prototypical uses of aspecual forms and also found regularities in how aspect is marked. The IPFV, PFV and PFCT categories were among the most common in the languages surveyed, although the English use of PFCT for ‘persistent situation’ proved to be quite unusual. Anderson (in Hopper, 1982) revealed similarities in the PFCT between typologically highly diverse languages.

The emerging pattern of crosslinguistic regularities is further backed up by data from some non-IE languages to be discussed in 2.8.

2.3 A fresh look at aspect: Event intervals.

Aspect, I would suggest, results from similar acts of comparison as does tense, with the important difference that not only event locations are referred to, but also event intervals. By event interval is here meant the interval in which the event occurs and which is delimited at the one extreme by either the beginning or end of the event (E) and at the other by R (the point of reference) itself.

a/ "-----------------/E/\-----------/E-----
   E...event
b/ --/E/\---------/E/\-----------------
   R...point of reference

Fig.15.a & b Event intervals in relation to point of reference.

The event interval can be co-extensive with the event, i.e. it can have the same duration in time as the event, but very often the interval is in fact larger than the event itself. One example is future events, such as in fig.15.a, referred to by the IPFV:

(56) He’s leaving tomorrow.
The event interval of a future event seen imperfectively, as in (49), extends from the point of reference (in this case S, the moment of speech), or before, to the assumed end of the event. IPFV can thus refer to event intervals which extend from R into POST R time even when such intervals are of longer duration than the event itself. POST R time is anticipated/predicted etc. and thus the end of the IPFV event (if an end is assumed) is in the IW. IPFV event intervals can therefore always be said to be unbounded in the MW. Often the unboundedness is more absolute and no end to the event is implied even in IW (e.g. (57) below).

The IPFV also denotes events AT R:

---------------\ \ EEEE \ \ EEEE---------------

Fig. 15.c An event interval in relation to point of ref.: an event AT R.

The event in fig. 15.c is ongoing at R as exemplified in:

(57) I'm singing in the rain....

In this case, the event interval is co-extensive with the event.

The aspect which refers to event intervals which extend into PRE R time (fig. 15.b above) is the Perfect (PFCT):

(58) He has left.

A past event seen perfectively, (58), is set in an interval which extends from the beginning of the event to R (and possibly beyond). The event can, but does not necessarily, fill the whole interval (see also 5.2.2).

A clarification might be needed at this point. I am not claiming that a translation of the above examples into any other language would necessarily contain the same aspectual choices, even if the language in question has PFV, IPFV and PFCT aspect; aspects are subject to language specific constraints. My claim is rather that compatibility with the type of event intervals described above is a defining feature of aspect (see also 1.6).
The fact that aspect, or more specifically, the event intervals referred to by aspect, is the result of similar acts of comparison as tense is illustrated in the figure below:

Fig. 16 Acts of comparison realized by tense (A) and aspect (B).

Figure 16.A, repeated from 1.1, shows the PRE, AT and POST locations as outcomes of acts of comparison. 16.B illustrates the PFCT and IPFV event intervals which are created by such comparisons. I have already made the claims that 1/ events in intervals extending PRE R are commonly encoded by perfect (PFCT) aspect, 2/ events in intervals extending POST R are expressed by the imperfective (IPFV) aspect. Additionally, I now claim, that 3/ a third aspect, the perfective (PFV) refers to events in event intervals with no other extension than that of the event and with no particular relationship to R. PFV aspect can be represented by:

\[ \begin{align*}
\text{a/} & \quad \text{---------/E}/\text{---------} \\
\text{b/} & \quad \text{-/E}/\text{---------R}/\text{---------} \\
\text{c/} & \quad \text{---------R}/\text{---------} /E/ \\
\end{align*} \]

Fig. 17 PFV event intervals.

The three different uses of PFV aspect illustrated in fig. 17 are exemplified below:

17.a: The following day, at dawn, he left. \( E(E'R) \)

17.b: Can't you see that somebody broke it? \( E'S \)

17.c: If you don't put it away somebody will break it. \( S'E \)
In the notation, E denotes ‘event’, R ‘point of reference’ and S ‘the moment of speech’. The events in bold print are all in the PFV aspect. The reference point in (59) is different from the reference point in the other two examples. The point of reference for the event _left_ is set by the time expression preceding it, and the event occurs AT that past point. This corresponds to fig.17.a. The point of reference in (60) is the moment of speech, as shown by the main clause, and the event _broke_ is PRE that event, as in fig.17.b. The PFV varies with PFCT in cases such as (60) (but the aspectual meaning may differ, see chapters 3, 6). (61) also has S as its reference point but the PFV event _will break_ is here POST that point (fig.17.c). As illustrated in all three examples, the PFV aspect does not refer to events that are in any way connected to their reference points. There is no reason therefore to posit an event interval with an extension other than the event itself. A PFV event interval is always co-extensive with the event. The PFCT and IPFV, in contrast, can refer to intervals which are more extended than the event. I shall refer to the PFV interval as _discrete_ and as having ‘no particular extension’, ‘discrete’ being defined by COD as: “separate, individually distinct, discontinuous...”.

From the preceding discussion can be inferred the main reasons for positing ‘event intervals’. IPFV and PFCT differ from the PFV in that they denote a direct relationship between the event and the point of reference (see further 2.5), thus the event interval is not separate from R even when the event is cut off from R in a temporal sense (as in (56) and (58)). The PFV, in contrast, refers to event intervals as not having any extension and thus as being separate from R. For the same reason, PFV events are not understood as extending in time.

The fact that the PFV aspect does not indicate any particular relationship to R might make it seem so ‘unmarked’ for aspect as to be virtually indistinguishable from tense. However, whereas tense refers to location, aspect refers to event intervals which have _shape_ and _structure_ (or lack of structure).
That event intervals have *shape* is evident in terms such as ‘durational aspect’ for IPFV, suggesting extension, and in ‘punctual aspect’ for PFV. Events themselves may have structure. This has been referred to by Comrie (1976) in his often quoted claim that:

> aspects are different ways of viewing the internal temporal constituency of a situation. (*ibid* : 3)

I have found the notion of interior structure very valuable in the analysis of aspect (but see discussion in 2.1 and 5.1.4). The perception of structure is apparent in terms such as ‘iterative’ and its subcategory ‘habitual’ for certain uses of IPFV. However, iterative events can be seen either as a row of discrete events or as a continuous line of events. Put differently, they can be seen as several discrete shapes or as one extended shape:

- a/ ---/E/--/E/--/E/--/E/--/E/--
- b/ ------/E/------/E/------/E/------

Fig. 18  Alternative ways of viewing iterative events.

The aspect gives shape rather than structure to the event. Iterative events encoded by PFV aspect are viewed as in fig. 18.a while the IPFV may denote iterativity perceived as in fig. 18.b. A typical example is habitual events, which in English are encoded by the PFV, as in fig. 18.a, whereas in Modern Greek they are seen as in fig. 18. b, and realized by the IPFV. (62) and (63) are translation equivalents.

(62)  I smoked (PFVp) twenty cigarettes a day.

(63)  Καπνίζα ikosi tsigarra tin imera.

   *smoke*-IPFV1ps  twenty cigarettes DEF day

In other words, habituality is seen as a continuous whole in Modern Greek but as a series of discrete events in English (see also 5.5.2).

Claims that aspect plays an important part in the backgrounding/foregrounding of events also indicate that shape is involved. Especially the IPFV, but also the PFCT, have often been referred to as having a backgrounding
function (see for example Givon, 1984:288). This is explained by the fact that the event intervals to which they refer are extended. They therefore have the appropriate shape for a background against which other events can be perceived (see also 5.7.1 on backgrounding PFCT in Modern Greek).

In this section it has been claimed that aspect expresses the same basic comparisons of location in relation to R as tense does. These comparisons were analysed in chapter 1 in terms of coincidence. What seems to distinguish aspect from tense is that the former deals with event time only (not reference time) and, most importantly, that it also refers to the interval in which an event is set and thereby to shape. In order to bring these claims about aspect together I will discuss briefly a paper by Hale on the notion of coincidence in Warlpiri.

2.4 Central and non-central coincidence.

In "Notes on World View and Semantic Categories: Some Warlpiri Examples." Hale (1986) makes the claim that there is a universal opposition which can be called central vs non-central coincidence and which can be especially clearly perceived in Warlpiri grammar. This opposition is described by Hale as a manifestation of our innate tendency to organize the world in terms of figure and ground.

The relevance of the figure & ground perspective to a number of different linguistic categories, including tense and aspect, is discussed by Wallace (1982). His account is of interest here because it clarifies what is meant by these terms when applied to language. The relative saliency of members of linguistic categories, eg. different aspects, are discussed and Wallace claims that:

the speaker uses such categories* to structure an utterance (of one or more sentences) into more or less salient portions, and the listener uses such categories as clues to interpreting the speaker's verbal picture. *e.g. tense, aspect (my comment) (ibid:214)
Figures are said to be more salient than grounds. The author goes on to name characteristics of figures and grounds. An abbreviated list is presented below:

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>-thing-like, solid, discrete</td>
<td>-uniformed, diffuse, shapeless, continuous, unbroken</td>
</tr>
<tr>
<td>-well-defined, tightly</td>
<td>-less definite, unstructured, loosely organized</td>
</tr>
<tr>
<td>organized</td>
<td>-boundless</td>
</tr>
<tr>
<td>-contoured, surrounded,</td>
<td>-unlocalized</td>
</tr>
<tr>
<td>bounded, enclosed</td>
<td>-below, behind</td>
</tr>
<tr>
<td>-localized</td>
<td>-far</td>
</tr>
<tr>
<td>-above, in front</td>
<td>-lesser contrast</td>
</tr>
<tr>
<td>-near</td>
<td></td>
</tr>
<tr>
<td>-greater contrast</td>
<td></td>
</tr>
</tbody>
</table>

Table 8 Some characteristics of figures and grounds (abbreviated from Wallace, 1982:214).

The figure & ground perspective can be applied to the coincidence notion, referred to extensively in chapter 1, if the point of reference is taken to be the ground and the event is the figure. The point of reference is merely a location in relation to which an event takes place. I suggest that an event is more dynamic than a location (although to varying degrees; see 2.2) and that the event therefore contrasts with the ground/location. In addition, the location, i.e. R, is less salient because it has to be known first before the event can be situated in time. With this in mind, I would add to Wallace's list the characteristics 'new information' for figures and 'old information' for grounds.

Hale splits the coincidence notion into central and non-central coincidence. Put in figure and ground terms, **central coincidence is the relationship in which the figure coincides with the ground**, non-central coincidence is that of one end of the figure coinciding with the ground. Hale (1986) claims:
...that a fundamental abstract semantic opposition of central versus non-central coincidence is at work. I believe that this opposition is a semantic universal, though it is to be observed with particular clarity and purity in the grammar of Warlpiri. Its universality follows, I suggest, from the fact that it constitutes a part of the mental structures which enable human beings to acquire the semantic systems of their native languages. (ibid: 252, my underlining)

To understand Hale’s distinction and to see how it relates to aspect as described in the present thesis, we shall first have a look at Warlpiri (Australia) through Hale’s eyes.

The central – non-central opposition, the argument goes, is evident in the system of case, in the directional enclitics and in the tense and aspect system. Its most concrete manifestation is in the local cases.

<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON-CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ngka, -ria LOC</td>
<td>-kurra ALL</td>
</tr>
<tr>
<td>-wana PERL</td>
<td>-ngurlu EL</td>
</tr>
</tbody>
</table>

Table 9 Local cases in Warlpiri. (ibid: 9)

The interpretation of the cases is made in terms of figure and ground (or ‘place’). The locative denotes that the location of the figure coincides with the place. Translation equivalents in English could be: on, at, in, by. The perlative (in English e.g. along, over, by, past, through, among) denotes that the location and the trajectory of the figure correspond (in case of motion) or the figure and its linear arrangement coincide (in case of position or stance). The allative and the elative, finally, both have the meaning of the perlative (described above), except that only one extreme of the figure’s trajectory or its linear arrangement coincides with the place. In the allative case (e.g. to, up to, onto, into), the end coincides with the place. In the elative (e.g. from, out of, off of) it’s the beginning which corresponds to the place.

An example of the locative is:
Other examples of the locative include a more extended location (in the shade) and a container (in the billycan). In each example, as in (64), the location is the ground and the nominal functioning as subject is the figure. The periphrastic is exemplified in (65):

(65) Nantuwu ka karru-wana parnka-mi
horse PRES creek-PERL run-NONPAST
'The horse is running along the creek (bed).'

Here it is the creek which is the ground and the trajectory of the horse which is the figure. The trajectory of the horse as it is running coincides with the ground.

The remaining two cases, allative (to) and elative (from), are exemplified below. The first example is the first half of a longer example from Hale.

(66) Walga-kurra kuja-ka-lu parnka-mi-rra,
ground-ALL COMP-PRES-333 run-NONPAST-THITHER
ngula ka-lu lani jiti-mi-rra walga-kurra;....
then PRES-333 afraid descend-NONPAST-THITHER ground-ALL
'When they run off to the (low) ground, it is in fear that they descend to? the (low) ground;...'

this-EL place-EL run-PAST leaf taking-to-IMP-PRIVATIVE
'He (just) cleared out from this place without taking his leaf.'

In (66) 'they' are the figure and the 'low ground' is the ground. The end of their trajectory, which is created by their running off or descending, coincides with the ground. Conversely, in (67), the beginning of the trajectory created by 'his' clearing out coincides with the ground, i.e. the place he is leaving.

Based on this description of the local cases and on further examples in Hale (1986), I suggest that the concepts expressed can be illustrated as below:

<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON-CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOC</td>
<td>→ GOAL</td>
</tr>
<tr>
<td>EXT</td>
<td>SOURCE</td>
</tr>
</tbody>
</table>

Abbreviations:
LOC= location
EXT= extension

Fig. 19 A graphic illustration of the coincidence concept.
In fig. 19 the figure-ground relationships described by Hale have been called LOCation, EXTension, GOAL and SOURCE. My analysis here builds on table 9 but introduces a number of notions and generalizations not mentioned by Hale. Central coincidence denotes that figure and ground coincide, non-central coincidence means that the ground and one end of the figure (or of its trajectory or configuration) coincide. Within the central/non-central opposition two other distinctions, not discussed by Hale, can be noted. The figures differ firstly in shape; they can be extended or not extended. Secondly, extended figures differ in their direction relative to the ground.

LOC, in fig. 19, does not imply a trajectory or a linear configuration. It denotes only the coincidence of a figure with a location, as does the locative in Warlpiri, and so does not refer to extension. The perative, mentioned by Hale, is an example of the EXTension relationship between figure and ground where the extended figure coincides with the ground. No reference is made to end points or beginnings so the figure is open ended, or unbounded.

Non-central coincidence implies extension by making reference to, in the one case, the end of the figure, in the other case, the beginning. I have called the end point GOAL and the beginning SOURCE. When the figure extends to the ground it is the GOAL which coincides with the ground. When it extends away from the ground it is the SOURCE which coincides with the ground. These relationships are expressed in the Warlpiri local case system by allative and elative, respectively.

Hale also discusses directional enclitics, complementizers and tense and aspect in Warlpiri and claims to find the same central/non-central opposition encoded in each linguistic category. Below is a table of Hale’s classification of aspect, irrealis markers and tense in terms of coincidence. The information in the table is drawn from Hale’s discussion and examples.
<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON- CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPFV ka- &amp; NONPAST</td>
<td>PFV 0- &amp; NONPAST</td>
</tr>
<tr>
<td>Ipa- &amp; PAST</td>
<td>0- &amp; PAST</td>
</tr>
<tr>
<td>Ipa- &amp; IRREALISp</td>
<td>0- &amp; IRREALISp</td>
</tr>
</tbody>
</table>

Table 10 The encoding of coincidence by tense and aspect in Warlpiri (according to Hale, 1986).

The aspect markers ka, ipa and the zero morpheme represent the 'auxiliary base' in what Hale calls the 'core aspectual system'. These are combined with verbal inflections for tense (past/non-past) and mood (irrealis). According to Hale, the IPFV always denotes central coincidence, whether in the past, non-past or irrealis.

(68) Wawirri ka parnka-mi
kangaroo IPFV run-NONPAST
'The kangaroo is running.'

(69) Wawirri-IPA parnka-ja
kangaroo-IPFV run-PAST
'The kangaroo was running.'

(70) Kaji-Ipa-rna wawirri nya-ngkarla, kajika-rna luwa-rni.
CCOMP-IPFV-1 kangaroo see-IRREALIS, POTENTIAL-1 shoot-NON-PAST
'If I saw a kangaroo (now), I would shoot it.'
(examples ibid:248-9)

The glosses are the original ones, except that I have used my own abbreviations for the aspects. Hale uses PREsent as a gloss for ka in (68), but states that it marks imperfective. He claims that IPFV events in Warlpiri coincide with their point of reference. That is to say, in (68) the event is ongoing at the moment of speech - a typical use of the IPFV crosslinguistically - in (69) it is ongoing at a past point of reference and in (70) at a hypothetical present point. In the case of tense and aspect, Hale thus treats the point of reference (R) as the ground and the event as the figure. The IPFV is said to denote central coincidence with the ground. Implied in Hale's analysis is the meaning of extension of the figure as depicted below:

EEEEE & EEEEEE

Fig.20 The IPFV in Warlpiri.
In contrast to the IPFV, the PFV is said to denote non-central coincidence, defined as the beginning or end of the figure coinciding with the ground. Examples of the PFV in Warlpiri are:

(71)  Mgaju-0-rna parnka-mi
     I-PFV-1 run-NONPAST
     'I'll run.'
     'Let me run!'

(72)  Ngaju kapi-0-rna parnka-mi
     I FUT-PFV-1 run-NONPAST
     'I will run.'
     'I am going to run.'

(73)  Mactuwu-0 parnka-ja.
      horse-PFV run-PAST
     'The horse ran.'
     (examples ibid:250-1)

According to Hale, the inception of the event in (71) coincides with its point of reference “to the extent that this is possible or practical, given the nature of the situation involved” (ibid:251). This use, it is said, contrasts with the overtly marked FUTURE in (72) in that the former, (71), is an ‘immediate future’ while the event in (72) relates specifically “to a future point of reference”. In (73), finally, the event “can be seen as ending or beginning at a past point of reference”, according to the author.

\[
\begin{array}{|c|c|c|c|}
\hline
ASP + TNS & past & present & future \\
\hline
(71) PFV + NON-PAST & \text{---} & \text{/}/
\hline
(72) FUT + PFV + NON-PAST & \text{---} & \text{?/E/}
\hline
(73) PFV + PAST & \text{R/} & \text{E---} & \text{+} \\
\hline
\end{array}
\]

Fig. 2.1 Hale’s analysis of the PFV in Warlpiri.

Fig. 2.1 is a graphic interpretation of the discussion in Hale (1986). Slashes (/ / / ) are used to indicate event intervals. The numbers on the left refer to the respective examples. I would suggest that Hale’s analysis of (71) supports the claim that PFV denotes non-central coincidence only if one posits an extended event interval to which the aspect can refer. This is the interpretation given in
fig. 21. Hale makes no direct reference to an interval, but its existence is implicit in the claim that the PFV in (71) refers to the inception of a future event. However, reference to extended intervals does not convincingly explain (72). In this example the event is said to relate not to S, but specifically to a future point of reference (ibid: 251). This suggests that the event is located AT a future R, i.e. that it coincides centrally with its ground. In other words, the PFV would seem to denote non-central coincidence of an event relative to S in (71), but central coincidence of an event AT a future point of reference in (72). (A `future in future' interpretation, i.e that the event is POST a future R, may be possible, but this is not mentioned in the discussion.) At least in the case of (72), Hale’s own analysis thus contradicts his claim that PFV aspect encodes non-central coincidence. In (73), the PFV is said to denote non-central coincidence where either the beginning or the end of the event coincides with the ground (see fig. 21). My understanding of this is that (73) could be rendered in English as either (74) or (75):

(74) The horse started to run / ran off.

(75) The horse had run.

Since only one extreme of the figure should coincide with the ground it would seem that Hale’s claim holds for (71) and (73) only if an extended event interval is posited. I will suggest an alternative solution which is both consistent with the Warlpiri data, as far as I can judge, and with more general characteristics of aspect crosslinguistically. The alternative interpretation of the above examples is as follows:

<table>
<thead>
<tr>
<th>ASP + TNS</th>
<th>past</th>
<th>present</th>
<th>future</th>
</tr>
</thead>
<tbody>
<tr>
<td>(71) PFV + NON-PAST</td>
<td>+-----/R/-+----/E/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(72) FUT + PFV + NON-PAST</td>
<td>+-----+-----/ER/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(73) PFV + PAST</td>
<td>/ER/-----+-----+----+ (74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/E/-+-----/R/-+-----+----+ (75)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 22 An alternative analysis of PFV in Warlpiri.
I suggest that the PFV is unmarked for coincidence with its point of reference. In this interpretation (71) would not denote the inception of the event but simply an event POST R, with no particular connection between R and the event. The event interval would be coextensive with the event and separate from R (see fig. 17.1). The ‘inception’ meaning reported by Hale could well be contextual. The choice of English translation also indicates an ‘immediate future’ meaning; again I would suggest that it is contextual and not part of the aspectual meaning. The PFV in (72) would denote an event AT a future R, just as Hale suggested. (73), finally, would refer to an event AT a past R or PRE a past R. The former would give the reading in (74) above, the latter would correspond to interpretation (75). Notice that, although (75) in English contains a PFCT form it can be read as realizing PFV aspectual meaning where the event is not linked to R by result, current relevance etc. In my analysis, the PFV in (71)–(73) thus denotes events which are either non–coincidental with R, (71), (73), or centrally coinciding with R, as in (72), (73). This can be explained by the PFV being unmarked for coincidence with R.

The solution I have presented is a hypothesis which has to be tested by linguists with a thorough knowledge of Warlpiri. It is, however, supported by its compatibility with the characterizations of the PFV aspect discussed in previous sections. The PFV was there said to be ‘bounded’ and to ‘make no reference to the internal structure of the event’ (see esp. 2.1). The lack of internal structure, it was said in 2.3, is due to the PFV event and its interval not having any particular extension. One can assume that the aspect called PFV in Warlpiri grammar has been so classified because it shares features with PFV aspects in other languages. The interpretation in fig. 22 implies such a parallelism and seems to be consistent with the data presented. It should be pointed out that the unmarkedness of the PFV event for coincidence with its ground does not rule out a range of interpretations caused by the context. This is in the nature of unmarkedness. Thus
an event in the PFV past could be understood to have only begun AT R, as Hale
claims for (73), if the context favors such an interpretation.

We shall now examine Hale’s claim that tense in Warlpiri also encodes
coincidence. More specifically, the claim is that IPFV aspect and non-past tense
each imply central coincidence while PFV aspect and past tense imply non-central
coincidence, but that aspect can override tense. The IPFV with Ipa- in (69) is thus
categorized as denoting central coincidence despite its co-occurring with the past
tense marker.

Hale’s claim that non-past tense denotes central coincidence is supported
by the analysis of tense in 1.1. If E (the event) is the figure and S (the here/now) is
the ground then present events coincide centrally with S. The suggestion that past
tense should encode non-central coincidence is, however, more problematic. It
implies that propositions about past events posit an extended figure one of whose
extremes coincides with R (the ground).

The exact nature of this figure is not explained in Hale (1986). It could
perhaps be argued that the point of reference is always the moment of speech in
Warlpiri, since this seems to be the only grammaticized point of reference. In the
case of past tense, the figure could thus extend from S to the past event. However,
past events in chronological order are ordered relative to each other, suggesting
that they have points of reference in the past rather than at S. The extension of the
figure is not clear in this case. I suggest that past tense denotes non-coincidence
of the event with its reference point. I am thus claiming that Past and Non-Past in
Warlpiri realize non-coincidence and coincidence respectively.

I have discussed Hale’s notion of central - non-central coincidence at
some length because, as I will argue below, it helps explain the meanings of
aspects not only in Warlpiri but crosslinguistically. To the central - non-central
distinction I have suggested must be added the notion of non-coincidence.
Coincidence meanings of aspect and tense can now be summarized in table 11.

I have also included location of events (PRE, AT, POST).

<table>
<thead>
<tr>
<th>ASPECT</th>
<th>COINCIDENCE CNTRL</th>
<th>INCNTRL</th>
<th>NON-COINC. PRE</th>
<th>AT</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPFV</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>PFV</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>PFCT</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>TENSE</td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>PRES</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>PAST</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 11 Aspeccual and tense encodings of coincidence.

Table 11 does not refer to any particular language but rather to crosslinguistic categories. A cross (+) means that the tense/aspect category can encode the particular semantic notion. It can be seen that neither event time (1.6) nor the coincidence/non-coincidence opposition distinguish aspect from tense. Aspect does, however, differ in that it encodes the central/non-central dichotomy discussed above while tense does not. Aspect can thus be said to overlap with tense while still being a distinct category. The notions which differentiate aspects from each other – extension and directionality – are not included in the table. What follows is a summary of these and of the contents in table 11.

**Tense** refers to location of events. From a figure and ground perspective the event is the figure and S is the ground. (A discussion of other reference points than S is not considered essential at this point.) Events coincide or do not coincide with the ground:

Present tense denotes that the event is AT S. The event coincides centrally with its reference point.

Past tense denotes non-coincidence of an event PRE S.

**Aspect** refers to events in event intervals. The figure is the event interval and R is the ground. Events coincide centrally or non-centrally or not at all with the ground.
IPFV aspect is commonly used for events AT R or POST R. In the former case the event interval coincides centrally with R. In the latter case the beginning of the event interval coincides with R; i.e. there is non-central SOURCE oriented coincidence (see fig. 19).

PFCT aspect can refer only to events PRE R. The end of the event interval coincides with R. This is GOAL oriented non-central coincidence (see fig. 19).

PFCT and PFV have a tendency to merge (e.g. in German, French and Modern Greek) and so there are uses of PFCT forms in many languages which do not correspond to the definition of PFCT aspect given above (cf. 2.2 and (73),(75)). The solution which has been adopted throughout this thesis is to make a distinction between PFCT forms for PFCT aspect and PFCT forms realizing PFV aspectual meaning.

PFV aspect can refer to events PRE, AT or POST R. Some languages have further restrictions so that, for example, in Modern Greek the PFV cannot be used for events AT S. Crosslinguistically, however, I suggest that the PFV does not indicate any particular relationship to S or any other point of reference. Furthermore, it was said above, the PFV aspect refers to event intervals which are coextensive with the events they contain. Consequently, if the event is PRE or POST its point of reference neither end of the figure coincides with the ground. The PFV is thus used for (events in) event intervals which coincide centrally with R but also for event intervals which do not coincide in any way with R. This means that PFV is unmarked for coincidence.

Table 11 makes it clear that both aspect and tense are related to the coincidence concept. In 1.1 it was shown that coincidence or non-coincidence was one of the pre-linguistic notions underlying tense. Aspect is also related to coincidence; central coincidence is encoded by both present tense and IPFV aspect and non-coincidence by PFV aspect as well as past tense. It is interesting to note that this explains the crosslinguistic tendency for present to be encoded
exclusively by the IPFV, whereas for past events the PFV is usually the unmarked choice (Russian, Modern Greek, Warlpiri etc.). But coincidence in terms of tense (i.e. location only) is not necessarily the same as coincidence in aspectual terms. Aspect deals with parameters such as extension (shape) and direction, in addition to location, and this may affect whether an event is perceived to coincide or not with its reference point. These particularly aspectual notions will be elaborated on in the following section. An example of the difference between coincidence perceived aspectually and in terms of tense is given in 2.7.1.

2.5 Extension and direction of intervals.

Hale did not discuss shape and directionality of the figure, although these elements were especially clearly discernible in the account of local case (see fig. 10). They are in fact the notions which distinguish aspect from tense and different aspects from each other. The figure below summarizes the aspectual encoding of coincidence, shape and directionality in languages with a three-way aspectual distinction: PFV–PFCT–IPFV.

<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON-CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>{PFV\textsuperscript{1}} [□]</td>
<td>PFCT [\longrightarrow]</td>
</tr>
<tr>
<td>IPFV [\longrightarrow]</td>
<td>IPFV [\longrightarrow]</td>
</tr>
</tbody>
</table>

\[\text{\textsuperscript{1} unmarked for coincidence, see discussion below.}\]

Fig. 23 Aspectual encodings of coincidence, shape and directionality.

The extension and directionality meanings of the aspects are summarized below and illustrated with figures from 2.3.

The IPFV always refers to an event interval which is extended. Either the event has begun before R and is still ongoing, or else the event interval extends POST R. In the former case the event coincides centrally with the ground, in the
latter non-centrally. The POST R event is not seen as separated from R. It is of some relevance, perhaps ‘existing’ as a plan or prior arrangement, at R:

\[
\text{IPFV} \quad \overline{---/EEEEEEEE/---}\\
\overline{-------------/R/-------------}\\
\]

**Fig. 24** Extension and directionality of the IPFV interval.

We can say that the IPFV denotes an event in an interval with *prospective extension*, the interval it refers to continues into the future.

The PFCT denotes an event in an interval which extends PRE R. The event is not seen as separate from R but is somehow relevant at this point; it could have a result at R (see 2.2).

\[
\text{PFCT} \quad \overline{--/EEEEEEEE/E/---}\\
\]

**Fig. 25** Extension and directionality of the PFCT interval.

We can say that the PFCT denotes events in intervals with *retrospective extension*, the interval it refers to stretches back in time.

The PFV denotes events in intervals which are co-extensive with E. More specifically, the event interval is not seen as extended nor does it have any particular directionality relative to R. If a PFV event is PRE or POST R it will be seen as separate from R.

\[
\text{PFV} \quad \overline{---------/ER/-----------}\\
\overline{--/E/----------R/-----------}\\
\overline{-------------R-------------/E/---}\\
\]

**Fig. 26** The PFV interval; absence of extension and directionality.

The PFV is unmarked for coincidence.

A PFV event can be seen as simultaneous with (thus not separate from) another event at R if 1/ both events coincide centrally with R, i.e. occur AT R, and 2/ the other event is in the IPFV. This is illustrated by the following example:
(76) I was cooking dinner when you rang.

In contrast, when two events are PFV, they are seen as separate from each other since their intervals have no extensions which can coincide (but see also 2.7.1). If the two PFV events occur AT R, they are therefore normally understood to occur in chronological order:

(77) It is quite amazing how I dressed and got into the car in less than five minutes!

The character of the PFV can be expressed: the PFV denotes events in discrete, non-extended intervals. Intervals with no particular extension cannot be directional in relation to R. The interpretation that events occur in chronological order can be cancelled by e.g. when, as in I dressed when I got into the car, but the PFV events are still seen as discrete (see also 2.5.1, below).

An interesting question arises from this description of the aspects. Why do languages tend to encode ongoing events and POST R events by the same aspect; the IPFV? We have seen above that the event interval of an extended (ongoing) event is open ended while the 'source oriented' interval of a POST R event ends with the event (see also fig.19). I would suggest that the explanation is to be sought in the potentiality of this latter event. It means that the IPFV event interval is open ended in MW (see 2.3). A factor which complicates the description is that, as we have seen, PFCT event intervals can also be open ended. For this and a number of other reasons I have found it useful to separate the two meanings of the IPFV. Furthermore, it needs to be ascertained, at a future date, whether there are, in fact, languages which distinguish between the two uses.

2.5.1 The function of discreteness and the use of PFV aspect.

If there is a difficulty in perceiving PFV events as not coinciding centrally with the ground it is perhaps justified by the inherently discrete nature of PFV event intervals. Since they are separate from their original points of reference (this previously set point is the point referred to above as R) the listener will look for
another location with which they could coincide. This in turn is explained by the
centerizations of figure and ground in 2.4, on the basis of which one might
reasonably suggest that a figure cannot be separated from its ground. If an
event/figure is separated from a particular point of reference another point of
reference would therefore have to function as its ground. In the case of PFV
events, events may or may not coincide with their (original) point of reference, but
they do coincide centrally with the point of reference they are setting. Thus, in
(77), the event dressed does not coincide with its R which is the moment of
speech, but it does necessarily coincide with the past point of reference it is
setting for the next event. When PFV forms are used, the location of the original R
is backgrounded and the location of the new R is foregrounded. This could explain
why PFV forms are typically used to bring the action forward in narratives. That
PFV aspect can be used in this way is due first of all to its being unmarked for
coincidence and secondly to the discreteness of PFV event intervals.

Whether PFV events will be seen as setting new points of reference,
bringing the action forward, will depend on the context. There is, for example, no
need to ‘look for’ a new ground when there is a ground in the text with which the
figure (the event interval) can be seen to coincide. An example of this is the
following extract from Paprotte (1988).

(78) Dogs barked, people ran about, children cried; nobody knew what to
do.

The PFV events in the example do not occur in any particular order, they all occur
at a particular point of reference set in the previous discourse. They could even be
simultaneous in time, but they are still discrete events since PFV event intervals
have no extension. The effect can be seen as a ‘polka dot’ pattern of events.
Paprotte calls it ‘deictic’ PFV.
2.6 A universal definition of aspect.

A universal definition of aspect can now be formulated. The discussion on which it is based will first be summarized.

The characterizations arrived at in previous sections (2.3–5) are compatible with the ones suggested by Langacker and Anderson, reviewed in 2.1–2. The PFV was there said to be ‘bounded, countable’, the IPFV ‘unbounded, mass–like’ and the PFCT was said to connect two points in time, an anterior event and its point of reference. The following discussion has added to that an analysis of the cognitive, pre-linguistic primitive notions which manifest themselves in the aspects.

Hale (1986) showed that the central – non-central coincidence notion was encoded by a number of linguistic categories in Warlpiri. I have suggested that this opposition is relevant for generalizations about tense and aspect on a crosslinguistic level but that the semantic components extension, direction and non-coincidence need to be added. The fact that the same notions clearly discerned in the Warlpiri local case system can also be used to define aspect supports the claim that they are primitives.

UNIVERSAL DEFINITION OF ASPECT.

GENERAL:
Aspect refers not only to location of events but also to the intervals in which the events occur.

SPECIFIC:
IPFV aspect refers to events in extended intervals which coincide with R.
The beginning or the centre of the interval coincides with R.

PFCT aspect refers to events in extended intervals which coincide with R.
The end of the interval coincides with R.

PFV aspects denote events in intervals which are co-extensive with the event. The interval has no particular extension nor any particular relationship to R.
These universal definitions do not exclude the possibility of radically different aspect systems, as long as the general definition of aspect is met and the meaning of 'interval' is the one given in 2.3.

2.7 Aspect in a four module TMA system.

One of the most fundamental assumptions of this thesis is that a lot of overlap and interaction between different TMA notions exists and is possible because of their close semantic relation. It was shown above, for example, that tense distinctions and aspect have developed partly out of the same expressive need, namely the wish to convey coincidence or non-coincidence of events with their ground. This section deals specifically with the relationship of aspect to points of reference.

Fig.27 shows how the three aspects relate to each other and to a point of reference:

![Fig.27 Aspects in relation to reference point.]

The horizontal line in fig.27 represents time. The three points on the time axis show possible locations of event times. The middle dot (''), furthermore, is the point of reference (R). While tense can refer to several reference points through a series of acts of comparison (see 1.4.2), aspect characterizes events with respect to one reference point only. This is illustrated in the more abstract figure (fig.27.A), while B. is an example of realizations of the aspects in relation to the
reference point S. (In the A. figure, PFV realizations are represented by 0 (zero) rather than by the third person singular -s.) The arrows, in both figures, stand for aspectual intervals, PFCT showing retrospective directionality, IPFV prospective directionality. The crossing of the PFCT and IPFV arrows illustrate that the two are not semantically incompatible. In English there is in fact a PFCT–IPFV form (have been taking). In Modern Greek such a combination is not permissible, but it is sometimes possible to encode the same situation as either IPFV or PFCT (see (243) in 5.2.4). The PFV, which is unmarked for extension and which stands in no particular relationship to R, is represented by the horizontal time line.

The single module in fig.27.B shows how the aspects relate to the specific point of reference S. But verb forms which encode aspect also express DISTance and SUBjectivity. Below is the full four module system, with English realizations, showing the relationship of aspect to these notions:

![Diagram of the Four Module TMA System with English realizations.](image)

Fig.28 **The Four Module TMA System (with English realizations).**

In fig.28 capitals are used for aspectually least marked forms (PFV) encoding events AT either of the four points of reference. All the forms in a
particular module denote events relative to the point of reference in their own
paradigm, e.g. was taking denotes an event AT or POST a [+DIST][−SUBJ] point of
reference. The figure makes apparent the double, or even multiple function of
forms. Perfect forms, for example, express on the one hand PFCT aspect,
illustrated by retrospective arrows (←), but also double as expressions of
anteriority (E↑R), with PFV aspectual meaning. The figure shows that whereas an
event PRE S can be either PFCT or PFV, an event PRE a past point of reference
can only be expressed by PFCT past; there is no choice of aspect. This accounts
for the ambiguity of sentences such as (79) when taken out of context:

(79) The secretary had arrived at five.....

This has two readings; either she had arrived at five on the dot or else she had
already arrived at five. Only the second reading is an example of PFCT aspect.

The basic function of the [+DIST] PFV, exemplified by TOOK, is to convey a
new point of reference, as when PFV forms are used to bring the action of a
narrative forward (see 2.5.1).

(80) At midnight he took another sleeping tablet.

The same PFV form can also express an event in relation to S (fig. 28, lower case
took), as in for example:

(81) He is sleeping like a log, so I know he took it.

The basic functions of forms with WILL and WOULD are [+SUBJ],
expressing various epistemic modal notions, conditionals etc. (see chapter 3).
They do however also have a temporal function indicating R−E (fig. 28, lower case
will, would) as in:

(82) He will be 75 in March so I've bought him a present.

or the non-conditional:

(83) I knew he would be 75 in March so I bought him a present.
Neither (82) nor (83) can be said to contain any element of uncertainty as to whether or not the birthday will come about. Although the event is POST R, and thus occurs in IW, it is treated as an ascertainable fact.

The fact that the same forms are seen to express more than one meaning in fig.28 is a result of the conceptual nature of the model. It makes it not simply descriptive but also explicative. The PFV PRE and POST forms in the [-DIST][-SUBJ] paradigm show that the [+DIST][-SUBJ] and [-DIST][+SUBJ] paradigms follow logically as an extension of a speaker centred notion of ternary sequence (see also chapter 2, e.g. fig.9, and fig.31 below). This is not only appealing in an abstract sense but also reflects the actual workings of the system as evidenced in a number of syntactic phenomena to be discussed in later chapters (e.g. 5.3, 6.8). In addition, ambiguities such as the one exemplified in (79) can be better understood if form and function are carefully separated. A reduced version of the model, where double occurrences of forms had been eliminated would lose importantly in explicative power.

2.7.1 Aspect and event time.

The English TMA system is based on a past/non-past dichotomy. This was apparent in the discussion of reference time in chapter 1, but it is evident also in the way aspects encode event time. One aspect (the PFCT) encodes PRE R events, another aspect (the IPFV) both AT R and POST R events. The PFCT is thus associated with past events, IPFV with non-past events (in relation to a given R). In addition, there is PFV aspect which can encode any of the three relationships to R. As was seen in 1.6, this leads to the speaker often having a choice of aspect. Both the IPFV and PFV, for example, are compatible with events AT R as in:

\[ (84) \textsc{I saw him walk out of the room.} \]

\[ \text{TNS [R [+DIST] \} \] \]

\[ \text{ASP [PFV]} \]
I saw him walking out of the room.

The event time of WALK OUT is the same, (AT R), in both (84) and (85). The event occurs AT the reference time set by the complement taking predicate SEE; it thus coincides with R in terms of tense (see 2.4). Tense simply refers to location of events from a relatively small set of possible locations. Aspect on the other hand refers to the event interval and thereby to the shape and directionality of the interval. The PFV interval has no particular extension. For the event to be able to coincide with its point of reference in aspetual terms, R needs to be constituted by an interval (or time frame if R is not set by an event) with some extension (see 2.5). The predicate SEE is inherently IPFV and therefore provides such an extended interval. Consequently both the PFV walk out and the IPFV walking out can be used here to denote an event AT R.

The difference between (84) and (85) is that in (84) the WALK OUT event is presented as discrete, with no particular extension, in (85) as having extension. The PFV walk out does not extend and so it is understood to be complete. The IPFV walking out extends into the IW (POST R) and so its completion is uncertain.

The point illustrated by (84), (85) is that both PFV and IPFV aspects can encode events AT R. The exact location of the relevant R is sometimes less obvious than above. However, when the semantics of complement taking verbs are taken into account, as in the analysis of (86) below, it becomes apparent that the compatibility of aspects with event times posited in 1.6 holds.

I told him to walk out of the room.

At first glance, it might seem that the complement event is simply located POST R, R being the past time reference set by told. However, the inherent semantics of
TELL requires a slightly more complex analysis. The predicate TELL sets a POST R point of reference for its complement event (but not for other following discourse); the event WALK OUT is located AT this point of reference. That this is the correct analysis is evident if we replace walk out in (86) by to have walked out. The interpretation of the resulting (admittedly, inelegant) sentence would be that the speaker required the addressee to be gone by some future time e.g. 'by the time I came back'. The complement event denoted by to have walked out would, in other words, be interpreted as occurring PRE the R set by TELL.

It is apparent that inherent aspect is involved in determining the point of reference of the complement event and that the predictions made in 1.6 hold. An interesting discussion of the semantics of speech act verbs such as, for example, TELL are to be found in Wierzbicka (1988).

2.8 Aspect in some non–IE TMA systems.

An essential feature of the model in fig.28 (2.7) is that it is conceptually based and as such less likely to be language specific than a model based on realizations. It has been constructed from primitive notions with realizations as the top layer, rather than from a specific language down. This approach makes it a 'modular' system where each paradigm is a complete mini–system. The possibility of a linguistic–cultural bias cannot be excluded from any analysis. Its extent can only be determined by further research. Nevertheless, I consider it likely that the modularity of the analysis presented here could make it usable as a descriptive tool for TMA systems radically different from those of IE languages. In the following section we will apply relevant components of the analysis to some non–IE languages. They include a language with a perhaps minimal TMA system (Hawaiian). The applicability of the description to a language with multiple remoteness distinctions will also be explored. Naturally, it is well beyond the scope of this thesis to investigate in any depth the validity of the proposed descriptions of
such various languages. The discussion that follows should be seen as speculation aimed at stimulating an exchange of ideas.

Givón (1982, 1984) outlines the TMA system of English based, Hawaii Creole, as reported by Bickerton, and discusses the semantics and discourse functions of the different TMA markers. 0 (zero) marking is said to denote present state or past action and the event is foregrounded, stay denotes short term states and continuous, habitual or iterative events. The Future marker is go, which also stands for conditional, irrealis and imperative. Bin finally' has a 'look-back function’ and conveys anteriority and PFCT.

Based on this account and the examples supplied by Givón, I suggest the following system:

![Diagram of TMA system](image)

Fig. 29 The TMA system of English based Hawaii Creole.

Fig. 29 shows TMA markers preceding a main verb. An example from Givón is:

(87) …No shit, I bin go stay figure only about twenty-five thousand...

(ibid:126)

Bickerton, reportedly, glosses this as contrafactive would have been figuring while Givón (1982) argues that the context suggests the non-contrafactive had been figuring. The matter cannot be settled here, but evidence in chapter 3 suggests that go denotes LW events, whatever the correct English translation might be.
From the account in Givón (1982, 1984), it seems that Hawai‘i Creole has a Future – Non-Future split with Future forms fulfilling other than purely temporal functions, i.e. Future forms being [+SUBJ]. There is no Past – Non-Past opposition and consequently no [+DIST] paradigms. This also excludes a separate ‘conditional’ paradigm, since this would be the result of a combination of [+DIST] and [+SUBJ] meanings (see discussion fig. 7). The examples given by Givón, strongly suggest that bin has the functions associated with [+DIST] forms in more extended systems.

An even more economical TMA system is found in Hawaiian, which might well offer an example of a minimal system. The particles which mark TMA categories both precede and follow the base verb. According to Alexander (1968) there are two spatio-temporal particles: nei meaning here/now and ia meaning there/then. These code speaker's present (or other point of reference given by the context) and past/anterior. The particle e before the base verb denotes future and imperative and is said to also function as an infinitive marker. The 'real' meaning of e is said to be 'before', but it seems more likely that it should be interpreted as a general 'not here/now'. There seem to be two Aspect markers: ua and ana. The former is a marker of PFCT denoting completion or resultative. ua+V+e forms 'a sort of pluperfect' according to Alexander. Ana, finally, is the continuative particle, expressing an event in the past, present or future.

I suggest the following TMA system for Hawaiian:

![Diagram](image)

Fig. 30 The TMA system of Hawaiian.
The figure shows a main verb (V) and particles. The particle ‘ke’ is apparently deictic. In Alexander’s translations it is sometimes equivalent to the definite article in English, but it is also used to form present tense.

If the above representations of Hawaiian and Hawaii Creole are valid, then English and Modern Greek differ from the former two in the way the unmarked \([-\text{DIST}][-\text{SUBJ}]\) has been extended, so that there are now also realizations, in the verb system, of the notions \([+\text{DIST}]\) and \([+\text{SUBJ}]\). A more abstract representation of the English TMA system makes the similarities obvious:

\[
\begin{array}{c}
[+\text{DIST}] \\
-\text{ED} \\
\downarrow \\
\text{HAVE} \\
\text{BE} \\
\downarrow \\
-\text{EN} \\
\text{ING} \\
\downarrow \\
[-\text{DIST}] \\
\text{WILL} \\
\downarrow \\
[-\text{SUBJ}] \\
\text{WILL}
\end{array}
\]

Fig. 31 The unmarked TMA module with extensions and English exponents.

Another feature found in some non-IE languages is that of multiple remoteness distinctions. Remoteness in these languages is very different from DISTance in that the degree of remoteness is quantified. One interesting example is Kiksht (Chinookan, North America). For the following discussion I have taken the data from Hymes’ (1975) discussion of Kiksht but my analysis differs from the original on two points to be discussed.

Kiksht is said to have several remoteness distinctions which act as time frames for the directional markers \(u\) and \(t\). Below is a rough outline of the remoteness distinctions and their realizations.
<table>
<thead>
<tr>
<th>beyond a year</th>
<th>within seasonal round</th>
<th>present</th>
</tr>
</thead>
<tbody>
<tr>
<td>gal</td>
<td>níg</td>
<td>náí</td>
</tr>
</tbody>
</table>

Fig. 32 Remoteness distinctions in Kiksh.

As can be seen in fig. 32, Kiksh has four degrees of remoteness in the past, plus the unmarked present and a future form. Degree of remoteness and future are indicated by affixes which denote ordered time-frames. Starting from S the past time-frames cover periods roughly equivalent to ‘today’, ‘yesterday’, ‘the current season and up to a year ago’, and ‘more than a year ago’. The degree of remoteness from S is quantified, but not in an absolute sense. Hymes comments:

> The relative temporal difference is invariably maintained within regular limits but the immediate context affects the resulting calibration with days, hours, weeks, months and years... Stylistic, or socio-expressive meaning enters as well. (ibid: 318)

Combined with the time-frame affixes Kiksh also uses two directional affixes, u- and t- which, together with a tense affix are said to indicate relative nearness to S within the given frame. I suggest that, based on Hymes’ analysis, it is clear that these are aspectual affixes.

With some verbs they are said to have a non-temporal meaning and their directionality is obvious, e.g.:

(88) ga-n-u-ya I went

(89) ga-n-t-i I came (ibid: 321)

The prefix ga(l) denotes the most remote past time frame, ya/i is the stem and u- and t- are the directional affixes. In some cases both a spatial and a temporal interpretation is given:

(90) a-st-u-gwilti-a It will rain soon, or there/that way

(91) a-s(t)-t-gwilti-a It will rain here/this way, or remote future (ibid: 322)
In (90)-(91), the prefix a(l) denotes future and u and t are the directional affixes.

What makes an interpretation of the non-spatial use of the directionals difficult, according to Hymes, is that the meaning seems to be opposite and contradictory in the past and future. Thus, in the past, u- denotes what is farthest from S in a given frame and is usually the unmarked choice, whereas t- denotes what is nearest S.

(92) i-n-i-u-lada-ba I threw it out of the house

(93) i-n-i-t-lada-ba I just now threw it out of the house  (ibid:318)

The prefix i- (sometimes ig-) denotes the time-frame ‘today’, u-, in (92), denotes the unmarked, most remote, end of the frame while t-, in (93), means nearness to S and is translated ‘just now’ (ibid:318-9). With reference to the future the affixes seem to switch meanings so that u- means nearness to S and t- remoteness within the future frame. This is illustrated by (90), (91) above.

The interpretation is further complicated by the fact that the present, which is unmarked for time-frame, plus t- can express past events, perhaps with continued relevance, according to Hymes, and that present with u- has either generic or continuative meaning.

Hymes claims that an interpretation of the directional affixes as ‘from’/‘to’ respectively is inadequate. Relating u-/t- to the present as a central reference point where the one is consistently nearer to S and the other more remote also fails to adequately explain the seeming contradiction between past and future.

Hymes comes to the following conclusion:

A consistent explanation requires that each directional prefix be conceived as marking a relationship between two points or terminals, in some such way as this: u-: close starting point, distant ending point (from here to there); and t-: distant starting point, close ending point (from there to here)......that the extension from spatial use be dependent on that point or terminal which is nearest the present in a given case.  (ibid:325)

Hymes suggests that the apparent shift in the meaning of u-/t- from past to present is not a shift at all, but a consequence of the fact that the directionality is always in relation to the present. The quote implies that the time frames are
ordered relative to S, as carriages in a train, so that the end of the past frames are nearer S than their beginnings, while the reverse is true of the future frame (cf. Hill, 1978). In contrast to Hymes, I would suggest that the directional affixes are related to a reference time set, not by S, but by the time frame prefix. This interpretation is strengthened by the clearly aspectual meanings ascribed to the affixes when they occur with the present frame (zero marking). I suggest that they are, in fact, aspect markers. Aspect was defined in terms of figure and ground in 2.6. If a similar analysis is applied to Kiksh, we find that the u− affix would specify that figure (event) and ground (time frame) coincide at the beginning end of the frame, while the t− affix denotes that the event coincides with the ground at the end of the frame. This alternative analysis is illustrated below.

| beyond a year | within seasonal round | present | | |
|-------------|----------------------|---------| | |
| gal         | nig                  | na1     | ig | a' |
| t --- u     | t --- u              | t --- u | t  | t  |

\(^1\)The u-/t- distinction does not apply in the 'na1' tense.

Fig.33 Alternative analysis of tense and aspect in Kiksh.

A difference between Hymes’ and my analyses is apparent, in fig.33, in the demarkation of ‘grounds’ (the boxes). The implication is that the directional affixes do not denote locations directly related to S, but locations within a particular time frame.

The absolute present is not a time frame at all but merely the borderline between past and future. The present frame in Kiksh is marked by 0 (zero). The interpretation of present (zero) plus directional affixes was given above: t− can mean past event “perhaps with continuing relevance”, present with u− can have “generic or continuative meaning”. ‘Continuing relevance’, or more specifically, ‘current relevance’ was claimed by Anderson to be the meaning of English PFCT (see 2.2). ‘Generic’ or ‘continuative’ meaning is typically encoded by the IPFV
aspect (HABituality being one type of generic meaning). The fact that these interpretations occur with the zero time frame suggests that the aspectual meanings of the u– and t– affixes are basic. Also consistent with the claim that they are aspect markers is the fact that directionals combined with time frame markers may code simply ‘event time’ within that frame. The marking of event time (i.e. the sequence of events in relation to a point of reference) was shown in 1.6 to be one function of aspect in English and other IE languages. If u– and t– are aspect markers in Kiksht, they thus behave typically in this respect.

It is not possible to be more precise as to the place of the ‘directionals’ in the aspect system without having more detailed knowledge of Kiksht than what can be gleaned from Hymes (1975). It is not clear from this data how well the parallel with IPFV/PFCT holds in tenses other than the present; can u– denote continuousness on a past event as well as in the present, for example?

To summarize, it seems that Kiksht has an aspectual opposition which is, at the very least, semantically close to the IPFV/PFCT as defined in 2.6, and which is encoded by the affixes u– and t–. These affixes locate events within time frames. They can also describe the character of the event (e.g. ‘continuous’, ‘current relevance’), at least when the time frame is unmarked (present). This indicates that the directionals can refer to event intervals which are more extended than the event itself (see 2.3). The time frames are ordered relative to S. Consequently, in a future time frame an event is near S if marked by u– and more remote if marked by t– (90), (91) while the opposite holds in the past (92), (93).

![Table]

<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON-CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>u–</td>
<td>t–</td>
</tr>
<tr>
<td></td>
<td>----&gt;</td>
</tr>
</tbody>
</table>

![Diagram]

Fig. 34 The coincidence notion in the Kiksht aspect system: the u–/t– affixes.
Fig. 34 shows the relationships of figure to ground encoded by the directionals in Kiksht.

It has been my aim, in this chapter, to show that aspect can be defined at a deeper, more 'primitive' level than what has been usual. Such commonly used terms as 'continuous', 'punctual' and 'current relevance' have been shown to be subsidiary to the pre-linguistic notions of coincidence (central and non-central), extension and directionality. The analysis has been shown to be applicable to typologically very diverse languages. It also has the advantage that aspect can be distinguished as a separate category without obscuring its semantic relatedness to tense (see especially table 11). A major emphasis has been placed on treating aspect as an integral part of TMA systems. The following chapter will define and discuss modality, the third major component of such systems.
Chapter 3: Modality and other SUBJective notions.

This chapter deals with the SUBJectivity notion within which modality is a sub-category, and subsequently with modality itself. The first section recapitulates what has been said up to now about SUBJectivity and suggests linguistic areas where its influence as an Organizing Principle is most apparent. 3.2 discusses the relationship between SUBJectivity and factivity and 3.3 deals with modality and its relationship to SUBJectivity. In 3.4 the conclusion is reached that SUBJectivity and ‘irrealis’ should be treated as two separate notions. The following three sections, 3.5–7, describe different types of modality commonly encoded by verbs or particles and give a universal definition of modality. The terms ‘necessity’ and ‘possibility’, used in the definition, are the topic of 3.8. In 3.9–10 it is discussed whether complements should be regarded as having modality. The relationship between tense, aspect and different types of modality and how they are encoded is discussed briefly in 3.11. The final section, 3.12, summarizes the discussion of SUBJectivity and modality.

3.1. SUBJectivity as an Organizing Principle.

In chapters 1–2 it was hypothesized that the two main concepts around which the verbal system is organized were DISTance and SUBJectivity. In terms of coincidence, [+SUBJ] events were said to be those which did not coincide with ego’s experience or perception of reality. Events in the Imagined World (IW) were thus inherently [+SUBJ]. This included future and other modal or near modal notions which, according to Oltan (1978) were said to encode Uncertainty. The reason Uncertainty was seen as inherently SUBJective (rather than, for example, just ‘irrealis’) was that it required the speaker to make a judgement, thereby expressing a particular attitude to the situation or proposition. A speaker’s judgement and attitudes are usually clearly subjective in the every day sense of the
word. This subjective meaning often receives special [+SUBJ] encoding, but meaning also interacts with language specific constraints (see chapter 6).

In the discussion of Bull's (1963) framework, [+SUBJ] events were equated with Anticipated and Contemplated events. The latter are realized by 'conditional' forms which result from a combination of [+SUBJ] and [+DIST] meanings (see 1.5). But it is not only in futures and conditionals that the SUBJectivity notion is apparent, as will be shown in the following sections. Some examples of constructions that receive [+SUBJ] encoding in English, Modern Greek and Spanish are given below.

(87) Future:
   a. Eng. It will be getting dark soon.

(88) Complements within irrealis or future scope:
   a. WGr. Elpizo na'rhis ke'si.
      (I hope you will come too.)
   b. Eng. I hope to have finished.
   c. WGr. Otan grapasis mi ksehasis na mou chosis tin dhieftinsi sou. (time clause) (When you write, don't forget to give me your address.)

(89) Uncertain or doubtful events:
   a. Sp. No creo que vaya a venir.
      (I don't think he will come.)

(90) Conditional main and sub clauses:
   a. WGr. Tha woithousa an mou to zitouses. (transl. equivalent of 95.b)
   b. Eng. I would help if you asked me.

(91) Modalized or semantically modal clauses:
   a. Eng. It must have been awkward.
   b. WGr. Na'rthis! (Come! - order, invitation etc.)
   c. Sp. Que venga! (Let him come! - permission etc.)

The structures in (87)-(91) will be discussed throughout this chapter and in chapter 6. The claim is that verb constructions of the types exemplified commonly exhibit particular formal characteristics which signal that their semantic content is subjective and that SUBJectivity can thus be said to be an Organizing Principle of verb systems.

The characterisation of SUBJectivity as pertaining to events in the IW finds support in Lyons' (1982) discussion of subjectivity and deixis.
...the basic function of deixis is to relate the entities and situations to which reference is made in language to the spatio-temporal zero-point — the here-and-now — of the context of utterance. Admittedly, this zero-point is egocentric, as everyone who ever talks about deixis would agree. But its egocentricity is not necessarily subjective in the sense of this (Lyons') paper: space and time can be treated as objective dimensions of the external world, in which speaker and addressee are located and interrelated as might be any other middle-sized physical objects.

( ibid: 121, my parenthesis and bold print.)

Although Lyons himself does not draw this conclusion explicitly, the implication of the above is that there is a Material World which can be treated as objective and an Imaginary World which is subjective. Lyons' definition of subjectivity is as follows:

In so far as we are concerned with language, the term 'subjectivity' refers to the way in which natural languages, in their structure and their normal manner of operation, provide for the locutionary agent's expression of himself and his own attitudes and beliefs. 

( ibid: 102)

This definition will be adopted here with one proviso: not all semantically subjective notions need be encoded by special SUEJective forms in any particular language. As Lyons points out, the non-temporal functions of tense, for example, are more subjective than its temporal functions (ibid: 115, see also 3.2).

'Subjectivity' as a term for the semantic content of an utterance is therefore different from (albeit overlapping with) SUEJectivity as an Organizing Principle of TMA systems.

This chapter will further define SUEJectivity. The topic is dealt with again in chapter 6 on Modern Greek SUEJectivity. Summaries of findings are presented at the end of this chapter and in 6.14

3.2. Subjectivity and factivity.

The question may arise whether SUEJectivity is not, in fact, to be equated with non-factivity. After all, Uncertain events and Imagined World events would seem to be, to varying degrees, non-factive. The discussion requires a clarification of what is meant by factivity.
Lyons (1977) discusses the notion of factivity, introduced by Kiparsky & Kiparsky (1970). Lyons' discussion seems to imply that there is a close relationship between non-factivity and subjectivity but the exact nature of this relationship is not made clear.

Three degrees of factivity are distinguished by Lyons (1977): factive, non-factive and contrafactive. Epistemically non-modalized assertions are considered factive, e.g:

\[
\text{Factive} \\
(92) \text{That's Henry.}
\]

Non-factive utterances are, for example, open questions, so called second conditionals and epistemically modalized utterances.

\[
\text{Non-Factive} \\
(93) \text{Is that Henry?} \\
(94) \text{If that was Henry then...} \\
(95) \text{That might be Henry.}
\]

Contrafactivity, finally, is expressed in conditionals with unreal past reference, e.g.

\[
\text{Contrafactive} \\
(96) \text{If it had been Henry...}
\]

Factivity is seen to interact with tense. The past - non-past opposition is considered more basic than future - non-future. Given that past forms can be used with non-past meanings, past is described as being 'remote' (cf. 1.7.3).

Temporal past and present are considered factive but, as mentioned above, Lyons (1982) considers non-temporal uses of tense 'more subjective' than temporal uses. He argues that past expresses modal remoteness and therefore tense can be considered another modality (see also Kress, 1977). Statements describing future events or states are said to be of necessity 'subjectively modalized utterances' (the performative component has been modalized) and thus non-factive.
Of the three degrees of factivity posited by Lyons, the third, contrafactivity, is described as a special case of subjectively modalized remote possibility. It is a combination of the remoteness and non-factivity features. This characterization suggests that Lyons was in fact visualizing a system very similar to the one suggested in this thesis. Based on Lyons (1977) the following figure can be constructed in an attempt to capture the interrelationships between factivity and remoteness (cf. also Matthiessen, 1984:80).

```
FACTIVE

PAST PRESENT NON-REMOTE

REMOTE

CONTRA-

FACTIVE FUTURE

NON-FACTIVE
```

Fig. 35 A schematic interpretation of Lyons’ analysis of factivity and remoteness (based on Lyons, 1977:816-20).

From what has been said above one would expect remoteness to include both temporal and non-temporal notions and thus to be roughly equivalent to DISTance. However, only the temporal past can be considered factive in Lyons’ terms. This is one important point where Lyons’ analysis differs from the one presented in earlier chapters.

The problems with Lyons’ perspective becomes most obvious when an attempt is made to map actual realizations onto notions, as is the case in Matthiessen (1984). One reason may be that, in terms of realizations, Lyons did not limit his analysis to any defined area of the language system.

These objections are not completely justified since the author does not purport to give a complete account of tense and modality. Nevertheless, there are some problems with the description. They are in large part related to the definition of terms. The choice of calling future and contrafactive ‘non-factive’ rather than
'subjective' would seem rather arbitrary, since they are both 'subjectively modalized' in Lyons' terms.

A number of objections are also raised in Matthiessen (1984). One is that Lyons seems not to make allowances for the fact that future can be treated as factive; Matthiessen quotes an example from Hornby:

(97) My father will be seventy-five in May. (ibid:78)

The problem of representing the factive and non-factive uses of future has been dealt with in previous chapters by the use of time lines to relate event time to reference time (and to modality and aspect). In 2.7 (fig.28) the will-future could be seen to encode both [+SUBJ] reference (and modality) as well as [−SUBJ] POST S event time.

Another objection raised by Matthiessen is that whereas the 'contrafactive' paradigm (fig.35) seems to be the sum of its component features (remoteness and non-factivity), the relationship between 'past', remoteness and factivity is not clear in Lyons' analysis. The introduction of the DISTance notion and SUBJectivity notions, in chapter 1, explicates this relationship; 'past time' is the temporal interpretation of [+DIST][−SUBJ] forms (see 1.7.3 on non-temporal meanings). The analysis, in chapter 1, of how the contrafactive paradigm arises also referred to the Organizing Principles. Contrafactive forms such as would have taken, for example, are [+DIST][+SUBJ] and the interpretation of DISTance is not necessarily temporal. Since we also showed how event time interacts with these notions, we can explicate the element of 'pastness' in this particular form; would have taken denotes an event PRE R.

The nearest equivalent to Lyons' contrafactive category in the four module system presented here is thus the 'Contemplate' paradigm (realized by 'conditional' forms) where DISTance and SUBJectivity meanings combine. However, Lyons did not deal with the interaction between binary reference time and ternary Sequence and, consequently, did not analyse realizations of the
meanings in fig. 35 as organized into paradigms. Therefore pastness in terms of reference time (DISTance) and pastness in terms of event time (PRESence) were analyzed as one and the same by Lyons (1977).

Lyons' use of the term 'subjectivity' differs somewhat from the use of SUBJectivity in this thesis. SUBJectivity can be placed on that end of a 'reality status scale' which comprises unreality and contrafactivity. I have referred to this end of the scale as Uncertainty, an inherent feature of, for example, futurity. The other extreme is factivity. In the verbal system the highest degree of factivity is expressed by (the speaker's) present, followed by the temporal past. SUBJectivity is also characterized by its egocentrisedness. The assessments or judgements made about Uncertain events through the use of [+SUBJ] encodings are typically based on ego's perception of the world (but see 3.11):

```
[+SUBJ]
  
  Uncertain

Fig. 36 Semantic components of SUBJectivity.
```

In fig. 36 SUBJectivity is shown to denote that which is egocentrised and Uncertain. That SUBJectivity and non-factivity or 'irrealis' are related concepts is clear, as will be further discussed in this chapter, but [+SUBJ] encodings may focus either on the egocentrised component of the linguistic expression or on its Uncertainty component. Consequently, linguistic expressions which are not subjective in the conventional sense of being closely linked to Ego, or which are factive, may still receive the same encoding as non-factive, egocentered expressions (see (175), 'objective modality', in 3.11). Even less prototypically, some [+SUBJ] encodings merely denote the dependency of a complement proposition on a controlling subject (6.10.5). The Organizing Principle SUBJectivity is needed to account for such cases.
In the Contemplate paradigm [+DIST] marking, e.g. the form *would* rather than will and [+SUBJ] marking, e.g. the presence of a modal, both occur on the same verb. For example, *would take* in a conditional is both [+DIST] and [+SUBJ]. Although Lyons was reported above as claiming that non-temporal meanings of past ([+DIST]) forms were more subjective than temporal ones (see 3.1), one would expect the function of these two markings to differ.

What their function is can be illustrated by English conditionals. The conditional structures of interest here typically have three characteristic features in English. The hypothetical condition denoted by the subclause is marked by if, the main clause contains a modal verb and, finally, [+DIST] marking is used with non-temporal meaning.

What the modal ([+SUBJ] marking) does in this type of structure is to denote the degree of possibility or necessity of the outcome, given that the condition is fulfilled (see 3.8). The DISTance marking, on the other hand, shows the degree of confidence the speaker has in the fulfillment of the condition on the one hand, and in the predicted outcome on the other.

\[(98)\] If you come early we can go for a drink.
\[-DIST\] \[-DIST\]
\[(99)\] If you come early we could go for a drink.
\[+DIST\] \[+DIST\]

Conditionals which are asserted with a great degree of confidence are [-DIST], those which are less confident are [+DIST], as is illustrated by (98)–(99) above. One can express a greater degree of confidence in the fulfillment of the condition than in the outcome, as exemplified in (100), but the reverse, (101), is at best strange:

\[(100)\] If you come early we could go for a drink.
\[-DIST\] \[+DIST\]
\[(101)\] *If you come early we can go for a drink.
\[+DIST\] \[-DIST\]

This analysis is supported by the fact that the restriction on the combination of plus and minus DISTant forms, illustrated by (101), makes sense in terms of the real
world and by the fact that it only holds when DISTance has a non-temporal interpretation:

(102) If she was there, she will understand what I mean.

[+DIST] [-DIST]

(102) is thus acceptable if the DISTance marking is taken to refer to reference time rather than to degree of confidence. Modern Greek conditionals are also subject to the same restriction.

The point illustrated by (98)–(102) is that ‘degree of Uncertainty’ and ‘degree of confidence’ are separate notions. The former is marked by the [+SUBJ] particle if (see ‘indeterminacy’ in 3.9) and by modal verbs (also [+SUBJ]). A low degree of confidence is expressed by [+DIST] forms in the subclause and in the main clause.

Figure 9.A in 1.5, repeated below as fig.37, shows how these notions overlap in the verb system:

Fig.37 The four module TMA system: some possible interpretations.

Fig.37 shows the overlap of DISTance and SUBJectivity. It illustrates that the non-temporal use of the contrafactive paradigm combines the meanings of Uncertainty and a (low) degree of confidence in the proposition being or becoming true. If factivity is seen as gradable, so that present events are more factive than past events, then the unmarked module can be said to represent factivity.

It is hoped that by separating semantic notions (e.g. subjectivity) from such notions when they function as Organizing Principles’ (e.g. SUBJectivity), and by grounding the latter in primitive concepts such as the imagined World and Ego, greater explicative power will have been achieved. It will become increasingly more
evident in the following chapters that the focus on verb realizations makes it possible to map realizations onto meanings, thus making the model testable.

3.3. What is modality?

In the following six sections the notion ‘modality’ will be delimited and different types of modality defined. Apart from the commonly used modal categories such as epistemic and deontic, others have been suggested in the literature. Ransom (1986) suggests that complementizers carry modal meaning and Palmer (1986) puts forward evidentiality as a modal category. The widest definition is possibly that of Halliday (1985) who contrasts modality with polarity in the following way:

Polarity is the choice between positive and negative, as in *is/ isn’t, do/ don’t.*

.....There are intermediate degrees: various kinds of indeterminacy that fall in between, like ‘sometimes’ or ‘maybe’. These intermediated degrees, between the positive and negative poles are known collectively as MODALITY. *(ibid:85–6)*

This view leads Halliday to consider, for example, freuency adverbials and expressions of ‘willingness’ such as be determined as exponents of modality. Although degrees of indeterminacy or Uncertainty will be considered an important characteristic of modality, the definitions arrived at in this chapter will be narrower than the above.

The most precise notion of modality is perhaps that of modal logic. Its relevance to modality in language may not be self-evident since it is only marginally interested in the intuitive understanding of language and takes a basically non-linguistic approach. However, many of the terms used most frequently derive from modal logic. Some of them and their definitions will therefore be listed, as a background to the following sections.

There are two types of modal operators in modal logic: necessity and possibility. The former is defined by McCawley (1981) as that which is “true in all possible worlds”, whereas the latter means that the propositional content is true in
some world(s) accessible from a given world. The following sub-types are identified (ibid:273):

Logical necessity prevails if the given system ensures that the propositional content will be true, e.g:

(103) Either there is a yeti or else there isn't a yeti.

Epistemic necessity is related to pre-knowledge or to the laws of physics, which allow a judgement as to whether the propositional content is true, e.g. If we know that Bach was born in 1685 and died in 1750, then (104) is epistemically necessary.

(104) Bach was forty years old in 1725. (ibid:273)

Moral necessity means that somebody will be at fault unless he sees to it that the proposition is, or becomes, true, e.g:

(105) You must write to your mother.

Temporal necessity is expressed by so called gnostic truth statements, e.g:

(106) Lions are fierce animals.

Logical possibility means that the rules of inference do not force the propositional content to be assigned the value false, e.g:

(107) He can (knows how to) speak French.

Epistemic possibility: The propositional content is consistent with what is known. (108) is epistemically possible given the knowledge that he speaks French.: 

(108) He might speak (it is possible that he speaks) French with the delegates.

Moral possibility: The propositional content is permissible and not in conflict with the moral code, e.g:

(109) He could (was allowed to) speak French to the delegates.

Questions which arise are which of these or other categories are relevant to natural languages in naturally occurring discourse situations. In some of the examples above, the modality is not linguistically encoded. This is because the propositions are considered factive and real, which is the unmarked case.
Overt encoding even of certainty implies that the necessity/possibility of the proposition is somehow in question (see further 3.8).

(110) I am sure Bach was 40 in 1725.

(110) would be inappropriate if all the discourse participants were known to consider the proposition in the dependent clause a fact. It is the Uncertainty element which motivates linguistic encoding of the modality (see also 3.8). What is interesting from a linguistic point of view is thus necessity and possibility when there is some degree of Uncertainty.

In other words, whereas modal logic is concerned with truth values, modality as a linguistic category encodes the world as the speaker perceives it or chooses to represent it. It is therefore essentially SUBJective. I propose the following universal definition of modality:

**DEFINITION:**
Modality is a semantic category describing the speaker’s assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

It must be added that modality is a gradable notion. This will become evident in the following sections and in chapter 6 on Modern Greek modality. One can thus meaningfully talk about ‘prototypical modality’ versus modality which is less prototypical because it expresses notions which are not as highly SUBj ective. That modality is, nevertheless, prototypically SUBJ ective follows from the definition. The assessment is that of ego, the speaker, and so it is egocentred.

Furthermore, modality has the force of assessment, which implies that it concerns Uncertain events. Semantically and formally it will be shown to be closely related to other [+SUBJ] notions in both English and Modern Greek. Specific to modality is that it assesses propositions in terms of necessity and possibility (see 3.8 for a discussion of these terms). Sub-categories of modality will be dealt with in 3.5–9.

The relationship between modality and SUBJ ectivity is illustrated in the following figure.
Fig. 38 shows that modality encodes Uncertain and egocentered events. It is therefore a common encoder of SUBJectivity. Modality and SUBJectivity are, however, different notions since the former encodes the latter specifically in terms of an assessment of necessity and possibility. This will be discussed further in the following chapters. Both SUBJectivity and modality are gradable notions; those expressions which do not deviate in any way from the definition of modality will be said to be prototypical. Modal expressions which deviate in that they are not ego-centered or do not denote Uncertainty will be said to be less prototypical.

3.4 Irrealis and modality.

Another candidate for the category modality to be discussed in this chapter is ‘irrealis’. Givón (1984) discusses modality from a crosslinguistic perspective and states that:

Modality (...) encompasses among other things our notions of reality, in the sense of “having factual existence at some real time” (‘true’), “having existence at no real time” (‘false’) or “having potential existence in some yet-to-be time” (‘possible’). (Ibid: 272, my underlining)

What the other things encompassed by modality are is not spelled out.

The most common sentential modalities in human language are said to be:
Presupposition - P is true by prior agreement.
Realis assertion - affirmative: P is strongly asserted as true.
Realis assertion - negative: P is strongly asserted as false.
Irrealis assertion - P is weakly asserted as possibly true.

Table 12 Sentential modalities (according to Givón, 1984:284).

First we shall examine what Givón means by ‘irrealis’.

The author’s attempt to determine ‘irrealis (assertion) modality’ centres on the referentiality of indefinite arguments. Thus (111)–(112) below are realis, because a belief in the truth of the whole sentence implies also a belief in the existence of a unique object – a log.

(111) Joe cut a log.
(112) Joe is cutting a log.

In example (113) on the other hand, a log is ambiguous between a specific log and an unspecified number of the class ‘log’:

(113) Joe will cut a log.

Future is thus said to be clearly irrealis. Habituality is considered to be a borderline case between realis and irrealis. What Givón calls modal or “world creating verbs”, such as look for, imagine etc., which “do not imply the existence of their objects even in the past tense” (ibid:286) also give rise to irrealis modality. The sentence in (114) below is thus analyzed as past and realis but with the non-implicative verb (look for) having irrealis scope.

(114) Jonah looked for a whale.

In other words, in (114) nothing is said about whether the whale existed or not.

The examples are carefully chosen to illustrate the point, but what should one make of sentences such as, for example, (115)?

(115) Joe is writing a book.
Can a book be said to exist from the first scribbled notes on a table napkin? In that case the sentence as a whole would be realis, according to Givón’s analysis. Or does writing here have irrealis scope over a book, just as looking for was said to have?

Givón also lists a number of complex clause types which are said to have obligatory ‘irrealis modality’:

(116) Obligatory ‘irrealis modality’:
   a. Conditional adverbs:
      If Joe catches a whale, then...
   b. Imperative:
      Go catch a whale.
   c. Yes/No questions:
      Did Joe catch a whale?
   d. Complements of non-implicative manipulative verbs:
      Mary told Joe to catch a whale.
   e. Complements of non-implicative modality verbs:
      Joe wanted to catch a whale.
   f. Complements of non-factive cognition verbs:
      Mary thought that Joe caught a whale. (from Givón, 1984:286)

It should now be clear what exactly is meant by irrealis although there are, as was pointed out, marginal cases. Irrealis ‘modality’, as described by Givón, pertains to any proposition which refers to events in the Imagined World. In this sense it is SUBJective. However, the speaker’s attitude is only indirectly encoded by choice of complement type – when such choice is available – and so it is not necessarily ego-centered.

I would claim that the fact that an event is located in the Imagined World, and thus irrealis, does not suffice to make the proposition it is part of an expression of modality. Its irrealis status only indirectly affects how the speaker wants to present the proposition and, consequently, how the decoder perceives its likelihood of being or becoming true. In other words, irrealis status does not constitute ‘an assessment in terms of necessity or possibility’ (see 3.8). This is especially well illustrated by the complement type in (116)f, which in English does not receive any marking of irrealis status. Although the complement proposition is unreal, or at least indeterminate (see 3.9), the complementizer that in f does not
present the proposition as irrealis but as an ‘alternate world’ (see discussion in 6.11).

Most of the clause types in (116) do, admittedly, show similarities of encoding in many languages. They are, for example, strong candidates for subjunctive realization in languages that have such a category (see 6.7.1.). The reason is that they can all be considered [+SUBJ]. Conditionals, subjunctives and modals are all [+SUBJ] encodings. Finally, an attempt to make Givón’s ‘irrealis modality’ fit in under a general definition of modality would result in it becoming excessively vague (cf. end of 3.9). Since SUBJectivity can account for the formal similarities in the clause types exemplified in (116), nothing would be gained by weakening the definition. Irrealis will therefore not be considered a modality in this thesis.

3.5 Types of modality often encoded by verbs.

The clearest subdivision within modality is that between deontic and epistemic modality. They differ in terms of speaker involvement. Deontic modality expresses the speaker’s acting on the world by giving permission, commanding, promising etc. It is typically performative. Epistemic modality is the speaker’s reflecting on the world in terms of the likelihood of propositions.

The inherent SUBJectivity of both modalities is apparent above all in the effect of their scope over ‘complement events’ (in an analysis involving ‘higher’ verbs) or over what would be called ‘more inner layers of the clause’ in Role and Reference grammar (Foley and Van Valin, 1984, chap.5).

(117) He lives on the top floor.

(118) He may live on the top floor. {deontic: is allowed to...}
     {epistemic: is likely to...}

In (117) the proposition is asserted as a fact. The modalised proposition in (118) is not a fact. Depending on the context it can be interpreted as a permission, i.e.
deontic modality, or an expression of epistemic modality. The complement event is in either case located in the Imagined World, i.e. it is [+SUBJ].

Relatively speaking, deontic modality (e.g. permission) is less SUBJective than epistemic modality. The wish to act on the World, expressed by deontic modality, is a wish or concession to change something in the Material World, e.g. from your being here to your not being here, which could be expressed:

(119) You can go now.

The intention is clearly not just to reflect on the possibility of your going but to bring it about in the Material World. Deontic modality is thus less SUBJective than epistemic modality.

In the case of epistemic modal assessments, such as:

(120) It may be too late.

in contrast, the speech act itself expresses notions of Anticipation and Contemplation, i.e. the Imagined World. In other words, the modality expresses the speaker’s reflecting, not acting, on the World. Although all modalities are SUBJective in the sense that they (prototypically) express an assessment by the speaker, the degree varies. Epistemic modality has the most tenuous links with the Material World of all the modalities and is thus the most highly SUBJective.

The compatibility of epistemic modality with the general definition given above (in 3.3) should be clear: the speaker assesses the possibility/necessity of the proposition in terms of likelihood. The relationship of deontic modality to the same definition may seem less obvious and requires that we look at a third type: *dynamic modality*. To facilitate the discussion, the three types are first presented in fig. 4 below. The classifications are adapted from Palmer (1979).
In fig. 39, typical verb realizations of modal meanings in English are given in capitals. The arrows between categories show close interrelationships between modalities.

The main formal criteria (in Palmer, 1979) for grouping modality meanings into types were whether tense was marked on the modal or the complement and whether negation would have scope over the modal, the complement or both. The table below lists types of dynamic modality:

<table>
<thead>
<tr>
<th>Dynamic modal relationships:</th>
</tr>
</thead>
<tbody>
<tr>
<td>x is willing to do...</td>
</tr>
<tr>
<td>x is able to do...</td>
</tr>
<tr>
<td>it is possible for x to do...</td>
</tr>
<tr>
<td>it is advisable/best for x to do...</td>
</tr>
</tbody>
</table>

Table 13 Dynamic modal relationships.

The two first relationships in table 13 represent Palmer's 'subject oriented' dynamic category, whereas the bottom two denote 'neutral' dynamic modality. The
terminology seems to be related to the fact that the subject of the former two is also the actor while the latter two have a dummy subject. The classification which Palmer established on formal grounds will be justified semantically in 3.6.

In Palmer 1986 it is suggested that 'subject oriented modality' (ability, disposition) is the most 'basic' of the modalities and that "it is, in fact doubtful whether this should be included within modality at all" (ibid:11). How it can be both basic and marginal at the same time is not explained. It is, however, true that the disposition/ability type (fig.39) is the modality which is closest in meaning to non-modalized utterances. There is little difference in meaning between examples (121) and (122), below, provided there is no contrastive stress. This goes for both the English and the Modern Greek equivalents.

(121) Τρεξί πιο γρίγορα από μενα.
runIPPVnp3s more fast than me.
He runs faster than me.

(122) Βορί κε τρεξί πιο γρίγορα από μενα.
canIPPVnp3s and... (as above)
He can run faster than me.

In the case of the modal will, as with tha in Modern Greek ((123), below), it is often only knowledge of the context which can clarify whether the modal simply refers to sequence (F"E), and thus is semantically non-modal (see 3.2), or if it expresses disposition (Dynamic, 'subject oriented' modality):

(123) Θα ίνε εδήμ πριν τις δρόμες
FUT be.np3s here before ART twelve
She will be here before twelve.

Dynamic modality is thus the least SUBjective of the three modalities. In using dynamic modal expressions, especially the subject oriented type for willingness or ability (see table 13), the speaker often intends to express objective facts about the Material World and is often also understood to be doing so.

The division into different types of modality is far from neat. 'Neutral' dynamic modality ('possible that', opinion, advice) is more closely related to epistemic modality than the willingness/ability type is. The former kind of dynamic
modality involves a judgement on the part of the speaker which will often be quite subjective.

(124) You ought to take a holiday.

Using the notion of prototypical modality introduced above, I would say that epistemic modality (likelihood) is the most prototypical of the categories in fig. 39. Palmer's 'subject oriented' modality is the least prototypically modal, because what it expresses (willingness/ability) can often be regarded as fact. It is clear that the line between modal and non-modal expressions is fuzzy and that, for example, ability is right on this fuzzy edge (e.g. (121-2)). Thus it is, as Palmer says marginal. Because of its marginal status, dynamic modality is not treated separately from deontic modality in Palmer, 1986.

In saying that it was also 'basic', Palmer was perhaps reacting to the fact that deontic modality is the performative equivalent of dynamic modality. The latter is thus more basic than the former. This claim (that deontic modality is performative) will be elaborated on in 3.6 and 3.8 (see especially discussion of (149)b). Palmer does not draw this conclusion explicitly, but he states that:

(Directives and Commissives are) not only subjective, but also performative, they actually initiate action by others or by the speaker. (ibid: 97)

Fig. 39 showed that, with one exception, both deontic and dynamic modality are encoded by the same verbs in English. Since one modality is the performative of the other there are usually enough clues in the discourse situation to make separate lexical items or markers superfluous. In the one case where the semantic link is not of the performative – non-performative type there is, as can be expected, also lexical diversity. Deontic must is not simply the performative of should/ought. The semantic link which does exist between them consists in both being used for 'mands' (demands, commands etc.) but of different strength; the former more assertive than the latter. It is more likely that a speaker using (non-
epistemic) must, as in (125), below, would be wanting to change the state of the
World by acting on it than if he were using should:

(125) You must wear a cocktail dress.

(126) Your should wear a cocktail dress.

Example (125) is thus more likely to be performative than (126). This meaning
relationship makes it convenient that the modal exponents be different. The verb
should can also denote deontic modality if the context indicates such an
interpretation (see 3.10). In that case it may denote a more courteous command
than must. It is the use and not the lexical item itself which determines its modal
force.

The discourse situation is not always helpful in distinguishing epistemic
modality but there are other differences between it and deontic/dynamic modality,
for example, as regards the interpretation of tense on the modal and the order of
encoding of modalities in the verb group. This will be discussed in 3.11. In English,
a further clue is that the unmarked choice differs, so that can is more common as
an expression of deontic modality than may/might, which in turn is more common
as an exponent of epistemic modality (cf. Collins, 1988). This would support the
claim that the discourse situation can be an important clue to the interpretation of
modal verbs.

To summarize, it has been said that ability and disposition, or ‘subject
oriented’ dynamic modality (see table 13), is the least prototypically modal of the
categories discussed. It is not performative, nor necessarily SUBJective. The
‘neutral’ dynamic, type of modality is more SUBJective. By dealing with opinion,
advice and possibility (‘possible that’) it is semantically closer to epistemic
modality which in turn is the most prototypically modal of the modalities. Only very
rarely does the latter express other than a SUBJective assessment made by the
speaker (but see 3.11, (175)). Deontic modality, finally, arises when exponents of
dynamic modality are used performatively to act on the world. These
interrelationships which were indicated by arrows in fig. 39 are summarized in the simplified figure below.

![Diagram](image)

Fig. 40 The interrelationships of three modalities.

Three parameters of comparison have been mentioned. Modalities can be used to act on the world (deontic mod.) or to reflect on the world (especially epistemic mod.). Their use can be performative (deontic mod.) or not (dynamic and epistemic mod.). Related to the above is the fact that modalities are more or less subjective, roughly in the order epistemic – deontic – dynamic modality, with dynamic ability/disposition right on the border between modal and non-modal meaning. These three types of modality can now be defined.

3.6. A universal definition of modality.

What follows is a universal definition of three types of modality based on the preceding discussion. Evidence for their validity is contained in the remainder of this chapter as well as in chapter 6 on modality in Modern Greek. The general definition is repeated first (from 3.3), for convenience.

**DEFINITION**

**Modality (general)**

Modality is a semantic category describing the speaker's assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

The following definitions are compatible with, but more specific than the general definition.

**ASSESSMENT 1:**

*Dynamic Modality* is 'the speaker's evaluation of the relationship of the actor to the outcome of the event.'

*(cf. Foley and Van Valin, 1984:214)*

Some examples are:

(127) He can *swim* = he is able to/ it is possible for him to *swim*.
(128) He should swim. = The best course of action is for him to swim.

(127) and (128) are examples of dynamic modality when given the readings suggested, but not necessarily in any other reading (see also table 13). The definition that has been adopted is from Foley & Van Valin, 1984 where it corresponds to the category ‘Modality’. The difference is that they consider only epistemic modality (their term ‘Status’) to be concerned with possibility and necessity, thus indirectly giving the latter a more narrow definition than in the present thesis. Here, all types of modal assessments are seen to be made in terms of possibility or necessity giving the terms the broad interpretation common in, for example, modal logic (see further 3.8).

Deontic modality has already been said to be the performative equivalent of dynamic modality. This can be formulated as follows:

**ASSESSMENT 2:**

**Deontic Modality** is ‘I used performatively to ACT on the World.’

For example:

(129) He can swim. = I permit him to swim.

(130) He must swim. = I oblige him to swim.

Again it is important to note that it is in the suggested readings that the examples denote deontic modality. (129) is, in fact, identical to (127). It denotes deontic modality only if it is read as being performative. Dynamic and deontic modality are thus very similar. In Halliday’s analysis (1970) they would both be included under ‘modulation’. In Palmer, 1986, they are mostly treated as one. An example of the close relationship is (129); the statement that the child is able to swim will have the force of permission given a favourable context. The type of modality thus hinges on whether the expression is used performatively or not, rather than on the particular lexical realization.
Epistemic modality was said to deal with the likelihood of events:

**ASSESSMENT 3:**

*Epistemic Modality* is ‘the speaker’s assessment of the likelihood of the proposition.’

The speaker reflects on the World, e.g:

(131)  He may swim. = perhaps/it is possible that he will swim.

(132)  He should/must swim. = It is probable/certain that he will swim.

(131) and (132) denote epistemic modality if they refer to the likelihood of the proposition. If (131), for example, is used performatively to give permission, then it denotes deontic modality without any change in the lexical realization (intonation, stress etc. contribute to a correct reading). The traditional term Epistemic Modality corresponds to ‘Status’ in Foley & Van Valin, 1984, and to ‘modality’ in Halliday, 1970 (although Halliday’s (1985) definition of modality is wider than that proposed here).

The difference between deontic and epistemic modality has been explained by their respective relationships to the Material and the Imagined World. Ego can act on the Material World by giving orders or permissions, making promises etc. (deontic modality). Ego’s conceptual extension into the Imagined World (see 1.1) also makes it possible for him to reflect on the World by speculating, making assumptions etc. This gives rise to epistemic modality and to conditionals of any modality.

**3.7. Modality and evidentiality.**

So far we have only dealt with three types of modality but there seems to be no a priori reason why modality should be delimited to these and no other sub-categories. A notion which is semantically close to epistemic modality is evidentiality. Should it perhaps be considered another sub-class? This question will be discussed below. In a following section (3.9) we will consider whether complementizers also express some kind of modality.
Unfortunately, it is not generally agreed upon what constitutes an evidential expression. The categories most commonly mentioned are those that express sensory perception and Quotatives (cf. Dahl (1985:129)). Foley and Van Valin (1984) classify adverbs such as probably and possibly as evidential on the grounds that they cannot modulate the truth of the proposition. Thus they occur before (or in more ‘outer’ position than), for example, modal adjectives (e.g. possible), which express the reality status of a proposition. In this thesis a view of evidentiality has been adopted more in line with that of Anderson (1986), who distinguishes between actual evidentials and evidential usage.

(133) I hear he left.
(134) I saw that he left.
(135) I saw him leave.

In the first example, tense is not marked on the primary verb, as it would be if hear had its immediate perception meaning. Furthermore, the stress pattern indicates that hear is not the main predication of the clause complex. In Anderson’s analysis I hear is therefore an evidential in this utterance.

In the second example, the time reference of both verbs is the same and is marked on the complement taking verb. Nevertheless, saw does not necessarily mean that the speaker was a witness to the departure, i.e. it is not used to denote immediate perception. According to Anderson, this is an example of ‘evidential usage’. It contrasts with the third example which can only be interpreted as the speaker’s immediate perception of the event. Saw does not express evidentiality here.

It is not clear that stress can be used as a criterion in the last two examples. Evidentials or expressions in evidential usage seem to be always unstressed, but the reverse does not hold.

Palmer (1986) differs in his treatment of modal systems from most other authors in that subjunctives and evidential systems are included in his analysis.
Not all modal systems are organized around the dichotomy Possibility – Necessity according to Palmer, who says that:

there are other languages in which the speaker may indicate the strength of his commitment to what he is saying, not in terms of possibility and necessity but in terms of what kind of evidence he has. \textit{(ibid:20)}

The expression of speaker commitment, mentioned in the quote, is said to be what characterizes epistemic modality and evidentiality is therefore seen as a subclass.

The above could be interpreted as saying that evidentiality does not deal with the necessity or possibility of events. On the other hand, it could simply mean that this dichotomy is less salient in some modal systems. I would disagree with the first claim (see definition below) whereas the second assumption seems plausible. Whatever the relative saliency of the possibility–necessity opposition may be in any particular language (cf. Lee and Herriman (1989) on saliency), I would claim that evidential expressions do to some extent deal with necessity and possibility. The function of stating that one has a particular kind of evidence for something must surely be to establish whether it is certain, probable, possible, likely etc. that the proposition is true.

Anderson (1986), who discusses evidentiality in a number of non–IE languages, shows that there is in fact a close relationship between epistemic assessments and evidential ones (see below, table 1.4). Since neither English nor Modern Greek have evidential systems as such, we shall not devote much more space to the subject, except in so far as it relates to modality. The relationship between evidentiality, modality, mood, aspect and ‘actuality’ are set out by Anderson in a table (ibid:310), from which the two first categories have been extracted in table 14 below.
Evidentiality  
(kind of evidence)  

a/  unmarked: direct knowledge  
knowledge, no inference nec  
b/  inference from particular  
particular kinds of evid.  
c/  inference: evidence  
unspecified.  
d/  logical deduction: no  
evidence (epist. modals)  

Modality  
(Strength of evidence or  
cause)  

a/  unmarked: obvious  
b/  probable: obligation,  
intention.  
c/  possible; 'may, can'  
d/  certain; 'must'  
(cause)  

Table 14  The relationship between evidentiality and modality.  
(adapted from Anderson, 1986:310)

Examples of the b type of evidentiality would be:

(136)  It is going to snow.

(137)  He is going to hit her.

In both instances it is likely to be some sign at the time of reference which leads to  
the above inferences, eg. a particular type of cloud in (136). If there is no such  
evidence, the speaker is more likely to choose may (type c in table 14) than going  
to.

It is not at all clear that English actually differentiates between  
evidentialities of types c and d, although this is the impression gained from  
Anderson’s table.

(138)  There may be snow.

(139)  There must be snow.

There seems to be no linguistic or other context that would show these two or  
similar utterances to express different types of evidentiality, as indicated in the  
table. Although the utterances are clearly different the difference is not one of  
evidentiality.

Regardless of its relative importance in any particular language, if  
evidentiality is a modality it should be definable in a way compatible with the
general definition of modality (repeated below) and yet different from those of the three subcategories: epistemic, dynamic and deontic. The definition of evidentiality below can be compared with the ones in 3.5.

**DEFINITION**

**Modality (general)**

Modality is a semantic category describing the speaker’s assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

**ASSESSMENT 4:**

Evidentiality is ‘the speaker’s evaluation of the relationship of the source of knowledge to the (degree of) determinacy of the proposition.’

The term ‘degree of determinacy’ has been chosen deliberately here since it is a notion which will be discussed in the section on complement modality. It deals with the degree to which there are possible alternatives to a proposition (cf. Ransom, 1986, 3.9) and so is clearly related to the possibility or necessity of the proposition being true. That evidentiality is SUBjective follows from the fact that the assessment involved is that of the speaker. Its characteristics, as formulated above, are compatible with its being a type of modality. An example in English would be:

(140) I hear/it seems that he swam. (* I have the knowledge that he swam from an unspecified secondary source.)*

Since neither English nor Modern Greek have well developed systems of Evidentials the phenomenon will not be specifically referred to below.

### 3.8 Necessity and Possibility.

Modality was defined above as involving ‘an assessment in terms of necessity or possibility in their widest sense’. Different types of necessity and possibility referred to in modal logic were exemplified, but it was said that modalities are linguistically encoded only when there are pragmatic reasons for doing so. In this section I shall define the terms necessity and possibility — it will then also become clear what is meant by ‘in their widest sense’ The discussion will
clarify what the main pragmatic factor is which leads to the overt encoding of modality.

Central to an understanding of necessity and possibility is the fact that we have the cognitive ability, and are predisposed, to compare phenomena around and within us (Langacker, 1987, see discussion in chapter 1). The comparison which concerns us here is that between a non-modalized propositional content and the knowledge/belief system of Ego, the speaker. What is being assessed is, first of all, whether the non-modalized propositional content coincides with the relevant knowledge/belief held by Ego. The coincidence may be 'extreme' in one of two ways. Either there is complete coincidence or no coincidence at all. That is to say, either the propositional content is judged by Ego to be true or else it is judged to be false. Another possible outcome of the comparison is that the non-modalized propositional content coincides partially with Ego's knowledge/belief. In this case the propositional content may be true or may be false, or it may hold sometimes but not always etc.

In order not to have to deal with the whole complex issue of negation (which would require more space than is available) we shall assume that non-modalized propositions already contain or do not contain negation. That is to say, we are assuming that the affirmative or positive value of the non-modalized propositions are determined in operations separate from those described below. Let's take as an example the propositional content of the non-modalized expression:

(141) the game is over

and some modalized versions:

(142) the game must be over
(143) the game can't be over
(144) the game may be over

(141), as it stands, indicates that the speaker considers its propositional content to be true (according to Gricean principles, Grice, 1975). That is to say, the
propositional content and the relevant portions of Ego’s knowledge/belief system coincide. (141) is then *by necessity* true, in the eyes of the speaker. This is not usually overtly marked.

The utterance in (141) can, however, be modalized as (142). For the sake of clarity, we will discuss the reasons for this in two stages. Firstly, let it be assumed that the speaker is addressing the utterance in (142) to her/himself. The utterance would then be based on a comparison of the perceived facts and the speaker’s own (prior) knowledge/beliefs. The proposition would be modalized as in (142) rather than unmodalized as in (141) if *there was a discrepancy* between the two entities being compared, e.g. if the speaker’s prior knowledge/belief was that the game would go on much longer, but visual input showed the crowds moving towards the exits. At the same time as the utterance is made it might become an accepted fact and so the discrepancy ceases to exist. Nevertheless, the utterance in (142) denotes that the proposition has been deduced, i.e. that it was not a fact before the utterance was made. This analysis has assumed that (142) was directed by the speaker to him/herself.

A second possible scenario is that the speaker first carries out the comparison between perceived facts and his/her (prior) knowledge/beliefs and finds that there is no discrepancy. The speaker considers it a fact that the game is over and the visual and other input confirms this perception. If this speaker is interacting with other people he/she might then compare the same propositional content with what he assumes to be the knowledge/beliefs of other discourse participants and might find that they do not completely coincide; the other discourse participants doubt whether ‘the game is over’ or not. This discrepancy in the outcomes of the two cognitive acts of comparison leads the speaker to produce the modalized version in (142). The purpose of modalizing (141) as (142) may be to persuade the others that the propositional content of (141) is true:
"Can't you see that people are leaving? The game must be over." Permutations of the scenarios discussed are, of course, possible.

The same line of argument as above can be applied to the modalized propositions in (143) and (144). The exact choice of modal expression will depend to some extent on how great the discrepancy is between knowledge and new input. There is also interaction with other means of expression, e.g. intonation, but this is too complex an issue to discuss here. Degree of coincidence is translated into degree of likelihood of the proposition: high likelihood (must), medium likelihood (may), low likelihood (can't).

The explanation for the choice to modalize can be found in the interpersonal function of modality (Halliday, 1970). The interpersonal level of language, in Halliday's Systemic Functional framework deals, for example, with the expression of probability and the speaker's attitude to propositions (see also 6.9) rather than with the logical/experiential content of propositions. In line with this, I am claiming, that overt encoding of modality is the result of interaction between discourse participants. To this needs to be added that the speaker may take the role of both speaker and listener – one can deliberate, persuade oneself etc. Furthermore, it should be pointed out that the processes discussed here are much more dynamic than what has been able to be described, since one's knowledge and beliefs are potentially subject to constant change brought about by new input.

A summary of the discussion up to this point will allow us to define the notions of necessity and possibility.
Fig. 4.1 Acts of comparison which may lead to overt encoding of modality.

Fig. 4.1 is a summary of the preceding discussion. The diagram illustrates what happens when Ego compares the input concerning a proposition firstly against his own knowledge/belief and, secondly, the result against the knowledge and beliefs of other discourse participants. The input may be only the simple proposition itself but it can also include visual, tactile and other sources of knowledge relevant to the proposition. The outcome can be formulated in terms of necessity and possibility. The truth value (positive or negative) of a proposition is ‘necessary’ when the outcome of the comparison is ‘extreme’ (1). If the propositional content coincides completely with Ego’s knowledge/belief then the proposition is necessarily true (3). If the propositional content does not coincide at all with Ego’s knowledge/belief, then the proposition is necessarily false (4) (notice that propositions may contain negations). These assessments are based firstly on Ego’s knowledge/beliefs. Since the focus here is on the description of language it need not concern us whether Ego’s perception of the world coincides with any ‘outer’ reality. Secondly it is based on Ego’s assessment of the knowledge and belief of others. Extreme coincidence will normally only be encoded when there is
a discrepancy between Ego's knowledge and beliefs and that of other participants.

Necessity can now be defined:

DEF.: *Necessity* pertains to a proposition a/ when the propositional content coincides completely with the relevant knowledge/belief (positive necessity), or b/ when the propositional content does not coincide at all with the relevant knowledge/belief (negative necessity).

The semantic invariant in this definition is 'extreme coincidence', as shown in fig.41, above. By 'the relevant knowledge/belief' is meant that set against which the proposition is being compared, be it that of Ego or that of other discourse participants.

The act of comparison can also have another outcome (2 in fig.41). It may show that the propositional content coincides only partially with Ego's knowledge/belief. This is what is meant by 'possibility'. In contrast to 'necessity', which is either positive or negative (subjectively true or false), 'possibility' is a gradable notion. The possibility of a proposition being true can be greater or smaller. If the chances that it is true are very slim one may prefer to say that it is possibly false. Possibly true and possibly false thus describe the same scale, either end of which is necessity. Possibility can be defined as follows:

DEF.: *Possibility* pertains to a proposition when the propositional content coincides only partially with the relevant knowledge/belief.

The fact that there is a partial mismatch between the propositional content and the relevant knowledge/beliefs can be expressed in a great variety of ways. The nature of the mismatch of the unmodified proposition can be expressed by words like sometimes, for now etc. I believe it is this fact that has led Halliday (1985) to include such expressions under 'modality'. My analysis, however, is restricted to TMA as encoded by verb systems and so non-verb expressions will not be considered. As far as this analysis is concerned, a discrepancy between proposition and knowledge system is denoted by modal verbs or particles.
It is only if there is *no coincidence or partial coincidence* between the proposition (and other input relevant to it) and at least one of the sets of knowledge/beliefs it is being compared with that modal encoding occurs. The relevant sets of knowledge and beliefs are those of Ego and of other discourse participants. What coincides perfectly with our prior knowledge/beliefs is considered fact, the unmarked case.

Fig. 41 shows that Ego does not only take into consideration his own knowledge/beliefs but also those of his interlocutors. There may again be a discrepancy between their knowledge/beliefs and his own and this may cause overt marking of modality even if it is obvious to the speaker that the proposition is true (see discussion of (142) above). The following discourse constraint can now be formulated:

**MODAL ENCODING CONSTRAINT:**
Modality will only be overtly encoded if Ego considers there to be a discrepancy
a/ between the propositional content (and input immediately relevant to it) and his own knowledge/belief system, or
b/ between the assessment made in a/ and the knowledge/belief systems of other discourse participants.

Notice that this rules out an overtly modal encoding of the ‘necessarily true’ status of, for example (145) below if said by Betsy Smith. Thus (146) is unacceptable, unless something has happened to alter Betsy’s knowledge/belief system, e.g. amnesia.

(145) My name is Betsy.
(146) My name must be Betsy.

The rule also explains why (147) indicates a degree of Uncertainty, despite the fact that it might well be synonymous with (148).

(147) It can’t be raining.
(148) I’m sure it’s not raining.

One only encodes the modality (e.g. can’t) if there is a discrepancy between the non-modalized proposition and relevant knowledge/beliefs. (147) can thus be an
expression of the speaker's own doubt as to whether it is or is not raining — although the assessment is skewed in favour of its not raining — or it can be an expression of the speaker’s perception that other discourse participants are not convinced that its not raining. Other possible scenarios, involving pretence, sarcasm etc. are deviations from this unmarked linguistic behavior. Again one has to assume a speaker who doesn’t lie, who co-operates etc. (Grice, 1975).

A description of actual real world discourse would be far more complex than the one given here. It is only when we strip it down to the bare skeleton, as in fig.41, that the basic workings become clear. A complication which has been avoided for the sake of clarity is the fact that modalities do not express only the notions of necessity and possibility. Other components of modal meanings have been discussed in depth in earlier sections (3.5–6).

Without going in to the differences between types of modality we shall now see how the description of necessity and possibility applies to a range of modalized propositions.

Paraphrases:

(149) He can swim....a. he is able to...
b. I permit him to...

(150) He should swim.... the best course of action is/would be for him to...

(151) He may swim.... it is possible that he will...

(152) He must swim....a. it is certain that he will...
b. I oblige him to...

The paraphrases on the right of the examples are not the only possible ones but they constitute a good sample of modality types. Each paraphrased modality will be discussed in turn (since the paraphrase is more specific than the modal verb). Tense is a separate issue and will be ignored for the moment.

(149)a. he is able to: there is some question whether this use of can should be considered modal any more than, for example, be fond of in he is fond of swimming. (see 3.5 for discussion of this point). Assuming that it is a modal
expression, the coincidence between Ego’s knowledge or the other interlocutors’
knowledge and the non-modalized proposition he swims, or rather he(swim), is
partial. The ability to swim and thus the truth value of he(swim) is in question. The
modal expression (can = be able to) denotes that it is possible that the proposition
is true since the subject has the ability to make it true.

(149)b. I permit him to...: The non-modalized proposition he(swim) is
assessed as being possibly true. Giving permission to do something which is not
possible is nonsense. Part of the act of comparing he(swim) against one’s own
knowledge/beliefs is recognizing whether ‘he’ is able to swim and whether there is
a body of water to swim in etc. These are factors which make he(swim) possibly
true. The previous reading, in (149)a, is thus more basic than this performative
use of can (see 3.5).

(150) the best course of action is for him to...: In this non-hypothetical
reading, there is a discrepancy between the desired world and the world as known
to Ego but it is assumed possible for he(swim) to be true. The coincidence is thus
only partial and the nature of the discrepancy is expressed by should. If the same
sentence, (150), is given a hypothetical reading, i.e. the best course of action
would be for him to... then it is possible for the non-modalized proposition to be
true in the Imagined World. This is marked by would in the paraphrase.

(151) it is possible that he will...: the coincidence between the proposition
he(swim) and Ego’s knowledge on relevant points is partial. The speaker is
uncertain whether the proposition is true but assesses it as possibly true.

(152)a. it is certain that he will...: as discussed above, there are two
different interpretations as to why ‘certainty’ is overtly encoded. One scenario is
complete coincidence between the proposition he(swim) and relevant parts of
Ego’s knowledge but a discrepancy between that and the knowledge/beliefs of
other discourse participants. The speaker may want to impress on the listeners the
logical necessity (see 3.3) of the proposition being true (at a future point). The
other possible scenario for the reading in (152)a is that there is a discrepancy between the propositional content and Ego's own knowledge but that the discrepancy is minor. The speaker expresses that the proposition is highly likely to be true.

(152)b. I oblige him to...: When (152) is used performatively it is interpreted as a command. The relevant reading is that the proposition he(swill) is necessarily true (at a future point). Using a necessity modal performatively is a bit like conjuring. By stating that the proposition is necessarily true one intends to make it true. Given the appropriate power relationships the 'trick' is likely to work.

The discussion in this section has shown that modality deals with the possibility and necessity of propositional contents being true. Truth is assessed by an act of comparison involving relevant parts of Ego's knowledge/belief system on the one hand and the propositional content on the other. Since the function of modality is 'interpersonal' (see above), a comparison with the assumed knowledge/beliefs of other discourse participants may also take place. Modality is encoded if the outcome of the comparison(s) is partial or no coincidence. Partial coincidence is what we call 'possibility', complete coincidence or non-
coincidence is what we call 'necessity'. It must be emphasized that two sets of truth values may be involved: the truth as perceived by Ego and the perception of truth that Ego ascribes to others. Both are essentially subjective.

3.9. Complement modality.

It has been suggested that different types of complements and complementizers express modality. This is the topic of "Complementation: It's Meanings and Forms", by Evelyn Ransom (1986). The question to be answered in this section is whether the 'complement modalities' posited by Ransom are modalities according to the definition set up in 3.5. But first we have to see what Ransom's complement categories are.
The author posits two kinds of complement modality: \textit{Information Modality} and \textit{Evaluation Modality}. Type of Information Modality is determined by whether the complement can be said to talk about what she calls Truth, Future Truth, Occurrences or Actions. The Evaluation Modalities, in contrast, deal with the degree of determinacy of the complement. There are four such degrees in Ransom’s analysis (see table below). The four Information Modalities can combine with the four Evaluation Modalities, giving sixteen possible Modality meanings.

<table>
<thead>
<tr>
<th>EW</th>
<th>IW</th>
<th>Truth</th>
<th>Fut. Truth</th>
<th>Occur.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predet.</td>
<td>regret</td>
<td>foresee</td>
<td>watch</td>
<td>manage</td>
<td></td>
</tr>
<tr>
<td>Det.</td>
<td>say</td>
<td>expect</td>
<td>tend</td>
<td>intend</td>
<td></td>
</tr>
<tr>
<td>Undet.</td>
<td>hope</td>
<td>want</td>
<td>like to</td>
<td>be able</td>
<td></td>
</tr>
<tr>
<td>Indet</td>
<td>wonder</td>
<td>foresee</td>
<td>watch</td>
<td>remember</td>
<td></td>
</tr>
</tbody>
</table>

Table 15 \textit{Examples of higher predicates which typically result in given combinations of Information and Evaluation Modalities (according to Ransom, 1986)}.

The above table shows the different combinations of modalities suggested, and some higher predicates which are said to typically take such complement meanings.

Information Modality type is ascertained, in Ransom (1986) by certain tests. The complement has Truth Modality if one can insert the phrase ‘it is true that’ before the complement. For Future Truth the corresponding phrase is ‘it will become true that’. Occurrence Modality is tested with ‘it occurred that’ and Action Modality with ‘to perform the act of (–ing)’.

Evaluation Modality conveys the degree to which there are possible alternatives to the proposition. There can be no alternatives (Predetermined), few alternatives (Determined), many alternatives (Undetermined) or equal alternatives (Indeterminate, which takes ‘whether’ and ‘if’ complements). For degree of determinacy Ransom uses a test of co-occurrence with evaluative but–clauses. The result is summarized in table 16:
<table>
<thead>
<tr>
<th>Evaluation but-clauses</th>
<th>EM:</th>
<th>PRED</th>
<th>DET</th>
<th>UNDET</th>
</tr>
</thead>
<tbody>
<tr>
<td>but it's not possible that S</td>
<td></td>
<td>²#</td>
<td>?²</td>
<td>?²</td>
</tr>
<tr>
<td>but there's no expectation that S</td>
<td></td>
<td>²#</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>but he may not have</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>but he may have or not</td>
<td></td>
<td>#</td>
<td>#</td>
<td>?²</td>
</tr>
</tbody>
</table>

* the result is a contradiction
? when the higher subject is other than the comp. subject
contradiction may not arise.

Table 16 Co-occurrence of evaluative but-clauses with Evaluation Modalities (according to Ransom, 1986).

In table 16, PRED, DET and UNDET stand for the three higher degrees of determinacy. Indeterminate modality corresponds to ‘indirect questions’ with ‘if’ or ‘whether’. It cannot co-occur at all with any of the but-clauses and does therefore not figure in the table. If the conjunction is changed to ‘and’, certain combinations with ‘and he may have or not’ are marginally acceptable.

Predetermined modality is said not to allow combinations with any evaluative but-clauses. Determined and Undetermined modality allow certain but-clauses but not others.

The claim Ransom makes is not only the familiar one that higher predicates affect the meaning of their complements, for example in terms of truth value. It is also said that:

...complements must be treated as having their own modality meanings, separate from the meanings of their higher predicates, and higher predicates must be treated as having their own meanings and as selecting the kinds of complement modalities compatible with those meanings, just as they select the kinds of subjects and objects they take.

(ibid: 19)

Ransom’s analysis is an attempt to map the effects of higher predicate meaning on complement modality and, conversely, the way higher predicates select compatible complement type. Some predictions are made on this last point, as shown in table 17, but there are quite a few exceptions.
<table>
<thead>
<tr>
<th>EM</th>
<th>IN</th>
<th>TRUTH</th>
<th>FUT.TRUTH</th>
<th>OCCURRENCE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRED</td>
<td>that</td>
<td>that</td>
<td>null/that</td>
<td>for-to</td>
<td>for-to</td>
</tr>
<tr>
<td>DET.</td>
<td>that</td>
<td>that</td>
<td>for-to</td>
<td>for-to</td>
<td>for-to</td>
</tr>
<tr>
<td>UNDET.</td>
<td>that</td>
<td>for-to</td>
<td>for-to</td>
<td>for-to</td>
<td>for-to</td>
</tr>
<tr>
<td>INDET.</td>
<td>whether</td>
<td>whether</td>
<td>whether</td>
<td>whether</td>
<td>-to</td>
</tr>
</tbody>
</table>

Table 17 Predictable complementizer choice (not always obligatory) (ibid: 88)

It is suggested that selectional restrictions as to possible combinations of Modalities can be listed as part of the lexical entry of complementizers (e.g. that), when these are predictable, and that unpredictable complement selections can be accounted for, in the lexicon, as restrictions on the particular higher predicate.

What table 17 immediately shows is that in English complementizer choice is not determined by ‘Evaluation Modality’, except possibly in the case of ‘whether’. So called ‘Information Modality’ does seem to have some bearing on complement type.

Ransom’s account again raises the question of what modality is. The definition formulated in 3.5 is repeated below for convenience:

**DEF:** Modality is a semantic category describing the speaker’s assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

That determinacy implies Necessity or Possibility should be clear. PREDDET. events are ‘Necessary’, DET., UNDET. and INDET. events are ‘Possible’ to a descending degree. But the assessment is not necessarily that of the speaker, so for the above definition to hold for Evaluation Modality one important change would have to be made:

**?DEF (revised):** Modality is a semantic category describing an assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

The revised version of the definition of modality is able to include Evaluation Modality. It would also cover objective epistemic modality where the speaker transmits an assessment made by an objective source, e.g. ‘science’. I suggest
that prototypical modality must be defined as 'the speaker's assessment', i.e. as in the first definition. The second definition describes modalities which are less prototypical but still to be considered modal. This is consistent with the view expressed earlier that modality and SUBJectivity are gradable notions (see 3.3).

Neither definition holds for Information Modality. This could mean either that the definition of modality is not satisfactory or that Information Modality should not be seen as modality. There are several reasons why Truth, Future Truth, Occurrence and Action (Information Modality), exemplified in (153–6) below, is not definable as modality.

(153) PT He acknowledged that they were speaking Cantonese.
(154) PFT He anticipated that they would speak Cantonese.
(155) PO He watched them speak Cantonese.
(156) PA He forced them to speak Cantonese.

The abbreviations in capitals before each example refer to the complement types shown in table 17.

One strong argument against considering Truth and Action to be modalities is the difficulty this would create in finding a definition of modality. The best alternative I have come up with is:

DEF:*Modality is a semantic category describing the relationship of a proposition to the World.

This definition is unsatisfactory in that it would include also other phenomena such as tense and aspect. It will therefore have to be rejected. Based on Ransom's own account, I propose that the number of 'Information' categories can be reduced to a simple binary opposition which one could call Truth and Action. However, a radically different solution will be presented in chapter 6.

One further indication that so called 'Information Modality is not a modality is the lack of correspondence between modal higher predicates as exponents of the different combinations of Information Modality, whereas there is quite a close
relationship between the Evaluation Modalities, defined as number of alternatives, and modal verbs.

<table>
<thead>
<tr>
<th>EM</th>
<th>TRUTH</th>
<th>FUT.TRUTH</th>
<th>OCCURRENCE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREDET</td>
<td>must/have to</td>
<td>will</td>
<td>-</td>
<td>must/will have to</td>
</tr>
<tr>
<td>DET.</td>
<td>should/ought to</td>
<td>should/ought to</td>
<td>-</td>
<td>should/ought to</td>
</tr>
<tr>
<td>UNDET.</td>
<td>may</td>
<td>may</td>
<td>can</td>
<td>may/can</td>
</tr>
<tr>
<td>INDET.</td>
<td>may</td>
<td>may</td>
<td>-</td>
<td>may/can</td>
</tr>
</tbody>
</table>

Table 18 Modal higher predicates associated with the Evaluation and Information Modalities (According to Ransom, 1986).

Table 18 is from Ransom (1986:121). As was pointed out earlier, the three 'top' levels of determinacy correspond to what is necessary, probable and possible. This is reflected in the modal exponents associated with each Evaluation Modality. In conclusion then, it has been found that modality as defined in 3.4 pertains not only to discrete lexical or grammatical items but also to complement propositions. Complement modality deals with the degree of determinacy of the proposition, i.e. the number of alternatives available. This is what Ransom calls Evaluation Modality. The analysis in chapter 6 will show that complement choice expresses the +/- SUBJECTive opposition, in which modality also plays a part.

3.10 The forms of the English modals and their complements.

In order to see how modality fits into and interacts with the tense and aspect system we shall briefly describe some formal characteristics of modal complements and modal verbs in English.

Complements of modals in English are infinitives, usually without the complementizer (so called 'bare infinitive'). That they are non-finite means that they cannot be marked for DISTance. The infinitive is not, however, completely tenseless since the resource of event time is available.
The marking of event time only on the infinitive is an example of relative tense (Comrie, 1985). This means that the point of reference has to be sought in the context. The temporal notion of PRE R sequence is marked by the PFCT form. The infinitive, in contrast to the modal verbs (see below), also has aspectual distinctions. The PFCT aspectual form therefore marks both PFCT aspect and PRE R sequence. This double function of the PFCT is, as we have seen, exceedingly common. The IPFV marks IPFV aspectual characteristics such as progressiveness (2.2), and is used for events AT R or POST R.

The infinitive is semantically [+SUBJ]. This is apparent from the fact that it functions as complement of modal verbs. Such complements are under the scope of the modal, which means that the complement event is SUBJective. It can/may/must explode does not mean that it ever will or did explode since the proposition expressed by the infinitive is assessed (as possible/ necessary) by the modal. It also functions as complement to a number of other non-modal predicates which imply that their complement events are potential events and thus SUBJective (see 6.9.5).

In contrast to the infinitive complement, modal verbs are marked for reference time but not for event time. Related to this is the fact that modals do not have aspectual forms in English.
Fig. 43 The English modal verb CAN in the TMA system.

Fig. 43 shows the modal can in the TMA system. That event time is not marked does not mean that it cannot be expressed, only that there is no systematic way of marking it as opposed to reference time. The form could can have a purely temporal past meaning in relation to S. That is to say, it can have the meaning of ‘PRE S’. This is illustrated below. (The first example is not acceptable in all varieties of English.)

(157) I couldn’t see him yet, but I will as soon as he’s finished talking (on the phone). = I haven’t been able to.....

(158) People could always smoke on the platform. It’s never been any different. = People have always been allowed/ were always allowed to...

(159) Earthquakes could always happen in San Fransisco = It has always been likely/possible that ....

The fact that could in the non-past context of (157)–(159) can be paraphrased by the non-past form of PFCT indicates that the modal too has non-past reference.

The lack of specific marking for event time on modals is explained by the fact that it is the temporal location of the complement event (not of the modality) which is of interest. This event location is marked on the infinitive complement, e.g:

(160) can have written.

(161) could have written.

In (160–1), the reference point indicated on the modal differs but the event time (of the complement) is in both cases PRE R (the reference point).

‘Past’ forms of modals denote [+DIST] meaning. In the case of epistemic modality the DISTance marking is usually non-temporal.
She said he could do it.

**Dynamic modality:**
- *temporal*: he was/had been able to do it.
- *non-temporal*: he would be able to do it.
  he is/will be able to do it. *(tentative)*

**Epistemic modality:**
- *non-temporal*: he was likely to do it.
  he is likely to do it.
  he would be likely to do it.
  he is likely to do it. *(tentative)*

The terms 'temporal', 'non-temporal' and 'tentative' refer to the function of DISTance marking on the modal. Thus, a non-temporal, epistemic reading of *he could do it* would be that it meant *he is likely to do it* (the last paraphrase) but that the speaker is for some reason being tentative, choosing *could* rather than *may*. The term 'likely', which has been used in the paraphrasing of epistemic modality stands for a variety of similar expressions, e.g. *it is possible/probable* that. The paraphrases by no means exhaust the possible readings of (162), but they illustrate that a blend of modal meanings is the normal state of affairs (cf. Halliday, 1970). Contextual factors can make certain readings more probable than others but speakers also deliberately use the multiplicity of interpretations to achieve their aims. Paraphrasing can be used if the context does not favour the particular reading desired.

It is the rule that modal markers denote more than one modality type.

Modern Greek, for example, has two modal verbs, *boro* and *prepi*, and a modal particle, *tha*, each covering all three of the modalities discussed above (see 6.7). A number of factors facilitate their decoding, e.g. frequency of particular uses, as mentioned in 3.5, together with medium and level of formality (Collins, 1988). Decoding is helped by the listeners knowledge of which modalities are likely to be used in particular discourse situations. If a superior tells the employee that he *should* write a report by Wednesday, this will normally be taken as deontic modality, i.e. a command albeit tentative in form, rather than merely the expression of an opinion. The listeners knowledge of the world will also include an
understanding of what temporal relationships are likely to occur in particular situations.

(163) He could have written the letter.
= ?He was able to have written the letter.

This knowledge makes it unlikely that (163) would be interpreted as in the suggested paraphrase although it is syntactically correct.

3.11 The relationship of modality to tense and aspect and order of encoding.

Modalities and tense and aspect have scope over the clause or part of the clause. This is reflected in their order of encoding (Foley & Van Valin, 1984, chap.5). We shall here consider the order of realization of modality, tense and aspect in English verb groups and attempt to explicate it. By verb group is here meant a sequence of at least one non-auxiliary verb plus its auxiliaries and the non-finite verbal complements over which the tense on the first verb has scope. An example of a complex verb group is (164) below.

(164) may have been going to be able to do.

The analysis will show that the order of encoding of TMA categories only imperfectly reflects scope relationships. One reason is that not all categories are realized by separate morphemes in English. In fact, it is the rule rather than the exception than verbal morphemes have more than one function. This can be seen in fig.44 which shows the encoding of TMA in (164).
In fig. 4.4 we see that the form *may* is [-DIST] and [+SUBJ]. This determines that the reference point is non-past (given a temporal reading) in the Imagined World. Such a reading would indeed be compatible with the lexical entry for this modal verb. The type of modality is formally unspecified. Nor is event time indicated either since *may* as a modal cannot be marked for aspect (aspect indicates event time plus event ‘characteristics’, see 1.6).

Modality inside the group is paraphrased and is more often than not of the dynamic/deontic type, as is the case in (164): *be able*. The modal predicate *able* is preceded by *be* on which event time can be marked. In this case *be* is in the PFV aspect, encoding an event (or, more precisely, a state) AT R, so *be* receives 0 (zero) marking.

Slots in the diagram in fig. 4.4 can remain unspecified or ‘empty’. The empty slots are potentially available, so that an expression of deontic modality, for example, could be inserted between the PRE R and the POST R encodings, resulting in *may have been willing to be going to be able to do*. Although the result is probably an impossible utterance, this is not due to any syntactic constraints and the order of encodings is correct. If a context in which such an utterance were meaningful were to arise, then the utterance could occur and would be
acceptable. The order of encoding of TMA categories in English is thus the following:

<table>
<thead>
<tr>
<th>Order of encoding of TMA</th>
<th>Abbreviations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>First:</td>
<td>R = reference time</td>
</tr>
<tr>
<td>E/ASP</td>
<td>E = event time</td>
</tr>
<tr>
<td>MOD (MOD) E/ASP</td>
<td>ASP = aspect</td>
</tr>
<tr>
<td></td>
<td>MOD = modality</td>
</tr>
</tbody>
</table>

Fig. 45 The order of encoding of TMA categories in the English verb group.

Reference time is always encoded on the first verb in the verb group. Event time, i.e. the sequence of events, is encoded by aspektual forms (see 2.5.1) on the first verb unless it is a modal, and recursively throughout the group (cf. Halliday, 1985, Matthiessen, 1984 and 4.1.2 for a discussion of recursiveness). Modality is also recursive, but the type of modality is restricted except on the first verb (see below). In (164), event time and aspect are marked four times, modality twice (see fig. 44). Sequencing, or event time, is one of the functions of aspect but languages differ as to how salient this function is in comparison to its function of describing the character of the event.

The modality on the first verb can be either of the three discussed above: epistemic, dynamic or deontic. Inside the verb group, dynamic/deontic modality is by far the most common and is then, with few exceptions, paraphrased, e.g. 'be allowed to'. It is, however, also possible to use the epistemic modal paraphrase 'be likely' inside a verb group.

(165) They may not be likely to escape, but it cannot be completely ruled out.

As far as modal paraphrases are concerned any of the three types of modality can thus occur inside the verb group but paraphrases of dynamic/deontic modality are more frequent (see further below). The number of modal verbs is usually restricted to one but expressions with two modal verbs in a row do reportedly occur in certain varieties of English.
In Foley & Van Valin (1984), the above example is said to be acceptable in dialects of the southern United States. It is used to illustrate the relative ordering of 'Status' and 'Modality' (epistemic and dynamic/deontic modality). In cases with two modal verbs the first is said to always be interpreted as epistemic, the second as dynamic/deontic.

Epistemic modality relates to the Contemplate and Anticipate modes. It denotes the speaker's reflecting on the World. The tense of the epistemic modal is therefore usually given non-temporal readings. The time reference is to be found in the surrounding context (linguistic or other).

(167) They might have bought it. (Contemplative Mode: 'now...if', or 'last year')
(168) They may be buying it. (Anticipate Mode: 'now' or 'next week')

[+DIST] forms of modals, as in (167), are more frequently given a temporal past reading if the modality is dynamic/deontic. Otherwise they are generally more tentative than [-DIST] forms. In some varieties of English they are taken to denote lower probability than their non-past equivalents. Other interpretations of such forms are that they are courteous or conditional:

(169) I could use Marion's PC...

Paraphrases:
I was able to use...
I would be able to...
It was possible for me to use...
It would be possible for me to use...
It is possible for me to use...but...

The paraphrases in (169) show multiple readings of a [+DIST] modal. Only in some can the DISTance marking be taken as temporal.

The order of encoding of TMA categories illustrated in fig.44, 45 is not completely linear because not all categories are encoded by separate morphemes in English. Despite this, it is largely consistent with the order established in crosslinguistic studies. Foley and Van Valin (1984) suggested the following universal order: Illocutionary Force-Tense-Status-Modality-Aspect. These
categories are seen as 'operators on the clause' with scope over the clause or
part(s) of the clause. The first operator will not be discussed here. Tense
corresponds to DISTance, Status to epistemic modality and Modality to
dynamic/deontic modality (but see comment in 3.5). The operator order
represents the scope of the different categories. Both tense and epistemic
modality are said to have scope over the whole proposition while dynamic/deontic
modality has scope only over the 'core', i.e over the predicate and two arguments
(subject and direct object). The following examples are used to illustrate modal
scope in Foley & Van Valin, 1984:230:

(170) John may write that letter.

paraphrases:
 a/ John has permission to write that letter.
 b/ It is possible that John will write that letter.
 c/ *John is possible to write that letter.

The paraphrase with an epistemic adjective in c is not acceptable because, it is
said, epistemic modality (or Status) deals with the 'reality status' of the whole
proposition and its scope thus extends over the entire clause complex. A dynamic
interpretation imposes no such restrictions and can be paraphrased with a
nominal expression after the actor, as in a.

Another argument put forward as evidence for the different scope relations
is the fact that when two modals are present in the same clause the first must,
according to the authors, have epistemic reading. Two examples are given below.

(171) John may have to leave.

(172) John has to be able to do it.

The authors claim that the first modal can only be interpreted epistemically. I would
argue that the first modal can be given either dynamic/deontic or epistemic
reading depending on the context. I would argue that the epistemic reading on the
first modal can be cancelled by context. (171) has been paraphrased below, and
the paraphrases contextualized where necessary.
John has to be able to do it. (it: walk the tight rope)

a. = I am sure that John is able to walk the tight rope. (epistemic reading)

b. = John is obliged to/It is necessary for John to be able to walk that tight rope by next week or he'll lose his job with the circus. (deontic/dynamic reading)

It would seem that more than one modal of the same category (deontic/dynamic or epistemic) can occur in the same verb group, but that a modal verb or paraphrase following on a dynamic/deontic first modal cannot be interpreted epistemically.

This is, as Foley and Van Valin point out, due to the wider scope of epistemic modality. The possible orders of encoding and interpretation would thus be the first three in the figure:

```
<table>
<thead>
<tr>
<th>Order of modalities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epist. + Epist.</td>
</tr>
</tbody>
</table>
```

* = does not occur

Fig. 46  The order of encoding and interpretation of modalities.

The analysis has shown that there is a strong tendency for modality on the most outer element in the verb group, in English the first auxiliary, to be read as epistemic and for subsequent modal encodings to be deontic/dynamic. That the encoding of epistemic modality on the first auxiliary is not an absolute rule but rather the unmarked case is shown by the epistemic paraphrase be likely inside the verb group (e.g. (165), Epist. + Epist.), and marked readings of initial modals caused by unusual discourse situations, e.g. (172)b above (Deon/Dyn. + Deon/Dyn.). It does, however, seem to be an absolute rule that deontic/dynamic modality cannot precede epistemic modality, thus confirming Foley’s and Van Valin’s claim that epistemic modality is a more outer operator (has wider scope) than deontic/dynamic modality.

The reason would seem to be that epistemic modality is more highly subjective. Like all the modalities it is egocentred in that it (prototypically)
denotes an assessment by the speaker but it is also firmly grounded in the
 Imagined World by the fact that it expresses the speaker’s reflecting on IW rather
 than acting on MW (see 3.4). The point made by Foley and Van Valin (1984, see
 above), that epistemic modality (Status) is about the reality status of the
 proposition is thus an important one.

 It is a tendency of highly SUBJECTive expressions to occur in outer
 positions. In Noonan’s classification of predicate types (Noonan, 1985) epistemic
 modals are ‘propositional attitude predicates’ together with, for example, believe
 and doubt. These also have scope over whole propositions and typically occur at
 the beginning of clause complexes. Further support for the hypothesis that it is the
 strongly SUBJECTive nature of epistemic modality which makes its unmarked
 position more ‘outer‘ than that of dynamic/deontic modality is to be found in
 Lyons, 1977.

 Lyons (1977) claims that subjective and objective modalities have different
 scope. Modality has been defined in this thesis as conveying speaker assessment.
 Prototypically this assessment is egocentred, i.e subjective in the conventional
 sense. Nevertheless, even judgements of probability can sometimes be based on
 objective sources. The examples below could be given both ‘objective’ and
 ‘subjective’ readings.

 (173)  You must apply this week.
 (174)  Birds may be heard...

 Both utterances may be expressing the speaker’s personal opinion. On
 another reading, however, (173) could be based on printed information on
 application procedures and (174) on scientific knowledge of the probabilities of
 the predicated event. They could then be said to be objective. An example of
 objective epistemic modality, from Lyons, is may in (175):

 (175)  Perhaps it may be hepatitis.
     subj. subj
     or obj.
Only the inner modal expression can be interpreted as being objective since subjective modality, according to both authors, has wider scope. Using Foley’s and Van Valin’s terms one would say that subjective modality is a ‘more outer operator’.

Reality status is also dealt with in conditionals. As would be expected, in English the marking of reality status by the complementizer if, and in the main clause by the modal, is done before other TMA markings. In chapter 1 it was shown that not only [+SUBJ] encoding but also the marking of [+DIST] indicates that the event does not completely coincide with the only ‘absolute’ reality, namely Ego’s here and now. This is why reference time, i.e. DISTance and epistemic modality which is the most SUBJECTive of the modalities, are encoded before event time and deontic/dynamic modality.

3.12 Summary of SUBJECTivity and modality.

Linguists with very different approaches to language (such as Lyons (1977, 1982), Ultan (1978), Palmer (1986), Halliday (1970) and Bull (1963)) have found a systematic division of the verb system, or parts of it, which matches the [+/- SUBJ] division of the TMA system suggested in this thesis. Based on their analyses, which have been discussed here, one can arrive at the following summary of features that typically co-occur on plus and minus SUBJECTive forms.

| Concept load | Tense marking | Dependency | Rel. to $|$ | Reality status | Functional level$^*$ |
|--------------|---------------|------------|-------------|-----------------|---------------------|
| [-SUBJ]      | finite        | indep. clauses | exper. recall | factive resis | exper.al/ logical |
| [+SUBJ]      | non-finite    | dep. clauses | anticip. contempl. | non-fact irrealis | interpersonal |

$^*$ Halliday’s terms, e.g. Halliday, 1985.

Table 19 Some features which typically co-occur on plus and minus [SUBJ] verb forms.
The features in table 19 have a strong tendency to coincide (horizontally) although this is in no way an absolute. Furthermore, the binary divisions (e.g. finite/ non-finite) are used for convenience and clarity. In reality, perhaps all the feature pairs could be more accurately described as scales from more to less, or from one absolute extreme to another. Thirdly, what is encoded as [-SUBJ] in one language could be [+SUBJ] in another, and vice versa. One example is the protasis of conditionals which only in some languages will contain a marker of [+SUBJ] modality. Crosslinguistically, however, there seem to be major areas of overlap of semantically subjective constructions receiving [+SUBJ] encoding.

Modality is a SUBJective notion. We have distinguished between prototypical modality, which is narrowly defined, and less prototypical modality, including objective modality and complement modality as described by Ransom (1986). Modalities deal with the reality status of propositions in terms of possibility and necessity. The assessment is prototypically that of the speaker and the event is located in the IW, and thus Uncertain. This is what makes modalities SUBJective.

The analysis has tried to determine what some essential features of modality are. Despite a fairly flexible definition, irrealis was found to be a separate category from modality. Saying that irrealis is a modality is, by implication, to define modality as a category that deals with events in the Imagined World, and no more. Exponents of modality might then include non-temporal uses of tense, interrogative mood, non-factive that-complements, plus realizations which are more conventionally known as modal. I have suggested that this is so wide as to obscure important notions around which TMA systems are organized. Furthermore, a number of factors interact with irrealis status to determine whether it will in fact be encoded as such. This will be discussed in the sections on complementation in chapter 6. It is thus convenient to separate the irrealis notion from other notions such as egocentredness, possibility/necessity etc., with which
it might interact. Finally, it should be said that the coverage of terms may be influenced by the particular language to be described. If the language in question seems to be organized around reality status, with no particular distinction between irrealis and modality, then one might want to extend the term modality (or irrealis) to cover anything that is not realis. There seems to be no justification for doing so in the present analysis.

In chapter 6 it will be further demonstrated that the Organizing Principle Subjectivity functions over and above other notions such as ‘factivity’, ‘irrealis’ and, indeed, ‘modality’. 
II. TMA IN MODERN GREEK AND ENGLISH.
Chapter 4: Tense in English and Modern Greek.

This chapter will compare tense in English and Modern Greek within the framework presented in chapter 1. The emphasis will be on describing and exemplifying phenomena which have been dealt with on a more abstract level in previous chapters. It will be seen that the same oppositions are found and the same concepts and interrelationships expressed in both languages. Their tense systems are essentially identical. What differs is the constraints on how the system is used. In 4.1 we will discuss tense in the verb group. The discussion will focus on recursiveness and on the scope of tense. Some overlap with 3.11 is inevitable at this point in order to make the arguments clear. Section 4.2 deals with the use of tense in connected discourse and, more specifically, with tense agreement and shifts from one time axis to another. Constraints on shifting will be formulated and discussed.

4.1 Tense in the verb group.

4.1.1 Reference time and event time.

Any linear sequence of verbs (uninterrupted or not) where the reference time on the first verb has scope over the whole predication, and thus on all the subsequent verbs, will be called a verb group (see also 3.11). Examples of verb groups are:

\[(176) \quad \begin{array}{l}
a/ \, \text{take} \\
b/ \, \text{tried to take} \\
c/ \, \text{try to persuade} \,(x) \, \text{to take} \\
d/ \, \text{believe} \,(x) \, \text{to have been doing} \\
\end{array}\]

But not:

\[(e/ \, \text{believe} \,(x) \, \text{was doing} \]}

In each of the strings a–d the events are situated relative to the point of reference set by the tense on the first verb. The reference time has scope over the whole
group. It can be [+DIST], as in b or [−DIST] (a, c, d). The location of the complement events relative to S are determined by this marking of DISTance on the first verb. The meaning of the DISTance marking can be temporal or non-temporal. In example e the first verb and the complement verb are tensed independently of each other and thus form two separate verb groups.

Non-temporal uses or interpretations of DISTance will be referred to by the term ‘metaphorical’. A metaphor is, according to COD (1976):

(an) application of name or descriptive term or phrase to an object or action to which it is not literally applicable.

Uses of tense to denote temporal location and temporal interpretations of tense will here be taken to be, if not ‘literal’, at least more prototypical than other uses and interpretations. Non-temporal uses/interpretations of DISTance marking will therefore be said to be metaphorical.

Verb groups in both English and Modern Greek may include one finite governing verb plus, optionally, one or more non-finite verb. It has been shown that finite predicates are those that are marked for reference time and which locate a predication relative to S. So called ‘non-finite’ predicates are, by definition, not marked for reference time but they may encode event time. In other words, the form of a non-finite predicate may encode whether the event over which it has scope is PRE, AT or POST in relation to the point of reference. We shall examine English infinitives first, as an example of non-finite forms which encode event time. Subsequently, the Modern Greek na-clause will be described in its finite and non-finite forms.

Infinitive predicates may denote location of an event relative to a point of reference set by a governing predicate to which it acts as a complement.

(177) Eng. I want to leave.
(178) Eng. I want to have left.
(179) Eng. I wanted to have left.
Like many predicates that take non-finite complements, **want** has future scope over its complement (at least in its most common reading). That is to say, the complement event is located **POST** the point of reference set by **want**. This point of reference can be called $R_1$. In (177) and (178) $R_1$ is $-DIST$. In (179) it is $+DIST$. The future location implied by the semantic content of **want** can be called $R_2$. The complement event in (177) is **AT** $R_2$ while in (178) and (179) it is **PRE** $R_2$.

Diagramatically, the tense relationships in (177–79) look as follows:

\[
\begin{align*}
\text{(177) } R_1 &= (ES) & \text{(178) } R_1 &= (ES) & \text{(179) } R_1 &= (E'S) \\
\text{want} & & \text{want} & & \text{wanted} \\
R_2 &= R_1' E & R_2 &= R_1' E & R_2 &= R_1' E \\
R_2 &= ES_2 & R_2 &= E'S_2 & R_2 &= E'S_2 \\
to leave & & to have left & & to have left
\end{align*}
\]

In the above figures, the first reference point represents reference time and the second reference point is created by the future scope of **want**. The third reference point, finally, is the event time relative to the semantically future event location implied by the governing verb.

**Event time is relative tense**; it denotes location in relation to a reference point which is not necessarily S. Event time can therefore be encoded by one single paradigm. Non-finite predicates denote event time only. Fig. 47 shows event time encoded by the English infinitive (see also fig. 41 plus discussion).

![Fig. 47](image_url) **The English Infinitive.**

It can be seen in fig. 47 that infinitive forms are related to only one point of reference (*). The choice of forms is more limited in this paradigm than in, for
example, the finite [-DIST][-SUBJ] paradigm (where R=S). Infinitive PRE R events are encoded by the PFCT only, i.e. there is no ‘PFV past infinitive’. Furthermore, there is no PFV form for POST R events (e.g. *to will take), which can instead be encoded by the IPFV (i.e. to be taking). It is also often the case that PRE or POST location can be understood by the context or is implied by the higher verb (e.g. (177)) in which case the PFV can be used. The PFV is thus the unmarked, default form. A comparison with fig. 26 in chapter 2, which shows aspectual encodings of event time, makes the connection between aspect and event time obvious: event time is encoded in English non–finite clauses by infinitive aspectual forms and in finite clauses by equivalent finite aspectual forms but the choice of forms is more restricted in the infinitive paradigm than in the finite ‘present’ paradigm.

The equivalent of the English infinitive in Modern Greek is the na–clause (or na–complement). na–clauses can, however, also be finite and will sometimes function as independent main clauses (so called ‘main clause subjunctives’). Such cases will be treated in depth in 6.12. Below is a figure of the two na–clause paradigms with the verb grafo (I write).

![Diagram of na-clause paradigms]

Fig. 48 The Modern Greek na-clause.

Na–clauses can be [+DIST] or [-DIST], as shown in fig. 48. Finite clauses make use of the whole range of forms from both paradigms. Non–finite na–clauses are unmarked for DISTance and are encoded by the forms in the [-DIST] paradigm only. Furthermore, a PRE R event in a non–finite clause can only be PFCT (na eho
grapsi, 'to have written'), as is the case also with English infinitives. In a finite clause, in contrast, PRE R (if R=S) events can be expressed by either PFV (e.grapsa, 'wrote') or PFCT (eho grapsi, 'have written'). This situation is parallel to that of finite English clauses. A difference between Modern Greek and English is the absence in the former of PFCT–IPFV forms such as have been writing.

Whether the na-clause is finite or not depends first of all on the governing verb, when there is one. Predicates that require that its complement have independent time reference take a finite na-complement, often translatable by an English that-clause:

\[(180) \text{Ohen pistevo na ihes mini piso.} \text{ } \quad \text{NEG believeIPFVnpis NA stayPFCTp2s behind.} \]
\[\text{I don't imagine that you (had) stayed behind.} \]

Finite na-clauses encode the point of reference for the event in the complement clause. In the example, ihes mini (PFCTp) is a [+D/ST] form. The governing verb, pistevo, in contrast, is [−DIST]. Governing verb and complement are, in other words, independently tensed.

Non-finite na-clauses, in contrast, are unmarked for reference time and thus make use of only [−DIST] forms:

\[(181) \text{Eprepe na teliosi prin tis efta.} \text{ } \quad \text{MOSTP3s NA finishPPVnp3s before DEF seven.} \]
\[\text{She should have finished before seven. (deontic/dynamic modality)} \]

Reference time is here marked only on the governing modal verb. The whole sentence in (181) is [+DIST] by the tense marking on the modal prepi ([+DIST] form: eprepe). It can be interpreted as either temporally past or unreal. Its deontic/dynamic meaning may express an opinion regarding the subject’s moral obligation, as in the above example. Deontic/dynamic modals take non-finite complements. The event finish is therefore encoded by a non-past form although it is located in the past.

The distinction that has been made between finite and non-finite na-clauses and between governing predicates which select one or the other type of
complement is not relevant in conditional or otherwise hypothetical contexts. All na-complements are finite in such contexts. (See discussion in 6.6.) Complements, including infinitives and na-clauses, will be discussed in depth in chapter 6.

4.1.2 Recursive tense.

It was shown in 3.7 that event time is recursive in English. This has the effect that verb groups can be a lot more complex than the examples above and sometimes require a context to be easily processable. Although rare in written English, sentences such as (182) do occur in spontaneous, colloquial speech.

(182) I understand them to have been going to be living here.

The mechanics of recursiveness will be shown in detail below, using (182) as the example.

The whole complex group is within the scope of the reference time marked on the first predicate. R is [-DIST], i.e. the speaker's now. This is the point from where the main event live is regarded. The predicate understand is not marked for PRE or POST event time so the event it refers to must be AT R. The gloss below shows tense and aspect on the governing verb of (182).

(182) a/ I understand

TNS [R, [-DIST]]

ET [ER₁]

ASP [PFV]

Abbreviations:

ASP = aspect
DIST = ref. time
E = event
ET = event time
R = point of ref.
TNS = tense

The morphological encoding of both tense and aspect is in this case 0 (zero); [-DIST] is the unmarked point of reference and PFV is the default choice of aspect. The point of reference set by the tense on the first verb, called R₁ in (182) a, has two functions. First, it is the point of reference for the specific event understand. Secondly, it situates the whole predication (182) in time. In (182) a
the event expressed by the comment predicate is AT its point of reference, but it
could also have been PRE R (have understood).

In terms of grammaticization, the number of reference points is limited to
four (including the modal ones to be discussed in chapter 6). In notional terms,
however, there is no such limit (1.4.1). Each auxiliary in a group sets a new point
of reference for the following verb. In order to show how this works, only the
complement part of (182) will be considered below. The one-predicate
complement they live will be built up from the simplest tense and aspect marking to
the full complement of (182). The same abbreviations will be used as in (182) a.

R₁ is the point of reference set by understand.

(182) b/. . . them to live here. TNS: [E'R₁]

ASG: [PFV]

 c/. . . them to have lived here. TNS: [E'R₁]

ASG: [PFCT]

d/. . . them to be living here. TNS: [ER₁]

ASG: [IPFV]

e/. . . them to have been living here. TNS: [E'R₁, ER₂]

ASG: [PFCT, IPFV]

f/. . . them to have been going to be living here. TNS: [E'R₁, ER₂, ER₃]

ASG: [PFV, IPFV, IPPV]

The tense relationships of the whole of sentence (182) is represented in fig.49:

'I understand them to have been going to be living here'

```
  LIVE
    +-----+  *
    |     | [-DIST]
    |     | R₁: understand
    +-----+  |-------------------|
       |   | B₂: have -en
       |   |  |--------------------------------->
       |   | B₃: be going to be -ing
       |   |  |-------------------|
       |   | B₃: be -ing
```

Fig.49 Tense relationships in a complex verb group.
The point of reference for the whole sentence is $S$, set by the $[-\text{DIST}]$ form understand. The figure illustrates the statement that at the present time ($R_1$) the speaker understands that in the past ($R_2$) 'they' had intentions or plans to realize the event live in the future relative to $R_2$, in such a way that the event would be continuous at that future time, i.e. continuous AT $R_3$. In the absence of indications to the contrary, the time of the realization of the event live is taken to be the original reference point, the speaker’s now, but the diagram is overly specific on this point. Each new reference point is located relative to the previous reference point only (see 1.4.1). The final location is potentially also a reference point ($R_4$) for yet another event and so on, but this possibility has not been utilized.

The analysis of (182) demonstrates the recursiveness of event time. Modality is also recursive, so that verb groups can become even more complex with the inclusion of expressions such as 'be able to' (see 3.11). The limits on the recursiveness are not absolute. Speakers differ in what complexity of verb group they will accept. It might be a question of processability. Very long and complex verb groups are not uncommon in spoken conversational English, where the context, shared knowledge etc. facilitate decoding (cf. Halliday, 1985:179).

A close look at the tense glosses of the previous examples shows the close relationship between aspect and event time. However, it was said in 1.6 and 2.7.1 that aspect encodes event time, but that there are good reasons not to treat them as one and the same thing. Halliday (1985) and Matthiessen (1984) seem to be of a different opinion. They describe the PFCT and IPFV in English as 'secondary tense'. Halliday states:

Thus tense in English is a recursive system. The primary tense...is the Deictic tense: past, present or future relative to the speech event....secondary tenses; they express past, present or future relative to the time selected in the previous tense. (ibid: 177)

In the quote Halliday points out the recursiveness of tense which was exemplified in (182). A distinction is made implicitly between reference time and event time by
the separation of deictic tense from (presumably) non-deictic tense. No mention is made of aspect, which is effectively reduced to ‘secondary tense’ in both Halliday (1985) and Matthiessen (1984). I would claim that this is not an accurate description of either the TA system as a resource (or ‘potential’) or of the choices speakers actually make. In the example analyzed above, to have been going to be living, event time is encoded by have –en and be going to while the reason for the IPFV on the main verb (be living) is that it denotes the character of the event; the event time AT R could just as well have been denoted by the PFV live. Reducing aspect to event time (or ‘secondary tense’) fails to explain the choice of aspect in cases like these.

4.1.3 Complexity of encodings in the Modern Greek verb group.

Modern Greek tense marking functions in the same way as in English, with a couple of exceptions. Tense and aspect are recursive, as in English, but no PFCT–IPFV form (e.g. have been doing) exists to encode events as both E–R and ER. English also has the going to form which allows E–R, R–E strings, or even E–R, R–E, ER, as in (182). There is no possibility of encoding such relationships directly in the verb group in Modern Greek. This restricts the length of verb groups. Furthermore, where English might use a PFCT form, Modern Greek will often prefer a PFV even when the former would be acceptable. On the basis of fairly extensive analyses of text (but without having carried out a quantitative study), I venture to claim that verb groups with highly complex tense relationships are less common in Modern Greek than in English and that this type of complexity is in fact avoided by Modern Greek speakers.

(183) I would have liked to have been able to come.
Tha lìhefa ďe polì ña erhowoun.
THA wantIPFVpIs very much NA comeIPFVpIs
(I would very much have wanted/want to come/to have come.)
(184) I have been going to tell him about it.
Tha tou to elega.
THA OBJ OBJ sayIPFV
(I would have told him/ would tell him/ was going to tell him)

The spontaneous translations of the English sentences (183–4) given me by Modern Greek informants were the ones shown immediately under the English originals. More literal equivalents of the translations are shown in parentheses underneath the gloss. In both examples, the tense marking is less complex in the Modern Greek version than in the English original. A literal Modern Greek translation of (183) with two complements, as in the original, is not acceptable despite the fact that na borousa ('(for me) to have been able to') does exist as a form. What does not exist in Modern Greek is a 'conditional' PFCTp form of thelo equivalent to would have liked. Other verbs do have such forms, e.g. tha iha feri (I would have brought) but they are only ever used if the event time is not clear from context (see 5.4.2). Neither thelo (want) nor the final predicate erhome (come) are marked for PRE R event time in (183). The Modern Greek version thus differs from the English in the omission of the modal predicate (be able) and the non-marking of anteriority.

The tense marking in (184) is also considerably less complex in the Modern Greek translation. The IPFV form (elega) denotes an unreal event and the particle tha (used for POST R event time and various modal notions, see 6.2) adds tentativity. The point of reference is metaphorically [+DIST], encoding the unreal status of the event leo (say). The temporal location of the event is not encoded and has to be inferred from context. PRE R event time could have been indicated by the PFCTp iha pi (had told) but would have been only marginally acceptable in this example.

In both (183) and (184), English PFCT forms contribute to the counterfactual status of the predication. The same effect is achieved in the Modern Greek by the use of IPFVp, sometimes referred to as 'optative'. The future
(or otherwise modal) particle tha in the Modern Greek version of (184) expresses both the tentativity of English would and the POST R (future) meaning of 'going to'.

These examples are typical of the respective languages. English relies heavily on tense marking, and especially on the marking of event time. The fact that event time is encoded by aspect may contribute to the relatively low saliency in this language of the purely aspectual function – that of describing the character of the event. In Modern Greek, event time is more often left to be inferred from context but aspect is prominent. In the English examples above, counterfactual status is implied by the PRE R event time encoded by PFCT whereas Modern Greek prefers to encode counterfactuality by IPFV aspect, without reference to event time. On balance, the encoding of aspectual distinctions is more important in Modern Greek than tense and the reverse seems to be true of English. (See further in 4.2.)

Complex Modern Greek verb groups may contain strings of na- complements which are dependent for their time reference on a governing verb:

\[(185)\] Itheta na se parakaleso na tous dhosis tin
\[
\begin{array}{llllllll}
\text{wantIPFVplS} & \text{NA OBJ} & \text{entreatIPFVplS} & \text{NA OBJ} & \text{givePFVnp3p DEF}
\end{array}
\]
\[
\begin{array}{llllllll}
R: & \{+DIST\} & \text{R}^1_E, & \text{R}^2_E,
\end{array}
\]

\[
\begin{array}{llllllll}
efkeria na dhiorthosoun ta pragmata. \\
\text{opportunity MA correctPFVnp3p DEF things}
\end{array}
\]

I wanted to ask you to give them a chance to fix things up.

(185) contains three na- complements which all depend on the governing predicate thelo (want) for their time reference; the whole predication is \{+DIST\}. The context will make it clear whether DISTance here is metaphorical (see 4.1.1), e.g. used for politeness, or if it denotes past temporal location. The three first predicates have future scope, which makes the event time for the following predicates \(R^*E\).

Na- clauses also function as the complements of modal verbs. As in English, the same verbs are used for both epistemic and deontic/dynamic
meanings and so there are often more than one modal reading of the same utterance. In some cases, however, the tense marking on the complement makes only one reading possible. *na*-clauses are non–finite if the governing modal has deontic/dynamic meaning, e.g. if it expresses obligation or permission (see 4.1.1). The time reference of the complement is then dependent on the tense on the modal. Epistemic modals, in contrast, i.e. modals expressing likelihood, take *na*-complements which can be [+DIST] or [−DIST] independently of the tense on the modal.

(186)  
\begin{verbatim}
Prepi na erthi.
MUSTnlp NA comePFVnp3s
She must come. (epistemic or deontic)
\end{verbatim}

(187)  
\begin{verbatim}
Prepi na irthe.
MUSTnlp NA comePFVnp3s
She must have come. (epistemic)
\end{verbatim}

(188)  
\begin{verbatim}
Prepi na ehi erthi.
MUSTnlp NA have comePFCTnp3s
She must have come. (deontic or epistemic)
\end{verbatim}

*Prepi* is the modal verb denoting necessity in Modern Greek. It exists only in two forms, one [−DIST] (*prepi*) the other [+DIST] (*eprepe*). Both are third person singular. When the complement event is non–past, as in (186, 188), it is the context which determines what the modal value of *prepi* is. (187), in contrast, has only epistemic reading. This is caused by the tense marking. As shown in fig.48 (4.1, above), PRE R events in non–finite *na*-clause are encoded only by the PFCTnp whereas in a finite *na*-clause there is a choice between PFVp and PFCTnp. This means that a modal followed by a PFVp, e.g. *irthe* in (187), can only be given an epistemic reading. Conversely, if the modal is deontic/dynamic PRE R event location can only be encoded by PFCTnp, as in (188).

The implication of the differences in the tensing of complements of epistemic and deontic/dynamic modals is that the tense of an epistemic modal does not have scope over its complement whereas tense on deontic/dynamic modals does extend over the complement. Complements of epistemic modals are
independently tensed and behave in this respect as independent main clauses, setting their own points of reference while complements of deontic/dynamic modals are dependent for their reference point on the modal verb and only indicate event time in relation to the tense on the governing modal (Veloudis, 1985).

In keeping with the terminology introduced in 3.11 and repeated at the beginning of the chapter we would say that an epistemic modal and its complement make up two verb groups, each with its independent marking for DISTance. A dynamic/deontic modal and its complement are more closely associated, forming one group with DISTance marked only once. In actual fact, the forms and the semantics of modal expressions often blend (cf. Halliday, 1970) so that the two types are not always distinguishable.

4.1.4 Summary of tense in the verb group.

In this section we have looked at the encoding of DISTance (reference time) and sequence (event time). DISTance is encoded on the first verb in a verb group and has scope over the whole predication. Event time is encoded by aspectual forms on each verb in the group. It has scope only over the event. In complex expressions there may therefore be more than one notional reference point (R). Aspect is able to encode event time because both have the same scope (1.6). Despite this similarity aspect has to be treated as a separate category since event time does not automatically select aspect and because aspect denotes characteristics not inherent in the event time. Both aspect and event time are recursive.

The discussion of recursiveness has dealt mainly with English since this language makes more extensive use of highly complex verb groups. The existence of PFCT-IPFV forms and of the going to encoding of FUTURE events increase the potential of English verb groups to express event time recursively. In the section
that follows it will be seen that, in contrast, reference time is a more flexible resource in Modern Greek than in English.

4.2 Tense shifting in connected discourse.

4.2.1 What is shifting?

In the analysis of recursiveness and scope the focus has been largely on non–finite clauses and event time. In this section we shall look more closely at reference time (DISTance) and the uses to which it is put in connected discourse. The relevant system is thus the finite tense system, presented below without regard to aspectual distinctions and with Modern Greek realizations.

![Diagram of tense system]

Morphology:
- PFV stem: graps-
- IPFV stem: graf-
- PFCT Aux: eh-/ih-
- Partic.: PFV + -i

Future: tha
Present, 1st sing.: -o
Past, 1st sing.: -a

Fig. 50  The Modern Greek tense system (without regard to aspect).

In fig. 50, tense is marked by the past suffix -á, the non-past -o, on the first verb in the group, and for the future also the particle tha. All forms are 1st person singular. The example verb is grafo (write). For ease of reference the English tense system is presented in fig. 51.
I shall use the term *shifting* to mean the changing of time axis of a section of discourse. The time axis can be [+DIST] or [-DIST].

This type of tense system (fig. 50, 51) facilitates tense shifting; the speaker can travel in time, so to speak (I am indebted to Jean Harkins for this notion), by moving between points of reference, marked * in the figure, each point giving access to another paradigm. Notice, however, that shifting, as the term is used here, refers to a ‘horizontal’ shift in the above figures. Shifts from [-SUBJ] to [+SUBJ] or the reverse, in contrast, do not concern us here (see chapter 6).

The above type of tense system differs from systems such as that of Warlpiri (Central Australia) which are not organized around grammaticalized reference points. To take an example, a future event in Warlpiri is encoded by the future particle plus non-past, whether the point of reference is (notionally) past or non-past. The context of the following example is that someone is telling a story about a big dingo running towards the people.

(189)  *wanti-ja, wati jintja; kapu yalki-rni.*  
fall-past man one FUT eat-nonpast  
One man fell; it (the dingo) will eat him.  
(Bavin, 1989)

The translation is literal, as in the original source (Bavin, 1989). The Warlpiri sentence uses a past tense verb in the first clause but future plus non-past on the anticipated event in the following clause. An English version would be more likely to
use the going to future, probably in the past since the reference time is past: ...the dingo was going to eat him. In Modern Greek also, the encodings of FUTure differ depending on the reference point, as can be seen in fig.50: [+DIST] tha egrafe, [-DIST] tha grapso, in the non-modal paradigm, where -a is past, -o non-past.

Discourse can move from a [-DIST] reference point to a [+DIST] reference point, or the reverse. In other words, it can move from one time axis to another. Changing time axis thus means moving between paradigms (see fig.50, 51). This resource is potentially the same in English and Modern Greek but, it will be argued below, the actual usage differs. It is illustrated by the following English examples:

(190) They're still negotiating. They started at 7 this morning and they're still at it.

(191) They're still negotiating. They started at 7 this morning. The press was here but nobody wanted to answer any questions.

There is no change of reference time in the first example, (190). Both clauses have S as their reference point. The past form started encodes an event PRE S, i.e. [-DIST]. It is potentially a past point of reference for a following event, but this option is not used. The discourse remains grounded in the present. (191), in contrast, illustrates a shift from [-DIST] to [+DIST]. The temporal location of started has been taken as reference point for a following event, making the latter unambiguously [+DIST].

Such changes in location can be temporal, as in (191), or metaphorical (see 4.2.3) and are used for a variety of purposes. An example of a metaphorical use is when direct speech with [-DIST] reference is reported in the equivalent [+DIST] form for reasons other than temporal location. Below is an example from English. We shall assume that the person being referred to in the report is not moving house. The change in point of reference is thus metaphorical.

(192) a/ 'I've been living here for twenty years.'
b/ He told me just now that he'd been living here for 20 years.

The changing of time axis will (as stated above) be called shifting. The term has often been used in English grammars, but usually to refer to such changes only
when they have non-temporal rather than temporal meaning. Since changes of
time axis have the same formal consequences (i.e. follow the same rules)
regardless of why they take place and, in addition, since temporal and non-
temporal shifts cannot always be separated, I shall refer to all changes of time axis
as shifts. The direction of the shift in (192) is from [-DIST] in the direct speech to
[+DIST] in the report. This will be called backshifting. The general purpose of
backshifting, in (192), is for the speaker to distance herself from the content of
the reported utterance. She may not believe in its truth value, or pragmatic factors
may require that she convey it as an impartial observer. English language
newspapers use backshifting of indirect speech extensively for the latter reason.

Backshifting is thus common in English, especially in newspaper reports.
In Modern Greek it is, comparatively speaking, rarely used; when events in
reported speech are backshifted they are usually either unreal events or events
seen in a historical perspective, i.e. as having occurred in a past time frame. This
is illustrated by the following two examples.

(193) Ο ίγκητις τίς Ισλαμικής Επανάστασις στο Ιράν, Αγαθολάχ
DEF leader of Islamic Revolution in DEF (name)

Hομέινι, άρα ήταν από τις Τεχέραν...ποτίρι μου
(name) describePFPVps DEF decision of (name) 'glass with

d'ilidiirio' pou epere na to pil ja na
poison which mustPFPVps NA OBJ drinkPFPVps NA PURP NA

sosi to 'dhiμιουρδίνα' tou apo tin katarevesi.
savePFPVps DEF creation his from DEF collapse. (T.29.10:37)

The leader of the Islamic Revolution Ayatollah Homeini, described
Teheran's decision...as a 'cup of poison' that he had to drink in
order to save his 'creation' from destruction.

We shall assume that (193) reports accurately what was actually said. Whether or
not this is the case does not matter for the analysis of shift, since shifting from an
imperfectly remembered or imagined direct utterance employs the same
mechanisms as an accurate report. We can be certain that a [+DIST] form is the
result of backshifting only if the equivalent [-DIST] form would be unacceptable in
the direct speech which is being reported. There can be no doubt that (193) contains a backshifted modal verb (eprepe, 'had to') since this [+DIST] form of the verb in direct speech would mean that the imam was not quite certain whether he would drink the cup of poison or not: "I ought to drink it". Given our knowledge of the world we would rather understand him to have said something like: "I have to/must drink it" which would require [-DIST] prep. The backshift may be due to the unreal nature of the event 'drink the cup of poison', or the writer could be distancing herself from the religious-political rhetoric of the speech. The shift is not due to the temporal location of events but is a metaphorical shift.

The next extract exemplifies a temporal shift:

(194) (Context:...the events of those years justify the fears of the pessimists.)
Oti dhiiladi i 'meta Titon' Yugoslavia tha dhokimazotan
that that-is-to-say DEF 'after (name) (name) FUT test[IPFV]p3s
apo ethnistikes dhimahes.
by ethnic struggles
(T.29.12:47)

That is to say, that Yugoslavia after Tito would be tried by ethnic conflicts.

(194) reports a confident prediction, made some years ago, to the effect that Yugoslavia after Tito would be racked by ethnic unrest. The writer reports the prediction when it has already come true. A confident prediction could be encoded by the particle tha and a [-DIST] verb. The [+DIST] form tha dhokimazotan in direct speech would be an unreal conditional, i.e. not compatible with a confident prediction. The form in (194) must clearly be the result of temporal backshifting; the events which were predicted at a past point in time are real and in the (historical) past.

The mechanics of shifting can be stated as a general rule with reference to the TMA model presented in this thesis:

SHIFTING RULE (tentative):
Replace the form (of the predicate) encoding a given location in one paradigm by its form for the identical location in another paradigm.

*paradigm in the tense system, see fig. 50, 51.
The rule, to be further discussed below, applies to shifting in either direction. (192) showed backshifting in indirect speech. 'Frontshifting', e.g. shifting a narrative from the past into the present (to be discussed below) follows the same basic rule.

4.2.2 The mechanics of shifting in a four module system.

Underlying the shifting rule is the fact that each position in any of the four full paradigms corresponds to a particular temporal and aspectual relationship between the event and its point of reference. The image of moving from a given position in one paradigm to the identical position in another paradigm thus models the cognitive-linguistic act of changing the DISTance while keeping event time and aspect relationships constant. That the rule holds can be checked by going to fig.28 in 2.7 for English or the equivalent figure below for Modern Greek. These figures include all the aspectual forms, thus showing also irregularities or 'holes' in the system (see discussion below).

Fig.52 The Four Module TMA System (with Modern Greek realizations).
Forms in parentheses in fig. 52 have a wider coverage than the specific meaning of the particular aspect, due to the lack of a contrasting form, i.e. because there is a 'hole' in the paradigm. The IPFVnp grafo (am writing/write), for example, does not stand in opposition to any PFVnp form for events AT S. All events AT S must be IPFVnp. Fig. 52 is presented here merely as a means of showing the relationship between aspectual encodings and event location. In fact, given the rules for compatibility of aspects with event locations given earlier (table 4 (1.6)) fig. 52 can be derived from the simpler fig. 50. The only additional information needed is a list of existing verb forms in the language concerned. Table 4 is repeated below.

<table>
<thead>
<tr>
<th>Compatible aspect</th>
<th>Event time</th>
<th>Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFV IPPV -</td>
<td>R/E AT</td>
<td>PFV Perfective</td>
</tr>
<tr>
<td>PFV IPPV -</td>
<td>R&quot;E POST</td>
<td>IPFV Imperfective</td>
</tr>
<tr>
<td>PFV - PFCT</td>
<td>E'R PBE</td>
<td>PFCT Perfect</td>
</tr>
</tbody>
</table>

Table 4 (From 1.6) The compatibility of aspect with event time.

In summary, only tense is affected by shifting. Aspect remains unchanged as long as there is a form available. Holes in the paradigms of aspectual forms are filled in accordance with clear constraints on what aspect is compatible with what event location, as listed in table 4. Table 20 shows some resulting correspondences between [+DIST] and [-DIST] encodings of event times.

<table>
<thead>
<tr>
<th>[+DIST] --------- [-DIST]</th>
<th>rel. E to R:</th>
</tr>
</thead>
<tbody>
<tr>
<td>wrote &lt;--------- write</td>
<td>E'R</td>
</tr>
<tr>
<td>had written &lt;----- wrote</td>
<td>E'R</td>
</tr>
<tr>
<td>had written &lt;----- have written</td>
<td>E'R</td>
</tr>
<tr>
<td>would write &lt;----- will write</td>
<td>R'E</td>
</tr>
<tr>
<td>egrapsa &lt;-------- grafo</td>
<td>E'R</td>
</tr>
<tr>
<td>iha grapsi &lt;------- egrapsa</td>
<td>E'R</td>
</tr>
<tr>
<td>iha grapsi &lt;------ eho grapsi</td>
<td>E'R</td>
</tr>
<tr>
<td>iha egrafa &lt;------- iha grapso</td>
<td>R'E</td>
</tr>
</tbody>
</table>

Table 20 Some shifted equivalents of unshifted forms.
The table shows shifted equivalents of some unshifted forms, but is not exhaustive. Basic facts to remember at this point is that a/ DISTance is marked on the first verb only, e.g. on the first auxiliary if there is one, b/ the aspect remains semantically the same but c/ there are ‘holes’ in the system. To take an example, the frontshifted equivalent of [+DIST] wrote is [-DIST] write:

(195) a/ Absentmindedly he wrote the name again and again, trying out different spellings.

b/ Absentmindedly he writes the name again and again,.....

But, the backshifted equivalent of [-DIST] wrote is had written. The PFV expression of the E-R relationship in the [-DIST] paradigm is equivalent to a PFCT expression in the [+DIST] paradigm since there is no PFV form available to encode this event location:

(196) a/ ‘I am sure he wrote to them today!’

b/ She told me she was sure he had written to them that day.

For Modern Greek, table 20 shows that a [-DIST] IPFV form (grafo) normally becomes [+DIST] PFV (egrapsa) when backshifted and the opposite relationship holds for a frontshifted form. This is because in Modern Greek the IPFV is the only aspect which may denote events at the non-past point of reference S, while PFV is the unmarked encoding of events at a past point of reference. This is exemplified in (197–198) with the irregular verbs vlepo (see) and leo (say).

(197) Ton idha  sto dhrmo  ke mou  ipe.....

him seePFVp3s on+DEF  street and me saiPFVp3s
I saw him in the street and he said to me...

(198) Ton vlepo  sto dhrmo  ke mou  lei...

him seeIPFVnp3s on+DEF  street and me saiIPFVnp3s
I see him in the street and he says...

The narrative in (197) has been frontshifted in (198). That is to say the forms from the [+DIST] paradigm in (197) have been exchanged for [-DIST] forms in (198). The PFV form idha, which is past, must become IPFV (vlepo) in (198) since events which are ongoing AT S can only be IPFV in Modern Greek.
The English and Modern Greek examples in (195)–(198) illustrate that, although shifting is an operation on tense and not on semantic aspect, ‘holes’ in the paradigms sometimes force a change in aspectual form. Such ‘irregularities’ have been explicited by allocating encodings to event locations in paradigms related to different reference points. Shifting involves a change of reference point while event location and aspect are constant. When the equivalent aspectual encoding is not available, another compatible aspect is chosen. The purpose of referring to fig.27 and 51 in this section was to show what aspectual forms correspond to what event locations in the respective paradigms. Such a mapping of encodings is made possible by the use of abstract event locations (table 4). In fact, the shifting rule operates on the tense system, as shown in the simpler fig.50 and 51.

Once correspondences between locations and aspectual encodings have been established the shifting rule works elegantly on the tense system (for modal predicates, see chapter 6), with one exception. The shifting rule, as formulated above, does not work when a PFVp (e.g. *wrote*), which denotes an event at a [+DIST] point of reference, is backshifted:

(199) 'At the meeting last Monday the committee decided that they would stop funding the tea club.'
He told me that they had decided they would stop funding the tea club.

The PFVp form *decided* denotes an event at a [+DIST] point of reference expressed as *last Monday*. In reported speech it will, if backshifted, become *had decided* – another [+DIST] form. The shifting rule proposed earlier clearly does not apply to (199) since the shift is not from one paradigm to another. Rather the PFVp is ‘moved back’ within its own paradigm to PFCTp (fig.51). The same may happen to the auxiliary of an English IPFVp (e.g. *was writing*) with [+DIST] reference, which as a result of backshifting will become a PFCT–IPFVp (*had been writing*), i.e. *was* becomes *had been*. The PFCTp itself, in contrast, cannot be backshifted.
One might say that PFCTp is, in a sense, the most DISTant of the tense forms. The Shifting Rule can now be expanded:

**SHIFTING RULE:**
Replace the form (of the predicate) encoding a given location in the starting paradigm by its form for the identical location in the target paradigm. If the starting and the target paradigm are the same, choose the encoding for the next location in the direction of the shift. *(paradigm in the tense system, see fig. 50, 51.)*

The ‘starting paradigm’ is that of the unshifted form, the ‘target paradigm’ that of the shifted form. Since there are only two paradigms to choose from in this type of system, there can be no confusion. The ‘direction of the shift can be either frontshift: from (E\textsuperscript{−}S) to S, or backshift: from S to (E\textsuperscript{−}S) and from (E\textsuperscript{−}S) to E\textsuperscript{−}(E\textsuperscript{−}S). Notice that the rule applies only to the first verb in the verb group, which is the one carrying DISTance marking.

This is not the place to go into the peculiarities of modal auxiliaries (see 6.13.1). English will is, however, both a modal and a marker of future in the non-modal paradigms. Since shifting applies to verbs which are marked for DISTance, it will apply only to would in the verb group would stop funding in (199). In this example, would is [+DIST][−SUBJ], i.e. it is used as a marker of ‘future in the past’. Other forms of would+verb occur only in the [+DIST][+SUBJ] paradigm. The shifting rule is a rule for shifting tense only and so it does not allow shifts in the direction from [−SUBJ] to [+SUBJ]. Consequently, would stop is blocked from becoming would have stopped.

### 4.2.3 The function of tense shifting.

The mechanics of shifting have been described above. Its functions have been commented on in conjunction with the various examples. The function of temporal shifting is to signal that the temporal location of events has changed. Examples (192) and (194) showed backshifting due to an actual change in temporal location. Metaphorical shifts, on the other hand, have been shown to
serve a variety of purposes. In (193) it was suggested that the backshift might be
due to the unreal nature of the event or to what might be called a 'non-committal'
attitude on the part of the reporter. The same attitude could have triggered the
backshift in (196) and (199), or it could be due to the speaker doubting the
veracity of the reported proposition. The speaker in (199) may thus have chosen
backshifting to show that he takes no responsibility for the accuracy of the
reported predication.

Example (198), finally, illustrated frontshifting used for 'dramatic effect'
(see further below). Frontshifting may signal highlights in a narrative. Quirk et al.
(1985:4.8) describe the 'historic present' as conveying "something of the
dramatic immediacy of an eye-witness account". They give the following example:

(200) It was on the Merritt Parkway just south of New Haven. I was
driving along, half asleep, my mind miles away, and suddenly there
was a screeching of brakes and I catch sight of a car that had been
overtaking me apparently. Well, he doesn't. He pulls in behind me
instead, and it's then that I notice a police car parked on the
side. (ibid:19.42)

Interesting to note in this example is that the frontshifting occurs on events located
after a certain point in time. Thus the tense on catch sight does not agree with the
tense on overtake in the following relative clause. The effect is, as Quirk et al. say,
that of 'dramatic immediacy'.

Shifting thus seems to have a variety of meanings. Is it possible to find one
semantic invariant which explicates all these seemingly different functions? I
suggest that it is. The semantic invariant is DISTance. Shifting is, as has been
shown, an operation on DISTance. The semantic contents of DISTance was
discussed in chapter 1. It was said that plus/minus DISTance was a preferable
term over past – non-past because of the many non-temporal uses of verb forms.

Table 6 from chapter 1, repeated here, is a summary of such uses (see also
examples, chap.1):
<table>
<thead>
<tr>
<th>PAST FORMS</th>
<th>NON-PAST FORMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+DIST]</td>
<td>[-DIST]</td>
</tr>
<tr>
<td>Lower probability</td>
<td>Higher probability</td>
</tr>
<tr>
<td>Lower confidence</td>
<td>Confidence</td>
</tr>
<tr>
<td>Tentativeness</td>
<td>Directness</td>
</tr>
<tr>
<td>Formality</td>
<td>Personal involvement</td>
</tr>
</tbody>
</table>

**Table 6** (From 1.7.3) Non-temporal concepts expressed by past and non-past forms.

These non-temporal uses (table 6) were explained by the fact that [-DIST] denotes coincidence with what the speaker/Ego represents and that [+DIST] denotes non-coincidence with the same. S represents the present and also what is real, experienced and certain. The temporal and non-temporal functions of shifting can now be seen to be one and the same and can be stated as follows:

**SHIFTING**: Its function is to alter (increase or decrease) the distance between speaker and propositional content or between speaker and listener.

The function of shifting thus follows from the fact that it is an operation on DISTance. The terms 'speaker' and 'listener' should be taken to cover also 'writer' and 'reader'. In the type of tense system referred to here, there is only a binary DISTance opposition so the term 'alter' can only mean from plus to minus or the reverse. It is quite possible that languages with multiple remoteness distinctions use remoteness in a similar way (cf. Kiksht, 2.8).

Within the general function of shifting one can establish sub-categories of shifts for more specific purposes. The first step is, obviously, to establish whether shifting has in fact taken place. This is not always as straightforward as it might seem. The examples below, of frontshifting in English, are from conversational data. They illustrate some of the difficulties in determining when a shift has occurred.

(201) (topic: betting) And I said to Dianne 'oh', I said, 'I may as well have a double I s'pose'. So we're just picking them out and trying to fossick them out, you know. So I put the extra double and I had about three with these other horses, about four and um er...
Both examples have a ‘story line’ with past temporal reference in the real world.

Some of the predicates are not directly related to the story and have [-DIST] reference. They exemplify the fact that comments by the speaker, e.g. I think, it seems, and other propositions which are deemed generally valid, or as holding at S, can be inserted into a narrative or report with a past R without affecting the point of reference of the main discourse (see e.g. Quirk et al, 1985:14.31). In the examples above, you know in (201) and I know, that’s true, you see in (202) are examples of such events. They are outside the time axis of the narrative and have not been shifted. Clear examples of frontshifted events would seem to be are picking and (are) trying in (201). However, it cannot be completely ruled out that speakers contract past we were -ing to we’re -ing in fast colloquial speech although this would be unacceptable in other contexts. The following verb, put, does not undergo any morphological change in the past so its tense cannot be established. It may or may not have been frontshifted. Nor is it clear whether think and come in (202) are frontshifted or whether they are genuinely [-DIST], expressing ‘general truth’, i.e. that in such situations bees think it’s thunder and come down.

It has been said that frontshifting is more common in spoken than in written English. It may also be less restricted in terms of where shifts can occur; the possible shift in (201) shows that in a conversational setting the speaker can shift to S at times when this would not be considered felicitous in most written genres.

In contrast to English, frontshifting is common in Modern Greek newspaper texts of all kinds. Below is an extract from what might be characterized as a
'human interest' story rather than a news report. It utilizes frontshifting to give the account more immediacy. The story concerns the treatment of prisoners and is set in the past. The text describes how guards in the prison fabricate evidence against the prisoners.

\[(203)\]  
\[
\text{(past time context: Tin epomeni wera...)} \quad \text{Tin idhia wera i filakes} \\
\quad \text{(DEF following day)} \quad \text{DEF same day} \quad \text{DEF guards}
\]

\[
\text{thas spasoun to skabo ke ta spasaena ksilα, afou}
\]
\[
\text{FUT breakPPVnPsp DEF stool and DEF broken wood(pl) after}
\]

\[
\text{fotografithoun, thas jinoun ta 'opla' ton 'eksejermenon'.}
\]
\[
\text{photographPPVnPsp FUT becomeIPFVnPsp DEF weapons of rebels}
\]

\[
\text{(past time context: The following day...)} \quad \text{The same day the guards will break the stool and the broken pieces of wood, having been photographed, will become the 'weapons' of the 'rebels'.}
\]

The text from which (203) is taken is clearly a frontshifted narrative. The time expression 'the following day' tells us the events are future in relation to the temporally past reference point. This reference point is made metaphorically [-DIST] by the non-past encoding of two events: thas spasoun ('they will break') and thas jinoun ('they will become'). Such front shifting occurs not only in 'human interest' stories but with lesser frequency also in straight news reports. According to Paraskevas-Shephard (1987) who analyzed Modern Greek texts of different genres, journalists perceive frontshifting to be informal and so it is more common in reports involving 'ordinary' people. This distribution is compatible with the function of frontshifting which was said to be "to decrease the distance between speaker and propositional content or between speaker and listener", the 'listener' in this case being a reader.

4.2.4 The Market Text: an example of shifting in Modern Greek.

(203) above does not adequately illustrate how the resource of shifting can be used by the Modern Greek speaker in longer connected discourse. To show this, a reportive text from a Greek newspaper is analyzed below. Although it might
seem from the English examples just discussed that there are no restrictions on where shifting can occur in English, the analysis of the following Modern Greek text will show that differences exist in how shifting is used. The restrictions seem to be fewer in Modern Greek than in English and the relationship between type of discourse (genre, mode etc.) and shifting is different. The literal translation of the text into English may consequently seem 'peculiar', but consultation with native speaker informants showed that the frequent shifts in tense were quite acceptable and unremarkable in Modern Greek.

The context of the "Market Text" is a protest staged by dealers against the relocation of the second-hand market where they are stall holders. It is presented in six segments, glossed and with a translation of each part. To the left of the text there is a tense diagram of the various shifts. The diagram consists of three time axes: past (E˙S), present (S) and future (S˙E). A vertical line between events means that the location of the first event has become point of reference (R) for the following event. Relevant sections of the text will be repeated throughout the analysis which follows.
A. I nihta tou Savatou 1posite irema me tin parousia panta DEF night of Saturday passIPFVp3s caley with DEF presence always
ton ishiron astinomikon chinamakon ja mathe endhehomeno. Stis 7 to DEF strong police force for every eventuality at 7 DEF
proi tis Kiriakis, prin kala kala feksi, ta episodhia morning of Sunday before well well dawn DEF incidents
2epanalamvanonde. Neo kardhiakoe episodhio 3simadhevi tin idhi resumeIPFVp3p new heart(adjl incident marIPFVn3p3s DEF already
elektrismenio atmosfera. I kardhia tou Kosta Papadhaki dhen electrified atmosphere DEF heart of (name) NEG
4andekse ke 5soriaastike sta halikia. I apotomi ptosi tou endureIPFVp3s and collapseIPFVp3s on+DEF pebbles DEF sudden fall his
6ihe san sinepia to elafri travematismo tout! haveIPFVp3s as consequence DEF light injury his
A. Transl.: Saturday night 1.passed quietly in the constant presence of the police force (who were there) for any eventuality. At 7 on Sunday morning, before there is proper daylight, the incidents 2.start again. Another tragic incident 3.mars the already agitated atmosphere. K.P.'s heart did not 4.hold up and he 5.collapsed on to the gravel. His sudden fall 6.had as a consequence his slight injury (=that he was slightly injured).

B. I fones 7jimonde entosoteres ke ta sinthimata DEF voices becomeIPFVn3p stronger and DEF slogans
8polaplasiazononde. 9thelouve ke mis na zisoume', 10elegan multiplyIPFVn3p3p wantIPFVn3p3p and we MA liveIPFVn1p sayIPFVn3p oll me eipomeses tis grothies. all with raised DEF fists
9thelouve na zisoume' (want to live)
B. Transl.: The voices 7.become louder and the slogans 8.multiply. "We also 9.want to live!" they all 10.said with raised fists.
C. Transl.: At the entrance to A. 350 retailers 11. are staging a sit down protest. The police, it 12. should be noted, do not 13. use force. They 14. talk with the interested parties and the latter, with few exceptions, 15. obey.

D. Transl.: The much afflicted traditional P. market did not 16. function again on the fourth Sunday (running). Late at midding, the council bulldozers 17. drove in to clean the area of rubble and to carry out construction work.

E. Transl.: The coordination and the overseeing of the undertaking (took place) with another thirty "interested parties". The first stage of the removal of the second-hand dealers 18. was crowned by success.
F. Alla opos 19fenete, ta pragmata sto kenourjio pazari, sti but as see1PFVnps DEF things in+DEF new market in+DEF
vionihaniki periichi then 20ine ke toso rodhina. Stis 11 to industrial area NEG be-nps and so rosy at+DEF 11 DEF
proi hthes katiki tis Agias Sofias 21ekanan dhimagartetria morning yesterday residents of (name) do1PFVnp3p protest
arnomeni na dhehtoun tin engkatastasi tou stin periichi refusing NA accept1PFVnp3p DEF installation OBJ in+DEF area

tous.
their

F. Transl.: But it 19.seems, things at the new market in the industrial area 20.are not so rosy. At 11 in the morning yesterday, inhabitants of A.S. 21.were protesting, refusing to accept its installation in their area. (P.8.2.88:10)

The events are ordered and numbered along the time axes as they occur in the discourse. The leftmost axis, E^-S, is typically the 'story line'. The vertical line to its right represents the speaker's now. The horizontal lines represent changes in the location of events. Such changes may be temporal but incursions can be made from a particular axis to another also for reasons unrelated to the temporal location of the event. Shifts can occur in two directions: 'frontshift' (from past to S) or 'backshift' (from S to past).

The starting point in any discourse is S, the default point of reference. The change of axis from S to E^-S on the first event in the Market Text, locates this event in past time. Its past form indicates that, in relation to S the event time is PRE R and it also sets a potential [+DIST] point of reference for the following discourse.

Nevertheless, events 2 and 3 are morphologically non-past:

Saturday night 1.passed quietly in the constant presence of the police force (who were there) for any eventuality. At 7 on Sunday morning, before there is proper daylight, the incidents 2.start again. Another tragic incident 3.mars the already agitated atmosphere.
The genre (newspaper report) creates the expectation that the first event is indeed to be seen as a past reference point despite the non-past form of events 2 and 3. The context makes it clear that the temporal location of 2 and 3 is past. The shift to non-past must therefore be metaphorical. The distance created between the reader and the content of the text by the [+DIST] point of reference set up in event 1 is decreased when events 2 and 3 are frontshifted, i.e. made metaphorically non-past. This use of non-past forms for past events is similar to that of ‘historical present’ in English but the constraints on its use are clearly different (see translation).

Frontshifting is far less common and more strictly regulated in English than in Modern Greek, at least in written genres. In Modern Greek shifts can take place anywhere in the discourse as long as the speaker deems the temporal location of the event to be sufficiently clearly indicated by the context. This seems to hold regardless of genre or level of formality (although its frequency will vary). The constraint is thus based on speaker judgement and can be formulated as follows:

**Tense Shift in Modern Greek:**
The point of reference of events related to the same time axis can undergo metaphorical shift at any time in the discourse if the speaker considers the temporal location to be sufficiently clearly indicated by the context.

This constraint will be further discussed in conjunction with event 10.

Returning now to the Market Text, it can be seen below that events 4, 5, 6 are both morphologically past (PFVp) and temporally past, despite the previous shift to non-past (on 2 and 3).

```
SHIFT
4 anekse [endured] K.P.'s heart did not hold up and he
5 soriastike [collapsed] collapsed onto the gravel. His
   [collapsed] sudden fall had as a consequence that he was slightly injured.
6 the [had]
```
This shift may be a return to the past temporal reference set up by event 1.

Another interpretation is that these are simply events PRE the frontshifted events in 2 and 3 (but not [+DIST]). In this case one would expect them to be able to be paraphrased by another non-past form, the PFCTnp. This is in fact the case with event 5, soriastike ('collapsed') which could be replaced by ehi soriasti ('has collapsed'). Event 4 appears to be less acceptable in the PFCTnp (ehi andeksti, 'has held up'), presumably because of its completive character. It is interesting to note that the same verb, andekse ('held up'), can however be replaced by a [+DIST] form: PFCTp ihe andeksi ('had held up'). Informants seem to feel that the heart failure is located in its entirety before S. (See further 5.3.3, PFCT aspect.)

The 'collapsing onto the ground', on the other hand, seems to continue AT R by the victim's presence on the ground and so contextual factors links it to the point of reference, S, set by events 2 and 3. It is thus more easily replaceable by a PFCTnp than by a PFCTp. Event 6, finally (ihe 'had'), is not replaceable by PFCT since there is no PFCT form of this verb. It should be added that the acceptability of the different forms is totally context dependent.

To summarize the situation in 4–6, the point of reference of these events is indeterminate between [-DIST] and [+DIST]. They are encoded by PFVp which, as has been demonstrated, is included in both paradigms, once to denote a PRE S event and, secondly, to denote an event AT a [+DIST] R. The fact that the events can be seen as located either at a past point of reference or anterior to the present (S) would matter only if the speaker were to use PFCT realizations; PFCTp being exclusively [+DIST], PFCTnp exclusively [-DIST]. By using PFV instead, the speaker has not only left the reference time unspecified but has also avoided having to encode the different aspectual characteristics of the two events, 4 and 5.
The voices become louder and the slogans multiply. "We also want to live!" they all said with raised fists.

The following two events, 7–8, are frontshifted, past in the real world but metaphorically [−DIST]. Event 9 is direct speech and retains the present point of reference of its source since tense in (quoted) direct speech is external to the 'story line'. It neither influences nor is it influenced by the time reference of the story.

The return to the past in event 10 breaks a sequence of frontshifted forms, starting in 7, 8 and continuing in 11, 13, 14 and 15 below. The past form on this event (10) may have the purpose of reminding the reader that the report is actually anchored in the past despite all the non-past forms. This would then be an example of where the speaker considers that "the temporal location of the event is not sufficiently clearly indicated by the context" (cf. tense shift constraint above). Paraskevas–Shephard (1987:80) makes a similar observation, remarking that the speaker sometimes chooses to re-establish an 'anchoring point' in (front) shifted discourse "if the discourse is long enough".
At the entrance to A. 350 retailers are staging a sit down protest. The police, it should be noted, does not use force. They talk with the interested parties and the latter, with few exceptions, obey.

Events 11, 13, 14 and 15 continue the frontshifted story line broken by 10. Event 12 is a comment by the reporter. It is future in form but modal/irrealis in force. Comment predicates (see Noonan, 1985) with S as reference (e.g. I think, it seems) are not subject to restrictions on tense agreement since they do not form part of the report or narrative as such. The same can be said of the expression in 12.

In the following paragraph, events 16, 17, 18, there is again a return to the past time reference which constitutes the story line.

The much afflicted traditional P. market did not function again on the fourth Sunday (running). Late at midday, the council bulldozers drove in to clean the area of rubble and to carry out construction work...The first stage of the removal of the second-hand dealers was crowned by success.

Event 19 is a comment by the reporter and thus independent as far as time reference goes:
Event 20 might look like another frontshifted past event. However, it is very likely that it actually has present time reference, i.e. that inē ('is') does not stand for itan ('was'). Since S is the default point of reference, the speaker can always use S without signalling a new reference point. This makes comments such as 19 possible. Likewise, 20 may be a statement of general truth (valid at S). Such shifts to S which use S as the unmarked axis, without the purpose of "diminishing the distance between speaker and listener", will be referred to as 'default shifts'.

The final event, 21, is past in relation to S. It may be located on the same time axis as previous past events, but this is not the only possibility. It could also be seen as starting up a new [+DIST] 'strand' in the report. It would then be past, but more recent than the previous past time axis.

4.2.5 Agreement and shifting; a comparison of English and Modern Greek and directions for further research.

Modern Greek and English thus use shifting for the same purposes, but looking at the example text above it is clear that the constraints on when shifting is allowed differ. Examples of shift points in the original text which are highly unlikely to correspond to shift points in an equivalent English text are exemplified in the following sections, repeated here for convenience in English:

(204) Saturday night passed quietly in the constant presence of the police force (who were there) for any eventuality. At 7 on Sunday morning, before there is proper day light, the incidents start again. Another tragic incident mars the already agitated atmosphere. K.P.'s heart did not hold up and he collapsed on to the gravel.
(205) 'The voices become louder and the slogans multiply. 'We also want to live!' they all said with raised fists.

(204) shows frontshifting (‘is, mars, start’) while (205) is an example of a return backshift (‘said’). The use of written text may make the difference between Modern Greek and English seem greater than it actually is. Although the shift in (204) is clearly unacceptable as it stands it is less clear that it could be ruled out in spoken conversational English, i.e. with the same propositional content but phrased according to an informal spoken genre (cf. (201)).

The question is what causes the infelicity of the shift in the written text in (204). I would tentatively suggest that it is mainly due to the brevity of the preceding discourse. The extract contains the beginning sentences of a paragraph. Put in simple terms, the first sentence is too brief and short on information to function as a ‘paragraph’ on its own and, it would seem that metaphorical shifts are not allowed within a ‘paragraph’ in this genre, nor within a clause complex. This is illustrated also in (203). The obvious problem with this formulation is that the term ‘paragraph’ cannot be defined in precise linguistic terms and that, as far as I am aware, ‘paragraphing’ has not been shown to have any psychological reality. Yet, it is difficult to see how the awkwardness of the shifts in (204–5) could be explained without reference to a larger unit than the clause complex. In the analysis of spoken discourse different units have been suggested. D. Slade (personal communication) has defined the ‘move’ and the ‘move complex’ as units in her analysis of conversational English. One feature that defines a move or move complex is the tone group. A more thorough study of shifting would need to look at the possible correlation between shift points and discourse units, e.g. paragraphing in written English and moves as defined by tone group in speech.

Related to the question of shifting is tense agreement. If a rule for tense agreement could be formulated it would constrain when shifting could take place. Typically, events located relative to the same time axis agree in tense. As has been
pointed out before, a narrative text may contain comments by the speaker, direct speech, statements of general validity etc. which do not relate to the same time axis as the events in the narrative and which consequently do not have to agree in reference time with events which are part of the story line proper. To make it clear what is meant by relating 'to the same time axis' we shall briefly analyse an example before formulating an agreement rule. The example is (191), repeated below as (206).

(206) They're still negotiating. They started at 7 this morning. The press was here but nobody wanted to answer any questions.

Events encoded by the PFVp (e.g. started) are always located prior to S but they can be seen as both PRE S and as AT a past point of reference. This was shown in part A of the Market Text and is illustrated again in the diagram below which depicts the tense shift in (206).

```
E'S  | S
   | _SHIFT—are
   | started (PRE S and AT (E'S))
   | was (AT (E'S))
   | wanted (AT (E'S))
```

"They're still negotiating. They started at 7 this morning. The press was here but nobody wanted to answer any questions."

Table 21 The location of events relative to the time axes E'S and S.

The first past event in table 21 is located both relative to the time axis S and relative to the axis E'S. It sets a point of reference on the E'S axis to which the second event is related. The second event is located relative to the axis E'S only and sets a reference point on this axis for the third event, and so on. It is the sameness of the relationship of events to time axes which is expressed by tense agreement.

We can now formulate a tentative rule for tense agreement in English. Such a rule would act as a constraint on shifting under certain conditions:
Tense Agreement in English (tentative suggestion):
Finite verbs encoding events which are temporally located relative to the same axis, within the same discourse unit, must all be marked for the same reference time.

Further research is needed to determine the nature of the 'discourse unit' and to define in what circumstances (discourse situation, genre etc.) the rule is allowed to be broken.

What the rule allows us to state quite confidently is that shifts are allowed if events are related to different time axes. This may happen, for example, in discourse units containing indirect speech as shown in (196). It can also be said that the speakers' comments, direct (quoted) speech and statements of general validity are tensed independently of other parts of the discourse. But the rule also attempts to formulate why instances of tense shifting like (204–6), already discussed, and (207) below are not acceptable in English. The following text from a newspaper report is translated from Modern Greek into English.

(207) Opos pronaferame, i 30 hroni kopena profasistike oti as pre-referPFVp1p DEF 30-year-old girl pretendPFVp3s that
viazete ke dithike ja na figi. be-in-a-hurryPFVp3s and dressPFVp3s PURP NA leavePFVnp3s
(P.8.2.88:4)

"As we already mentioned, the 30-year-old girl pretended that she is in a hurry and got dressed to go.

In accordance with the tense shift rule suggested above, an explanation of the infelicity of (207) in English would have to include the fact that the event be in a hurry is located on the same time axis as the governing event pretend and, furthermore, that it cannot be seen to hold at S. Syntactic factors may also intervene; a shift from the tense of pretend is less likely also because be in a hurry is in a finite complement clause of this verb. In Modern Greek the use of non-past tense is, however, acceptable, because the temporal location of the frontshifted event viazete ('is in a hurry') is clear from the tense in the main clause. This follows the shifting constraint for Modern Greek posited earlier. The shifting of isolated events as in the above example are in fact very common. The purpose of the non-
past form (in (207)) may be just simplicity given that the temporal location is clear. It would then be an example of what was called a ‘default shift’ above (event 20 in The Market Text). The non-past is used as unmarked for tense and does not become point of reference for subsequent events.

I have discussed shifting in English and Modern Greek at some length for two reasons. Firstly, to dispel a possible impression that it is not rule bound. A comparison of Modern Greek and English shows that it is. Shifts that may occur in one language are not acceptable in the other. Constraints on shifting seem to be mainly discourse oriented but may interact with syntactic phenomena, e.g subordination (see (207)). Secondly, it has been demonstrated that a tense analysis such as the one carried out on the Market Text would be a crucial component of an investigation into constraints on tense shifting. It is able to show when a shift has in fact occurred and also when there may be some ambiguity as to whether this is the case or not. A thorough analysis of constraints on shifting would have to consider, for example, genre, level of formality and mode (written or spoken) in the languages concerned, but this is outside the scope of this thesis.

In this section (4.2) we have looked at the use of shifting between [+DIST] and [−DIST] reference times. The term ‘shift’ has been used for a change of location of the events of a section of discourse from one reference time to another. To this we need to add that some shifts simply return events to the original time axis, e.g. the story line. Another type of shift is the ‘default shift’, where S is used as the unmarked time axis, often on a single event.

4.3 Summary of tense in Modern Greek and English.

The marking of reference time and event time in English and Modern Greek were described in the first part of this chapter. Reference time, or more precisely DISTance, is marked on the first verb in the verb group only. The English infinitive and non-finite na-clauses in Modern Greek were shown to encode event time but
not reference time. It was demonstrated that the existence of a PFCT-IPFV and of the 'going to' future in English together with the recursiveness of event time allow the construction of highly complex verb groups. Modern Greek verb groups have a tendency to be less complex but can contain a number of non-finite na-clauses. For Modern Greek it was also shown that the tense on the complement of a modal verb can distinguish epistemic modality from other modalities.

Shifting was the topic of the second part of the chapter. The mechanics of tense shifting in connected discourse are the same in English and Modern Greek and were described within the framework of the fcur module TMA system. In contrast, their frequency was seen to differ in the two languages. Backshifting is fairly common in English reported speech, especially in certain written genres, much less common in Modern Greek. Frontshifting is usual in Modern Greek in both spoken and written genres but relatively rare in English, especially in written genres. The points where shifts can felicitously occur also seem to differ and to be more highly constrained in English. To account for this we attempted to formulate rules for when shifts can or cannot occur. The conclusion was reached that a more precise account of shifting would require extensive analysis of connected discourse. Suggestions as to what factors would need to be looked at were made but their implementation is, unfortunately, outside the scope of the present investigation.

It has, I believe, been demonstrated that the use of the TMA model introduced in this thesis both facilitates the description of shifting and explicates it. The function of shifting was seen to follow from the inherent semantics of the tense system. Although shifting is an operation on tense, it was also shown that a description of the relationship of aspects to event locations within this system could explicate seeming irregularities in shifting. Finally, I would suggest that further studies of the shifting phenomenon might benefit from text analyses such as the one performed on the Market Text.
It has, however, been demonstrated that an integral part would need to be
be an analysis of shifts such as the one performed on the Market Text.
CHAPTER 5: ASPECT IN MODERN GREEK.

This chapter builds on the discussion of pre-linguistic concepts and the universal definitions in chapter two. It was suggested that event intervals are perceived as figures in relation to the reference time/ground and that this is linguistically encoded as aspect. The universal definitions proposed in chapter 2 were thus anchored in pre-linguistic concepts, most importantly: coincidence and extension. The definitions were compatible with but not predictable from these underlying concepts.

In this chapter it will be proposed that language specific meanings will be compatible with, but not necessarily predictable from, underlying universal meanings. In 5.1, the modification of inherent aspectual meaning by PFV or IPFV aspect marking will be discussed. In 5.2 we shall examine all three aspects in some detail to establish language specific meanings in Modern Greek. Subsequently, in sections 5.3-7, the description will focus on the uses to which Modern Greek aspects are put. These uses will be compatible with the language specific meanings, but again they are not fully predictable from them.

Schematically, the analysis is structured as follows:

```
  LANGUAGE SPECIFIC USES
  LANGUAGE SPECIFIC MEANINGS - (Chap.5)
  UNIVERSAL, LINGUISTICALLY ENCODED MEANINGS
  PRE-LINGUISTIC CONCEPTS - (Chap.2)
```

Fig. 53 A schematic view of the meanings of aspects.

A differentiation is made in fig. 53 between meanings on the universal and language specific levels respectively and language specific uses. One example would be if Modern Greek IPFV were assigned the language specific meaning ‘Continuous’ and the use ‘Habitual’ since this use is implied in the concept of
continuity (see 2.2, fig. 11) which in turn derives from the universal notion of
directionality (see 2.5). It will be shown how, within this framework, aspects in
Modern Greek can be assigned basic language specific meanings which in turn
restrict the exact use to which they are put.

One might expect that variability would be greatest in the topmost tier in
fig. 53 (see, e.g. discussion of PFCT in 5.3.). Recent influences from other
languages could, for example, affect the output of certain groups of speakers.
Although sociolinguistic considerations are largely outside the scope of my
analysis, the possibility of variability in use is one reason for treating 'meanings'
and 'use' separately.

Modern Greek aspect will be summarized in 5.8 and contrasted with
English aspect in the final section, 5.9.

5.1. The IPFV – PFV opposition: Inherent aspectual verb meaning and its
modification

In this section I will examine some categories and characterizations used
by other linguists in discussions of aspect with a view to establishing whether they
are compatible with the facts of Modern Greek. It will be shown that boundedness
is the only feature which helps describe the PFV–IPFV opposition in Modern Greek
but that it does not exhaustively describe and explicate the three-way aspectual
system (PFV–PFCT–IPFV).

5.1.1 Accomplishment/ achievements versus states/ activities.

Aspect can, it was pointed out in section 2.1, be an inherent property of
verbs (or other predicators). Vendler (1967) has been influential in this area. His
classification of predicates into states, activities, achievements and
accomplishments (Vendler, 1967, see also Lyons, 1977) has been referred to
also in discussions of Modern Greek (e.g. Paprotte, 1988, see below). The four
predicate types posited by Vendler can be briefly described with reference to
event trajectory (cf. Langacker, 1982). For states and activities, e.g. ‘be hungry’,
‘play the piano’, any portion of the trajectory counts as an instantiation of the
event. The trajectory does not have a necessary end point or goal. An achievement
does have such an end point. Its trajectory is bounded by the (implied) beginning of
the event and the necessary end or goal. Predicates such as ‘arrive’ and ‘reach
the top’ are examples of achievements. The event cannot be said to be fully
instantiated until the event trajectory is complete, for example, until the top has
actually been reached. The same would seem to hold for accomplishments such
as ‘play a Mozart sonata’. The event has not been fully instantiated until the sonata
has been played to the end.

What then is the difference between an accomplishment and an
achievement? The term accomplishment is applied to an event which can be seen
as ‘ongoing’ before reaching its end point. Lyons (1977) calls accomplishments
“processes which have as their end point an event” (ibid:712). Achievements, in
contrast, take place at a particular “unique and definite time”. Thus one can say I
was playing the sonata for three hours (accomplishment) but not *I was reaching
the top for three hours (achievement).

Paprotte (1988) claims that the difference between achievements and
accomplishments is a real-world distinction rather than an aspectual (linguistic)
distinction (ibid:455), at least in Modern Greek. Consequently, he claims, that a
two way distinction of predication types is sufficient to explicate the use of aspect.
The relevant opposition is said to be that between states & activities on the one
hand, and accomplishments & achievements on the other. The accuracy of this
analysis will be illustrated by examples below. In order to determine what the
salient semantic component (i.e. ‘language specific meaning’) is for IPFV and PFV
respectively in Modern Greek, we will examine the meaning shifts caused by
change of aspect on different classes of verbal predicates.
First it needs to be pointed out that for present (AT S) events in Modern Greek there is no aspectual choice; only IPFV is available to denote such events. There is also a small group of verbs which exist only in their IPFV form, regardless of tense. They include relational verbs such as imē ('be'), eho ('have'), perieho ('contain'), aniko ('belong'), hrostaō ('owe'), the cognition verb ksero ('know'), the necessity modal prepi ('must') and a few others (Mackridge, 1985:104, Hesse, 1980:25). Except for these cases, morphological aspect together with inherent verb aspect determines the meanings of verb forms.

The claim Paprotte makes is that a change in aspect forces a predictable change in reading; accomplishments/achievements become states/activities when in the IPFV aspect. Conversely, what is a state/activity in the IPFV is understood to be an accomplishment/achievement when in the PFV.

Accomplishment ———> Activity

(208) a/ to tragondhise sta italika
     OBJ singIPFVp3s in+O DEF italian
     she sang it in Italian

     b/ to tragodhouse sta italika
     OBJ singIPFVp3s in+O DEF italian
     she used to sing /was singing it in Italian

Examples (208) a and b show how an accomplishment becomes an activity. The activity in b can be interpreted as habitual, which fits Lyons' definition well that an activity is an extended process under the control of an agent (Lyons, 1977:483).

How a state becomes an achievement by the choice of PFV aspect is exemplified by (209) a and b:

State ———> Achievement

(209) a/ agapouse tin jineka tou
     loveIPFVp3s O DEF woman his
     he loved his wife

     b/ tin agapise trela
     OBJ loveIPFVp3s madly
     he fell madly in love with her
Example (210) a, below, denotes another typical achievement, which in Paprotte's terms, becomes an activity by the change of aspect from PFV in (210) a to IPFV in b.

Achievement ----> Activity

(210) a/eftasan stin korifi
reachPFVp3p to+DEF top
they reached the top

b/eftanam stin korifi
reach1PFVp3p to+DEF top
they were about to reach the top / they would reach the top

The inception meaning of the IPFV form in (210) b is characteristic of verbs denoting transition. Completed transitions are expressed perfectly, transitions about to be completed are imperfective. The change exemplified earlier in (209) a and b is, generally speaking, characteristic of typically stative verbs, i.e. verbs denoting bodily sensation, e.g. ache, hurt, inert perception & cognition, e.g. love, smell, understand, and relational verbs, e.g. belong to, consist of, seem, sound. ('Bodily sensation' will henceforth be included under 'perception'.) As pointed out earlier, some of these verbs cannot have a non-state interpretation in Modern Greek, i.e. they only exist in the IPFV.

The ones that do have PFV forms will often be best translated into English by different lexemes for the state and non-state meanings respectively. In Modern Greek, in contrast, the same lexeme is used but in the IPFV aspect for state and PFV aspect for non-state:

Vleno (see):
(211) a/idha ta pedhja na figoune
seePFVp1s DEF children NA leavePFVp3p
I saw the children leave

b/eulpea ta pedhja na figoune
see1PFVp1s DEF children NA leavePFVp3p
I watched the children leave
Akouo (hear):
(212) a/akousa fones
      hearPFVp1s voices
      I heard voices

      b/akouga radhiofono
      hearPFVp1s radio
      I listened to the radio

Ponao (hurt):
(213) a/ponese to podhi tis
      hurtPFVp3s DEF leg hers
      her leg hurt

      b/ponouse to kefali mou
      hurtPFVp3s DEF head mine
      my head ached.

Fenome (be visible):
(214) a/apo pou fanikes esii?
      from where be-visiblePFVp2s you
      where did you appear from?

      b/ta vouma dhen fenontan app’ki
      DEF mountains NEG be-visiblePFVp3p from+there
      the mountains were not visible from there

Examples (211)–(214) illustrate that PFV aspect on relational verbs or verbs denoting perception or cognition means that the event is presented as ‘occurring’ rather than ‘being’. The converse is true in the IPFV, which presents the relation, perception or cognition as a state.

Some of the English translation equivalents could be given in the IPFV, e.g. (212) b: was listening to/ hearing, but since the use of the aspects differs in important ways between the two languages I have preferred to use the PFV when this seems an accurate translation and the less marked form in English.

5.1.2 Bounded versus unbounded.

The meaning changes caused by change of aspect on different classes of verbs can be attributed to the fact that accomplishments/ achievements, by definition, reach instantiation only at the end of the event trajectory. For states/activities, in contrast, any portion of the event trajectory is a valid
instantiation of the event (c.f. Langacker, 1982, discussed in 2.1). This
difference can be expressed in terms of boundedness; accomplishments/
achievements are bounded, states/activities are unbounded (cf. 2.3).

Processes are typically unbounded events seen before their completion
but PFV aspect denotes that the event trajectory of the process is complete.

{215}  *Négalona*  ke arhisa  na katelaveno  ton kosmo
grow-upPFVplts  and beginPFVplts  MA  understandPFVplts  DEF  world
trijiro  mou.  
around  me
*I was growing up and started to understand the world around me.*

{216}  *Négalose*  stin  Afrika.
grow-upPFVplts  in=DEF  Africa
He grew up in Africa.

In MGr the choice of aspect thus expresses different perceptions of the
boundedness of an event. The PFV forms in (216) and in the earlier examples
(208) a, (209) b and (210) a referred to bounded events, ones which are fully
instantiated in that their trajectories were complete. Example (215) as well as
(208) b, (209) a and (210) b, which are in the IPFV, refer to unbounded events at
any point of their (uncompleted) event trajectories. The bounded – unbounded
distinction seems to accurately characterize the FFV – IPFV opposition in Modern
Greek.

Two alternative views will be examined briefly before summarizing the
discussion.

5.1.3 Count/ mass-quantification.

The state/activity versus achievement/accomplishment dichotomy is seen
by Paprotte (1988) as an opposition between mass-quantified and count-
quantified events rather than as a boundedness opposition (cf. Langacker, 1987
in 2.1). The author draws a parallel between the Modern Greek PFV verbforms and
count nouns and IPFV verbforms and mass nouns (see also 2.1):
The qualitative distinctions which aspects may predicate of event situations are countability (divided reference, partivity) and "massiness" (cumulative reference, additivity), reducible to underlying perceptual and cognitive factors. \textit{(ibid: 457)}

It would seem that PFV situations are, through their boundedness, similar to countable nominals whereas IPFV situations are similar to mass nouns. Examples could be (215) and (216) above. The parallel with ‘massiness’ is much less obvious when the event is momentary, e.g. ‘hit’ in (217)–(218).

\begin{verbatim}
[217] Ktipises?
    hitPFVp2s
did you hurt (lit.: ‘hit’) yourself?

[218] Ktipouse to kefalli sto douvarii.
    hitI PFVp3s DEF head on DEF wall
He was hitting his head against the wall.
\end{verbatim}

The mass concept in (218) (also (219) below) is one of additivity and an appropriate image would be that of, for example, ‘rice’, which consists of discrete parts. However, it is also possible to have combinations of unboundedness and countability as in ‘many grains of rice’, where ‘many’ is unbounded in that it does not specify the number and ‘grains of rice’ are countable. In terms of events, ‘many grains of rice’ is equivalent to an open series. A parallel combination of boundedness and mass seems to be possible. In other words, bounded entities (e.g. ‘bags’) can contain mass; the boundedness then makes the entity (e.g. ‘bags of rice’) countable. I claim that the IPFV in Modern Greek denotes unboundedness, whether it be of mass-quantified situations such as states or count-quantified situations such as momentary events. I therefore suggest that the related but distinct notion of unbounded and bounded events, discussed above, is a more appropriate description for Modern Greek IPFV–PFV.
5.1.4 Interior structure.

Comrie (1976) defined IPFV meaning as denoting the ‘interior structure’ of events (see also 2.1). An example of that would be process verbs in the IPFV, as in (215) above. It might be asked whether ‘interior structure’ and ‘lack of reference to interior structure’ would not be better descriptions of the semantic content of the IPFV–PFV opposition than ‘unbounded’ versus ‘bounded. There are, however, disadvantages with Comrie’s terms. Although his characterization captures the fact that IPFV can present the event ‘from inside’ as it were, it is less satisfying the more statelike the situation referred to is. See for example (214) a, repeated here:

(214) a/ta vouna dhen femontan apo'ki
  DEF mountains NEG be-visibleIPFVp3p from+there
  the mountains were not visible from there

States, as in (214) a, differ from activities in that they are perceived as being homogeneous. Accepting homogeneity as a kind of structure would mean that ‘interior structure’, and therefore IPFV aspect, would denote very different things depending on the type of event referred to: states would be homogeneous, activities non–homogeneous.

Momentary events present another special case since they are not perceived as having extension and consequently lack interior structure. They cannot be viewed ‘from inside’. IPFV aspect on such events therefore implies iterativity, as illustrated by (218) above. A set of momentary events can be said to have structure but it, again, is very different from the homogeneous constituency of a state. (218) above and (220) below are examples of open (i.e. unbounded) sets of the momentary event ktipaq (‘hit’). Example (219) contains a closed set of events.

(219) Ktipisa ekato fores sto idhio meros.
  hitPFVp1s one-hundred times on+DEF same place
  I hurt (lit.: ‘hit’) myself in the same place a hundred times.
Although the event in (219) is repeated, it is expressed in the PFV to denote the boundedness of the series. In (220) the relevant event is habitual, i.e. despite the frequency adverbial ‘once’ it is part of an open set of events. Habitual events, like any iterated events in an unbounded series, are expressed by IPFV. On balance, it would seem that the characterization of IPFV as denoting ‘interior structure’ is less generally applicable, at least in Modern Greek, than the notion of unboundedness.

It should also be pointed out that the description of IPFV as referring to ‘interior structure’ would not explicate the use of this aspect for events POST R; the IPFV is used for future events in Modern Greek and this is also common crosslinguistically. In a sentence such as (221) the IPFV does not seem to make reference to the ‘interior structure’ of the event at all.

In order to maintain that the IPFV makes reference to ‘interior structure’ in cases such as (221) one would have to include the planning stage of the event. The IPFV could, perhaps, be said to refer to the interior structure of the planning stage which, however, does not resemble either the homogenous structure of states nor the non-homogenous one of open sets of events. Given that ‘interior structure’ seems to mean different things depending on the type of predicate and on the event time, it seems clear that the terms bounded–unbounded better describe the PFV–IPFV opposition.

Finally, there is support for this claim also in the relative markedness of aspects in relation to tense. Present events, i.e events AT S, can only be expressed by the IPFV in Modern Greek. The unmarked choice for past events, in contrast, is the PFV. This can be explicated by the inherent unboundedness of
present events as against the high probability of bounded, i.e. complete, past events.

5.1.5 Summary of the PFV–IPFV opposition.

The discussion up to this point is summarized in table 22:

<table>
<thead>
<tr>
<th>Verb meaning</th>
<th>PFV aspect</th>
<th>IPFV aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity, Process</td>
<td>complete B</td>
<td>in progress N</td>
</tr>
<tr>
<td>Transition</td>
<td>event 0</td>
<td>inception B</td>
</tr>
<tr>
<td>Momentary event</td>
<td>U</td>
<td>iterativity 0</td>
</tr>
<tr>
<td>Perception &amp; cognition</td>
<td>occurrence E</td>
<td>state D</td>
</tr>
<tr>
<td>Relational verbs</td>
<td>D</td>
<td>E</td>
</tr>
</tbody>
</table>

Table 22: The effect of aspect on verb meaning in Modern Greek.

In table 22, a distinction is made between PFV events which are ‘complete’ and PFV ‘occurrences’. The reason I have preferred to reserve the term ‘complete’ for the top four categories of predicates in the table is that the completeness of such events in the PFV is different in kind to that of occurrences:

(212) akousa fones
      hearPFVpl's voices
      I heard voices

(214) apo pou fanikes esi?
      from where be-visiblePFVpl's you
      where did you appear from?

(208) to tragoudhise sta italika
      OBJ singPFVpl's in+DEF Italian
      she sang it in Italian

(216) Megalose stin Afriki.
      grow-upPFVpl's in+DEF Africa
      He grew up in Africa.

The examples above, repeated here for convenience with their original numbering, illustrate the difference between complete events and occurrences. The occurrences in (212) and (214) do not imply that the hearing or the visibility have
ceased. (208) and (216), in contrast, do imply the end of the singing and the growing up, i.e. they predicate complete events. The common denominator for the occurrence and completeness meanings is boundedness as indicated in table 22. Regardless of whether what the verb describes has ceased or not, the PFV aspect presents it as bounded.

The description of the PFV–IPFV opposition in Modern Greek, summarized above, is fully compatible with the universal characterizations given in chapter 2 (2.6). However, going back to the representations of PFV and IPFV events as figures against grounds (2.4), it also becomes obvious that the characterization is not exhaustive:

<table>
<thead>
<tr>
<th>COINCIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PFV) [ [1 ] ]</td>
</tr>
</tbody>
</table>
| IPFV = = = = = = =  \\
| \text{unmarked for coincidence.} |

Fig.54 PFV – IPFV encoding of coincidence, shape and boundedness in Modern Greek.

Fig.54 illustrates not only the difference between the bounded PFV and the unbounded IPFV but also that IPFV event intervals have extension whereas no reference is made to extension by PFV aspect (see also 2.3). ‘Extension’ or ‘non-extension’ seems to motivate some speaker choices of aspect more than the boundedness distinction (see 5.7). Furthermore, this feature is important in so far as it explicates certain similarities between IPFV and the third aspect, PFCT, to be discussed below.

The bounded–unbounded dichotomy fails to explicate the presence of PFCT in the Modern Greek aspect system. One complicating factor is that PFCT aspect sometimes resembles PFV in referring to completed, and thus bounded events (cf. Paprotte, 1988:450). The bounded – unbounded distinction does consequently not explain how PFCT differs from PFV. In the following section, a
definition of the basic meanings of the three aspects, along the parameters of extension (i.e. shape) and coincidence will be shown to better explicate the three-way aspectual system (PFV – PFCT – IPFV) in Modern Greek.

5.2 Basic meanings of the three aspects in Modern Greek.

5.2.1 PFV meaning and the relationship of PFV events to R.

The boundedness meaning of the PFV aspect means that the events it refers to are seen as separate from other, surrounding events. It is also unmarked for extension and can thus not denote continuous events. The term *discreteness*, introduced in the universal definitions (see 2.3 & 2.6), in the sense of events being "separate, individually distinct, discontinuous" (COD 1976) is descriptive also of the basic meaning of Modern Greek PFV. This meaning, and thus PFV realization, can apply to single events, e.g. (222), individual events in an open series, e.g. (223), or to closed sets of occurrences, e.g. (224):

(222)  Eftasa stis pente.  
arrivalPFVplps onDEF five 
I arrived at five.

(223)  Otan i angli poune kati kratoune to logo tous.  
when DEF English sayPFVnp3p something holdIFFVnp3s DEF word theirs 
Whenever the English say something they keep their word.  
(Hesse, 1980:26, see discussion below)

(224)  Telefounise tris fores, ke dhen ti vrike spiti.  
televisionPFVps three times and NEG her findPFVps house 
He called her three times and did not find her (home).

‘Discreteness’ better describes PFV meaning than, for example, the term ‘punctual’ since it avoids the connotation of short duration:

(225)  Ezisa eki ikosi hronja.  
livePFVplps here twenty years 
I lived there for twenty years.

(226)  Katalava.  
understandPFVplps 
I understand.
(225) and (226) illustrate that the non-directionality of the PFV is not compatible with reference to the extension of events, i.e. PFV events may be of longer or shorter duration, but the aspect makes no reference to this fact. The event in (225) is of long duration, whereas the occurrence in (226) does not necessarily have any duration at all. In (225) the ‘living there’ is finished. In (226) the understanding is still going on as a state, which leads English speakers to choose present tense. As an occurrence (see table 22), the understanding is finished. The PFV aspect ignores the possible duration and presents both (225) and (226) as bounded events, their trajectories complete.

The relationship of PFV events to R is best defined in negative terms. It is one of events not necessarily AT R (see 2.3). This characterization is compatible with its use as the narrative tense par excellence. It was said in section 1.4.2 on tense, that an event cannot serve as its own point of reference. The first event in a narrative series of events is either accompanied by some other indication of past time reference (e.g. mia fora ke enan kero / once upon a time) or will be seen as related to S. This first event then becomes the point of reference for the following event, and so on. PFVp in Modern Greek is used in this manner to describe chronological series of events each establishing a point of reference for the next. Such events, of course, each occur at different times, i.e. not AT R. (The modification of this by ‘necessarily’ will be discussed further below.)

(227) piga (PFVpal) sto periptero ki agorasa (PFVpal) mia sokolata, jirisa (PFVpal), perifereia (PFVpal) alla dheka lepta.

I went to the kiosk and bought a bar of chocolate, I came back, (and) waited another ten minutes. (KT:137)

The point of reference for piga (‘went’) has been set in the previous discourse. Piga establishes a point of reference for agorasa (‘bought’) which establishes a point of reference for jirisa (‘came back’) etc. Since PFV denotes discreteness, each event is seen as separate and not overlapping with ‘surrounding’ events (see
discussion of difference between tense coincidence and aspect coincidence in 2.7.1).

Paprotte (1988) traces the sequencing function of PFV to a universal cognitive strategy:

**Iconicity Principle**
Utterances that follow each other in discourse denote successive event-situations, unless otherwise marked. *(ibid: 460)*

The principle is appealing, especially since PFVp in narratives seems to indicate successive events. One could then posit PFV as the 'unmarked' aspect in terms of the iconicity principle. Paprotte claims that "by far the most important morphological means of validating or invalidating the Iconicity Principle is aspect" *(ibid: 462)*. From that one might assume that one way of marking non-sequence is by PFCT or IPFV aspect. It has already been shown that IPFV can mark coincidence of two events (i.e., simultaneity) and that PFCT may stand for events PRE R. In some contexts, however, it becomes very difficult to define what 'otherwise marked' would mean. A case in point is the observation made by Paprotte himself that PFVp actually has a deictic, non-sequencing function (see also 2.5.1).

(228) ὄ ι ρ η τίς, χαρωμένος, ἄ μας στρώνσας; ὅ τις καὶ καταστίκει ἡ ἁγιονήσεως ἡ ἁγιονῇ (PFVp3s).<br>

Suddenly, the church bell could be heard. Its happy sound filled the air. It frightened and moved us. *(Paprotte, 1988: 467)*

The example text contains four events which, it can be inferred, are not sequenced but on the contrary, coincide in time. Based on the previous discussion one might expect the use of the IPFV when, in fact, the PFVp is used. Paprotte calls such cases 'temporal anaphora' and states that they are semantically and pragmatically like nominal anaphora *(ibid: 467)*. In other words, the events in the text above are presented as of equal importance as dots in a polka dot pattern, discrete and in no
particular sequence. It has not interested the narrator to emphasize the coincidence of events, or their duration, by the IPFV.

On the one hand then, Paprotté claims that events are interpreted as occurring in the order they are presented in the discourse, unless otherwise marked. The principal way of marking non-sequentiality is said to be aspect (presumably IPFV and PFCT). On the other hand, he points out that PFV does not necessarily imply sequentiality. The events in the text in (228) are in no way marked for a non-sequential reading. That the text is still so interpreted would seem to be due to our knowledge of the world. However, the Iconicity Principle works often enough to remain an interesting hypothesis. A weaker claim for MGr would be that the discreteness meaning of the PFV predisposes the listener towards an interpretation of discourse sequences of PFVp as representing temporally sequenced events, when such a reading is not in conflict with the listener's knowledge of the world.

The notion 'not AT R', represented by PFV aspect, is also compatible with future events. It explains the fact that PFVnp is the unmarked choice after the future particle THA as well as in subclauses or complements with future meaning (see 6.2).

(229) Tora tha sou dikhso ke tin alli opsi tou nomismatos!
now FUT you showPFV npls and DEF other aspect of coin
Now I will show you the other side of the coin too! (KT:71)

(230) Thelo na me stili ston andra mnu.
wantPFV npls MA we sendPFV np to+DEF man mine
I want you to send me to my husband. (KT:71)

The reason that the description of PFV events as 'not at R' has to be modified by 'necessarily' is that a PFV event can occur 'AT R' when the expression which sets the point of reference for the PFV verb has extension (see 2.7.1). This expression, be it a verb in the IPFV or a time adverbial, provides the setting within which the PFV event occurs.
That the time expressions in (231) a and b denote duration is fairly obvious. But even a very precise point in time like 'six o'clock', in c, must be said to have extension when occurring with a PFV event, since the complete trajectory of the event is seen as being instantiated at this time (cf. 2.1). In (231) c the event is discrete (PFV) and the time was six o'clock all throughout the event of signing. This contrasts with (232) below, where the event is IPFV, causing the same precise point in time ('at six') to be seen as just a point without extension.

(232) Stis eksi ipegrafe.
atDEF six signIPFVp3s
At six he was signing/ was about to sign.

A portion of the period containing the event is presented as coinciding with the point in time functioning as R. There is nothing to force the interpretation of 'at six' as having extension, since the event trajectory is not complete.

In summary, the meaning of the PFV aspect in Modern Greek is that of discrete events not necessarily AT R.

5.2.2 PFCT meaning and the relationship of PFCT events to R.

Paprotte (1988) seems to view PFCT as definitely bounded and as denoting non-extended events. He claims that PFCT never denotes progressive or iterative event-situations and is therefore close to the PFV (ibid:450). This view contrasts with the one put forward here and with Hedin (1987) who says that PFCT "is often used of repeated or accumulated situations". Examples (233) and (234) are from Hedin (1987:83):

(233) pente anthropi eboun pai gi os tora
five people drownPFCTnp3p until now
five people have drowned so far
Hedin found that PFCT was sometimes used in place of PFV to indicate a ‘broad perspective’, or what I would call ‘extension’, as in (233). (234), with the PFV aspect, would be a more likely choice if all five people had drowned at one time.

PFCT can be used in ‘broad perspective’ contexts whether the reference is to closed (bounded) or open (unbounded) sets of events, for example with adverbials such as polles fores (many times) or tri feres (three times). It seems to be extension and not the bounded – unbounded distinction which is relevant here.

Extended events can be bounded or unbounded, events which have no extension (or rather, which are presented as having no extension) are necessarily bounded (cf. 5.1.2). PFCT can be used in place of PFV in Modern Greek to present the event referred to as one having extension.

Both PFCT and IPFV (in contrast to PFV) refer to events within extended intervals. Events described by these aspects can therefore be seen as themselves having extension in time (see (233)), although this implication is not always present. Sometimes it is only the event interval which has extension, not the event:

(235) Pote kawia babiourusa dhen chi fotografithi sto fisiko tis never no 'babiousa' NEG photographPFCTap3s in+OEF natural its

perivalon.

environment

(T.29.12.88:64)

No babiourusa has ever been photographed in its natural environment.

(235) illustrates the stative meaning of PFCT. The state up to S, i.e. throughout the event interval, is one of no existing photographs of a certain kind.

The basic meaning of PFCT in Modern Greek cannot be either boundedness nor extension since it shares the former feature with PFV, the latter with IPFV. Nor can it be anteriority; this feature alone does not motivate a choice of non-obligatory PFCT over PFV. Rather, what may trigger PFCT aspect is that an event PRE R is seen as relevant at R. I shall use the established term current
relevance to denote this meaning (see 2.2), with two important caveats. First of all, it should be remembered that there are four points of reference in the system (e.g. fig.27). Current relevance can apply at any one of these four points and no other. Secondly, I view so called ‘experiential perfect’ (see (53–4) in 2.2) as expressing current relevance on the grounds that it is the fact that the experience is seen as being of relevance at R which leads to a choice of PFCT aspect.

The relationship of PFCT events to R can be described as follows. PFCT contrasts with IPFV in that it denotes events PRE R. Given that the aspect refers to an interval of time we can modify that to ‘up to R’. This ‘extension in time’ meaning of PFCT (see 2.3) leads some native speakers to accept interpretations of PFCT events as possibly continuing beyond R, when the context encourages such interpretation as in (236).

(236) Ehi parakolouthisi mathimata tahtika afti tin periodho.
attendPFCTnp3s lessons regularly this DEF period
She has attended lessons on a regular basis this semester.

It is rare for events to be coextensive with the period referred to by the PFCT, i.e. to continue up to R, but such an interpretation is possible in (236). Usually there is a time gap between the anterior event and R, as in (237).

(237) Iba kachelor isidhi mia kainourja shesi ke dhen me
startPFCTpl3s already ART new relationship and NEG me
endhiefere katholou ti ekane proin sizigos mou.
interestPFVp3s nothing what doIPFVp3s DEF former husband mine

I had already started a new relationship and was not interested in
what my ex-husband was doing. (J.3.2.88:47)

PFCT is however not used to denote ‘persistent situations’ (see (238), and (51) in 2.2) in Modern Greek. Such extended events are seen as coinciding centrally with R and are consequently encoded by the IPFV.

One reason why PFV and PFCT are often interchangeable not only in Modern Greek but in many languages that have this distinction, is that the PFCTnp and the [−DIST] PFVp have the meaning of anteriority to S (i.e. E+S) in common (see fig.27 in 2.7 or fig.56 in 4.2.2). The main difference between PFV and PFCT
is that the former does not refer to an extended event interval. The current relevance meaning of PFCT 'creates' such an interval by bridging the time gap from the event up to R. (For discourse factors motivating PFCT choice, see 5.3.3–4, 5.7.1)

In summary, the PFCT aspect in Modern Greek denotes current relevance of events in event intervals up to R.

5.2.3 IPFV meaning and the relationship of IPFV events to R.

Modern Greek IPFV has been said to be iterative and durative/progressive and to express coincidence of events (Mackridge, 1985:105). This means that it refers to an event in a period of time at least partially AT R. That is to say, if the period of time referred to by the IPFV is coextensive with the event, then at least a portion of the event will coincide with R. This is the case with present events, which by definition have some part of the event trajectory coinciding with S, their point of reference. For such events the only available realization in Modern Greek is IPFV. Habitual or otherwise iterated events are also seen as coinciding with R, or rather, the period in which the habitual events occur coincides with R.

(238)  Memo edho ikosi hronja tora.  

livelPFVNps here twenty years now  
I have lived here for twenty years now.

(239)  Kathe fora pou me singhizi, me trelen: o ponos tou  
each time that me harassIPFVNps me drive-andIPFVNps DEF pain of  
elkous. ulcer  

Each time she harasses me, my ulcer drives me mad.  (KT.:10)

(240)  Alla i B.S. ke S. (pou palja dhia miljondousan  
but DEF (name) and (name) who formerly NEG speakIPFVNsp  
enosan tis dhinases tous...  
uniteIPFVNsp DEF forces their  
But B.S. and S. (who used not to be on speaking terms) united  
forces...  (J.3.2.68:45)
Example (238) describes what has been called a ‘persistent situation’ (see 2.2, (51)). Since part of the event referred to coincides with its point of reference (S), it is expressed by IPFV in MGr. Example (239) refers to iterated events and the period in which they occur coincides with R. It is worth noting that no individual occurrence of the events referred to need coincide with R. A past habitual event is illustrated by example (240). The (series of) events referred to in (238)–(240) are coextensive with the periods of time in which they are placed.

The IPFV can also refer to events later than R. In this case the period of time referred to by the IPFV is not coextensive with the event. Only the beginning of the event interval and no portion of the event itself coincides with R.

(241)  
Frego!  
leaveIPFVapls  
I am leaving!

The utterance in (241) could be appropriately said in roughly the same situations as the English: “Well, I’m off then!” (cf. (293) in 5.6.1).

The time gap between the beginning of a future event and the point of reference can be ‘bridged’ by, for example, a plan or intention existing at R. This gives the future event a ‘current relevance’ parallel to that often claimed for PFCT events (see further below). To avoid confusion, however, I shall use the term ‘continuity’ to characterize the aspecual meaning of Modern Greek IPFV. It should be noted that this term will be used to include habitual meaning (cf. fig. 11 and Comrie, 1976:25). IPFV is thus said to denote continuity of events in intervals AT R and beyond. Continuity contrasts with discreteness in that the former necessarily has extension while the latter does not.
5.2.4 Conclusion and summary of the basic meanings of the Modern Greek aspects.

The language specific characterizations of the aspects arrived at in 5.2.1–3 can now be shown to be compatible with the universal ones presented in chapter 2. Fig.23 is repeated here for convenience (from 2.5).

<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>NON-CENTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFVT (x)</td>
<td>PFCT</td>
</tr>
<tr>
<td>IPPV ---------</td>
<td>IPPV</td>
</tr>
</tbody>
</table>

\(^1\) Unmarked for coincidence, see discussion below.

Fig.23 (From 2.5) Aspectual encodings of coincidence, shape and directionality.

In chapter 2, the aspects were said to denote central or non-central coincidence, shape (extension or no extension), and as a consequence of the former two notions, directionality of the event interval in relation to the ground. This is summarized in fig.23, repeated above. The figure makes it apparent why PFCT aspect is often understood to denote bounded events: PFCT events will mostly be understood to end before or at $R$ since the PFCT refers to an event interval up to $R$. This ‘goal orientation’ (see 2.4, fig.19) also means that events PRE R are understood to have some relevance at $R$. In Modern Greek it is current relevance which creates the extended interval from PRE R to R. The IPPV event interval, in contrast to the PFCT, is not bounded at the end. It is ‘source oriented’ (see 2.4, fig.19). It can therefore refer to event intervals which continue POST R. Hence its use for future events.

Although the language specific meanings posited for Modern Greek are not fully predictable from the universal meanings, the discussion shows that the former are compatible with the latter. The following basic aspectual meanings have been determined for Modern Greek:
A comparison with English will illustrate the implications of table 23.

Whereas Modern Greek IPFV denotes ‘continuity’ English IPFV denotes ‘progressivity’. The former requires no input of energy and thus comprises states and habits. Progressivity on the other hand implies that a continuation of the event requires input of energy and so does not comprise states or habits.

(242) Kaporizis?
smokeIPPVnp2s
Do you smoke (IPPVnp)? (= Are you a smoker?)
*Are you smoking (IPPVnp)? (= Are you a smoker?)

States and habits, as in (242), are usually referred to by PFV aspect in English and so the characterization ‘discrete’, used for Modern Greek PFV, would not be descriptive of the English PFV.

The English PFCT, finally, has a much stronger connotation of an event interval continuing ‘beyond R’ than does PFCT in Modern Greek. Consequently, English PFCT can denote ‘persistent situations’. Example (234) is repeated here:

(234) I have lived (PFCTnp) here for 20 years (and I still live here).
Meno (IPPVnpis) edho 20 hronia.
*Eho mini (PFCTnpis) edho ikosi hronia.

Limitations of space do not allow for a thorough discussion of English aspect. Another brief comparison will however be presented in 5.9.

MGr aspectual meanings can also be summarized as in the figure below, which takes into account both the relationship of the event interval to R (and thereby directionality) and the characteristics of that interval.
Fig. 55 The basic meanings of the aspects in Modern Greek.

The directionality of the aspects is here indicated by the retrospective and prospective arrows for PFCT and IPFV (see 2.5). The relationship of the aspects to R becomes clear if a vertical line is drawn from the point of reference (*) through the point where PFCT and PFV meet. The IPFV arrow illustrates that the period referred to stretches from before R and into the future. The PFCT arrow shows the period referred to as extending from before R up to R. Although some native speakers of MGr will accept interpretations of examples like (236) as referring to events which continue beyond R, i.e. incomplete events, this is at most an implicature.

Events which occur in a period beginning before R and continuing into the future can sometimes optionally be referred to by either PFCT or IPFV. The choice seems to be one of whether or not the event period is seen as complete just prior to R or as including R. Such events are represented in fig. 54 by the meeting of the prospective and retrospective arrows.

(243) Ωίλοισαν τo pehnidhe ta mesanihta; (go dissolve PFVlp DEF game DEF midnight !
| kerdhisa {IPFVp},          o Petros | shane {IPFVp} |
| iha kerdisi {PFCTp}         | ihe hasi {PFCTp} |

We broke up the game at midnight; I had been winning, Petros had been losing. (Tz. 1953)

In the translation equivalent of (243) I have used the PFCT–IPFV, a choice which is not available in the Modern Greek system. English also has the option of using either IPFV or PFCT, as in Modern Greek.
One reason why it is sometimes difficult to determine aspectual meanings is that meanings and ‘typical’ realizations (meaning and form) do not show a perfect one to one match. In both Modern Greek and English, PFCT is restricted to expressing PFCT aspectual meaning only when its point of reference is S. In all other cases its meaning of anteriority allows it to fill both PFCT and PFV slots. This can be seen in the figure below of realizations of aspectual meanings.

Fig. 56 The Four Module TMA System (with Modern Greek realizations).

In fig. 56, capitals are used for aspectually least marked forms encoding events AT either of the four points of reference. Forms in parentheses are those which fulfill aspectral functions typically associated with another aspect. In the [-DIST] [-SUBJ] paradigm, for example, the IPFV form grafo is the only one which may denote events AT R; the aspectual distinction between PFV and IPFV has been neutralized.

[+DIST][−SUBJ] future, or ‘future in past’, can only be expressed by an IPFV form (thagrafa ‘was going to/ would write’) whether the event is discrete or
continuous. The PFV form (\textit{the egrapsa} 'might write/ have written') always has [+SUBJ], epistemic modal meaning (to be discussed further in chapter 6).

I have attempted to give the reader a general idea of MGr aspects; what they mean and how they are realized. The more in-depth analysis of different uses which follows will make frequent reference to the concepts introduced here and to the figures. It will be shown that, although aspectual meanings interact with other variables (e.g. tense, modality, subordination, finiteness), their basic semantic characteristics are constant.

5.3 Some uses of the PFCT in Modern Greek.

5.3.1 PFCT and current relevance.

PFCT differs from the other aspects in that it always contains the meaning element ‘PRE R’ (anteriority). It is quite common in languages that this element becomes more salient than other components until the PFCT finally exists in free variation with PFVp or supplants it (Bybee & Dahl, 1969). In Modern Greek, however, there is a meaning difference between PFCT and PFV. Although some speakers use PFCT more than others the variation is not purely stylistic or idiolectal. I shall attempt to determine some of the factors which may predispose speakers towards this aspect.

The basic meaning of PFCT in Modern Greek is, as we have seen, current relevance in the sense of ‘relevance at the point of reference’. Subtypes are ‘experiential’ and ‘resultative’ PFCT (see 2.2). PFCT aspectual meaning combines reference to two points in time, one PRE R, the other R itself.

The unmarked choice for events PRE S (i.e when S=R) in Modern Greek is the PFV but PFCTnp may be used to underscore current relevance.

\begin{verbatim}
(244) Idhi efga.
    already eatPFV
already ate.
\end{verbatim}
The above examples (244)–(245) could be uttered by the same speaker, the first as a simple statement of fact, the second (possibly in an irritated tone of voice) as a further clarification when the listener seems not to have received the message.

Hedin (1987) found that with the expression 'idhi' (already) PFCT aspect was very frequent. Nevertheless, the time expression does not automatically trigger PFCT aspect. Generally speaking, PFCT seems to be preferred only when current relevance is not sufficiently indicated by the context. The judgement, whether or not it is a subjective one, is made by the speaker. The constraint on PFCT for current relevance can be formulated as follows:

**CR constraint:**
PFCT is used when an anterior event is seen as having relevance at R if such relevance is not deemed to be sufficiently clearly indicated by the surrounding discourse or the discourse situation.

The claim that PFCT in Modern Greek is subject to discourse constraints rather than being syntactically conditioned finds support, albeit of a negative nature, in the failure of Hedin (1987) to reach any conclusions, beyond a description of PFCT meaning, as to what conditions the acceptability of PFCTnp in place of PFVp in any particular utterance. Hedin used a sentence-based test to assess the degree of substitutability of PFCT for PFV and vice versa (ibid: 97–126). The 146 native speaker informants were asked if it was possible to replace the PFCTnp by PFVp and PFVp by PFCTnp. They were also asked to indicate if the substitution altered the meaning or not, but the responses to this latter question turned out to be unreliable, possibly because of problems with the test design. The test sentences were split into two roughly equal sets so that each informant assessed half of the sentences, which were 59 in total.

Substitutability ranged from 2 to 80 percent. The lowest figure was for a PFV form which was deemed equivalent to a PFCTnp by only 2%. The highest value
indicated that another PFVp was replaceable by PFCTnp in the opinion of 80% of the speakers. 22 out of the 59 test sentences received substitutability values between 40 and 60 percent.

The test failed to contribute any new or more precise insights into the use of PFCT but the results seemed consistent with what Hedin had already concluded, namely that the Modern Greek PFCT has a ‘stative’ and an ‘experiential’ function (ibid:108). (PFCT for result would be stative in Hedin’s terminology.) She also concluded that PFCT in MGr is not used to denote recent past; a point to which we shall have cause to return later. The final question, however, remains largely unanswered. Why do substitutability values vary and vary so widely? A sentence based test would not provide a context wide or specific enough for discourse constraints to be discernable. Thus, if the constraints were discourse related, the tests would not enable Hedin to answer the question.

Keeping this in mind, it is still interesting to look at a couple of the sentences which were deemed most favourable for PFCTnp.

(246) Kania fora otan eho kimithi arga dhen bs:pla µono mou. Some time when sleepPFCTnpis late NEG wakePFVnp alone myself Sometimes when I’ve gone to sleep late I can’t wake up by myself (ibid:118, 5% substitutability)

(247) I khili tis ine peloria ke dhen choon tin paraikiri DEF stomach hers is enormous and NEG havePFVnp3s DEF least

amfivolia oti th’apothisoun dhithima. Agorasan kious doubt that FUT obtainPFVnp3p twins begPFVnp3p even

paneries, vrakxia, salieres, laskies k’ena karotsaki vamneno nappies underpants bibs swaddling and+ART pram painted

oe ta ethnika mas hromata - aspro ke galazio. with DEF national our colours white and blue

Her stomach is enormous and they haven't the faintest doubt that they will have twins. They even/ already bought nappies, underpants, bibs, swaddling cloths and a pram painted in our national colours - white and blue.

(my translation, example ibid:123, 80% substitutability)

The PFCTnp was highly favoured in both these test examples. Only 5 percent thought that a PFVp would be acceptable in (246) and 80 percent would accept
PFCTnp in place of PFVp in (247). If the PFV were chosen in (246), it would seem to indicate simply the first event in a series of two events rather than the cause of the second event. The informants seemed to deem it necessary that the current relevance of the first event be made explicit by a FFCT form. The following example, (247), is one of the few in the test that consists of more than one sentence. The original text uses the PFVp form (agorasan ‘bought’), but the great majority of informants would be happy to see PFCTnp (ehoun agorasi ‘have bought’) instead.

It might seem that ‘already’ would be sufficient indication of current relevance, and this was perhaps the feeling of its author. However, the tone is light-hearted and the list seems to be not only a factual enumeration of purchases but intended to evoke a picture of the result of those purchases. A speaker who wanted to emphasize the result at the point of reference would most likely choose the PFCTnp form. Unfortunately, as Hedin points out, the test tells us nothing about the actual speech habits of the informants, only what they would accept from other speakers.

An example of PFCTnp for current relevance of the ‘resultative’ kind is to be found in the following text, from a women’s weekly, about an otherwise kind and intelligent divorced woman who mistreats her child by not picking her up when she has promised to:


The only explanation is that she is now doing something which she (herself) has undergone (=underwent), helplessly, when she was a child. Who knows how unbearably they had let (=let) her wait, while the hours seemed never ending eternities. We don’t know exactly what happened. (J.3.2.88:30)

(248), referred to below as The Neglected Child Text, sets out to explain the present behaviour of a certain individual based on her past experiences. These
experiences, it is suggested, have an effect in the present. Their resultative nature is encoded by the PFCTnp (chi ipomini ‘has undergone’) which links the past event with S, the point of reference.

5.3.2 PFCT and reference time.

PFCT forms have some functions more closely related to tense than to aspect. This is explained by the fact that PFCTp and PFCTnp are, as we have seen, members of [+DIST] and [-DIST] paradigms respectively, i.e. they are unambiguously past versus non-past. PFVp, in contrast, can be either plus or minus DISTant (see fig. 52 in 4.2.2). A diagram of The Neglected Child Text illustrates the functions of the different forms:

```
6. S
  5 EmiAzan
   (seemed)
  4 Kseri
   (knows)
  3 Uhan afisi
   (had left)
  2 Chi ipomini
   (has undergone)
  1%ana
   (is doing)
  S
```

1. non-past ref.
2. current relevance at S/ result/ SHIFT
3. anterior with non-past ref./ setting of past ref.
4. comment/ gen. time
5. past with past reference.
6. continuation of past reference/ extended event.

Fig. 57 Text analysis of the ‘Neglected Child Text’.

The ‘story line’ is made up of the events in the left column. Event 3 is past, but since it is denoted by a PFVp form its time reference is not unambiguous. In event 5, in contrast, the PFCTp is used to make explicit the shift to a past time cut off from the present. This encoding firmly anchors the following PFVp event (6) in the past, despite a prior incursion into the present (event 4) to express personal
comments on the content. It is doubtful if any current relevance meaning can be ascribed to the PFCTp in 5. We will return to this particular case in 5.3.3.

The use of PFCT to disambiguate time reference is not restricted to PFCTp. PFCTnp is used in the same way to signal unambiguously non-past reference (see also (322) and discussion). A second constraint on PFCT can now be formulated.

**Point of Reference Constraint (MGr PFCT):**
PFCT is used to unambiguously denote the reference time of an anterior event if such reference is not deemed to be sufficiently clearly indicated by the surrounding discourse or the discourse situation.

The constraint does not impinge on the aspectual meaning of PFCT. It merely states that PFCT is used instead of PFVp to clarify whether the proposition has past or non-past reference. It is to be expected that sometimes more than one factor contributes to tipping the balance in favour of PFCTp. In the case just discussed, one such additional factor might be the 'extension' meaning of PFCT aspect. The fact that the child is portrayed as having waited a long time may have contributed to the choice of PFCT (see also (237) and discussion). In my view, it would not be a true description of how the language operates to try and pin down one single determining factor to the exclusion of all others. Here the tense and aspect functions of the PFCT seem to go hand in hand.

In fact, the Point of Reference constraint and the Current Relevance constraint formulated earlier are very similar in function, although the former applies to aspect, the latter to tense. The effect of both constraints is, in a sense, the same: to make the relationship of the event to its point of reference 'sufficiently clear'. When applied to tense this means clarifying which the point of reference is, from the aspect point of view it means clarifying that the event is of relevance at that point.
5.3.3 *The absolute PFCT.*

The discussion in 5.3.2 has made it clear that not all instances of PFCT aspect are motivated by its aspectual, current relevance meaning; it also has tense functions. The PFCTp form *iian afisi* ('had left') in (248) was said to denote [+DIST] reference. More surprising about this particular example is perhaps the fact that it cannot be seen as denoting anteriority or current relevance to a past point of reference. In fact, it can only denote anteriority to S.

In other words, I am claiming that Modern Greek has an *absolute use of PFCTp.* Hedin (1987) has made the same claim. I shall elaborate here on Hedin’s analysis to show how the absolute PFCT fits into the overall Modern Greek aspect system.

In her investigation into the use of PFCT in Modern Greek, Hedin distinguishes between narrative and non-narrative tenses. Her description is based on Bull (1963) and is therefore in important ways close to the one proposed here. Hedin posits an *absolute* PFCTp, in addition to the relative PFCTp. That is to say, she claims that Modern Greek uses PFCTp for events prior to S without an intermediate past point of reference. (249) below is given by Hedin as an example of this use. The context is that of a poor man having won a large sum of money.

(249) Allostè, prin, pios ton ihe rotisi an ihe dhiskolies ke besides before who OBW askPFCTp3s if haveIPPVp3s difficulties and zouse dhistihsimen. liveIPPVp3s unhappily

Besides, before (that), who had asked him if he had problems and lived unhappy. *(ibid:27)*

Although my own analysis confirms Hedin’s claim that there is an absolute use of the PFCTp the example, it seems to me, is not well chosen. The time expression *prin* (‘before’) must clearly be understood as ‘before that event which is retrievable from the context’, or more specifically ‘before he won’. *Prin* thus refers back to an event at a past point of reference to which the PFCTp event is anterior. The PFCTp
in this example is therefore not immediately related to S. Better examples of the absolute PFCTp are the PFCTp in the "Neglected Child Text" analyzed in 5.3.2 and also the following:

(250) Φετος πλιτούμε. Περσι ιθαμε περασι τοσο ορες this-year be-boredIPFVmplp last-year passPFCTmplp much beautiful
meres mazi.
days together

This year we are bored. Last year we had spent (= spent) such wonderful days together. (Hesse 1980:45)

(251) Πριν απο 15-20 μερες ιθα παρι to metro apo to Ναρούσι... before from 15-20 days takePFCTmpls DEF metro from DEF (name)
15-20 days ago I took (lit. 'had taken') the metro from Ναρούσι...

(He din 1987:28)

In (250), the PFCTp form ιθαμε περασι refers to an event anterior to a point of reference. To try and ascribe a current relevance meaning to this use of PFCT would be stretching the point. The point of reference is the speaker’s now (S) and not a past event or time. The PFCTp ιθαμε περασι (‘had spent’) does not refer to an event prior to ‘last year’, but simply to a past event.

This use can be explained by the concept of ‘temporal borderlines’ introduced by Hedin. Such borderlines define the border between what has in this thesis been called [+DIST] and [-DIST]. The absolute PFCTp, she claims, is used to denote an event on the remote side of a temporal borderline. The borderline concept is, however, considered problematic since, it is said, ‘no temporal borderline can be defined’ in examples such as (251) above. As the analysis below will show this is false. A borderline which explains the use of PFCTp can be defined for both (250) and (251).

In the examples the borderlines are set by the time expressions ‘last year’ and ‘15–20 days ago’ respectively. The borderline part of the period named by the time expression ‘last year’ is that end which is nearest to S. ‘15–20 days ago’ can be glossed ‘15–20 days before now’, again setting a borderline between the past and the present. As was said above, PFCTp in these examples denotes anteriority
to S, not to the borderline nor to any past point. The event does not have to be at any distance prior to the borderline but it is definitely considered to be on the remote side. The PFCTp event is thus seen as located within a past time frame implied by the existence of a borderline between past and present.

The borderline explanation is especially attractive since it rules out two alternative but deficient explanations: current relevance and remoteness. It shows that the PFCTp as it is used in (251) does not denote current relevance at S (its point of reference) since the past is seen as a period cut off from S, on the other side of a borderline. It also rules out a remoteness interpretation, at least in any absolute sense. The sense of remoteness which sometimes accompanies the form is not an inherent feature of PFCTp but derives from its unambiguous status as [+DIST]. The situation is parallel to that of PFCTnp, sometimes said to denote ‘recent past’. PFCTnp is unambiguously non-past, [−DIST], i.e. it always denotes events relative to S. This is certainly compatible with ‘recent past’, and it can therefore be used in this function in some languages (albeit not in Modern Greek). Nevertheless, neither the nearness meaning of PFCTnp nor the remoteness interpretation of PFCTp are inherent in PFCT aspect. Rather, they are a consequence of the particular positions of the forms in the tense system.

In the following section I shall further clarify some of the meanings realized by Perfect forms in Modern Greek via a comparison with English. Rules for (encoder/decoder) access to PFCT forms will subsequently be formulated.

5.3.4 Some differences in the use of PFCT in Modern Greek and English.

Hedin speculates as to why the PFCTp is sometimes used to mark past reference. She concludes that since the PFVp is a member of both past and non-past paradigms its ‘expressional power’ has been diminished and so it is sometimes replaced by the unambiguous PFCTp. This raises the question why the same use is not evident in English where the identical distribution of forms seems
to hold. The comparison of Modern Greek and English below will show that the
distribution does in fact differ slightly and that there are also differences in terms
of (encoder/ decoder) access to the paradigms.

Basic to this argument is the fact that the PFCTp in English always denotes
events PRE a past point of reference.

Fig. 58  The PFCTp and the PFVp in the Erg. system.

Fig. 58 shows that the PFCTp is always [+DIST] and that it always denotes
anteriority, within that paradigm in English. The distinction between current
relevance, i.e. PFCT aspeuntal meaning, and 'pure' anterior is often impossible to
make. What concerns us here is in what way the English PFCTp differs from the
Greek equivalent in its relationship to the point of reference.

Compare the two examples below which are both acceptable English
utterances given the right context:

(252)  two weeks ago I was working (IPFVp) very hard
(253)  two weeks ago I had worked (PFCTp) very hard

In (252) any point of time within the time frame 'two weeks ago' is an acceptable
past point of reference at which the event is seen as ongoing. In (253), in contrast,
if a time within two weeks ago is seen as the point of reference then this point is
left 'empty' since the PFCTp event must be seen as anterior to its point of
reference. Nothing is thus predicated about the point of reference itself in (253). It
is simply implied by two weeks ago. (Notice that two weeks ago I had (already)
finished, where a state is predicated at the point of reference, is at right. ) The
PFCTp would have current relevance meaning at its implied point of reference. An
acceptable context for (253) would need to contain another past event AT the point
of reference implied by the time expression, to which the PFCTp was anterior. No
such past context is needed for (252), as seen in the examples below.

(254)  -You're a lazy sod, you are!
- Come on! There's nothing to be done just now. Besides, two weeks
ago I had worked (IPFVp) very hard.
   was working (PFCTp)

(255)  - You're looking much better now than when I saw you two weeks ago.
- Yeah! I had worked (PFCTp) very hard and it really got to me.
   was working (IPFVp)

In (254) the PFCTp is unacceptable, or at least very difficult to contextualize, since
there is no point to which the PFCTp could be anterior. The IPFV can be used since
all it needs is the positing of a point or period with which it is seen to be coinciding.
This is provided by the time expression. In the second example, a past point (when I
saw you) is mentioned to which the now permissible PFCTp is seen as anterior and
with current relevance. (The PFCT–IPFVp, had been working might be preferred,
depending on the context.)

PFCTp in English thus requires not only the setting of a past time frame but
the predication of a past point to which it is anterior. This point can, but need not
be, set by a past event. In Modern Greek the situation is different. A direct
translation of (252) with PFCTp is not necessarily interpreted as denoting an event
PRE another past point. The PFCTp can by itself denote a past point, as long as a
past time frame has been set.

This means that in English the PFCTp can only denote events anterior to
another past point of reference. In Modern Greek the same meaning as in English
is available, but in addition, the PFCTp can also denote simply an event within a
past time frame. Hence, the difference between English and Modern Greek is that
the Modern Greek speaker has access to the PFCTp via a past time frame
whereas the English speaker must access PFCTp via a past point of reference.
These past frames or points/ events can be explicit or understood, but would in any case be retrievable from the context.

The MGrs PFCTp can now be described graphically by allocating PFCT realizations to the model:

![Diagram]

Fig. 59 The PFCTp and the PFVp in the MGrs system.

Fig. 59 is a modified version of earlier figures (e.g. 50, 52). It can be compared with fig. 58 for English. It shows the PFCTp (in bold) as realizing the meanings: current relevance, PRE R sequence and, finally, [+DIST] point of reference where it alternates with PFVp (egrapsa). No aspeutcal meaning need distinguish PFCTp in this latter use from the PFVp. The main difference between the forms is that PFCTp is always, unambiguously [+DIST].

The PFCTnp form (echo grapsi) is also included in the figure. It realizes the meaning ‘current relevance’ at S only. In other words, the PFCTnp is always and unambiguously [-DIST]. This has major bearing on the discourse constraints on PFCT, discussed earlier.

Speaker access to the PFVp and PFCTp in MGrs and English, respectively, can now be summarized. For Modern Greek, from a generation point of view, the following constraints can be formulated.
ACCESS CONSTRAINT (Modern Greek PFTp and PFVp):

A. If a past time frame is retrievable from context, then the speaker has access to either PFVp or PFCTp to realize an event within that time frame.

B. If a past reference point is retrievable from context then the speaker has access to PFCTp to realize an event anterior to that point.

(A past reference point implies a past time frame but not the reverse.)

From a parsing point of view it can be said that PFCTp and PFVp differ in what they imply:

PARSING CONSTRAINT (Modern Greek PFTp and PFVp):

A. The PFCTp implies that either a past reference point or a past time frame is retrievable from the context.

B. The PFVp implies that a past reference point may be retrievable from context (or else it is directly related to S).

The exact relationship of the predicated event to R or the past time frame will be compatible with the aspect but need not be specified here.

Only the A constraints differ between Modern Greek and English. In English, access constraint A differs in that if a past time frame (but not a past reference point) is retrievable from context then the speaker has access only to PFVp to realize an event within that time frame. PFCTp is ruled out since it always denotes events anterior to a past point in English. The implications for parsing differ in the same manner so that, in B, the PFCTp implies that a past reference point is definitely retrievable from context (not just a past time frame).

The difference between English and Modern Greek just described can be seen in the "Neglected Child Text", repeated here for convenience.
(248) I moni ektigisi ine oti kani (IPFVnp) kí aftí tora kati pou ehi ipomini (PFCTnp) pathitika otan itan (IPFVp) mikri. Pios kseri (IPFVnp) poso martirika tin ihan afisi (PFCTp) tin idhia na perimén, otan i ores emiazan (IPFVp) ntelioti eones. Othen kseroume (IPFVnp) alirovos ti ejine.  

The only explanation is that she is now doing something which she herself has undergone (=underwent), helplessly, when she was a child. Who knows how unbearably they had let (=let) her wait, while the hours seemed never ending eternities. We don't know exactly what happened.

The PFCTp (ihan afisi) is permissible in the Modern Greek text as an event within the past frame when she was a child. The speaker had access to PFVp and PFCTp to express this event but preferred the latter for reasons discussed above (5.3.2). PFCTp is not permissible in the English translation since a past point of reference to which the PFCTp event could be seen as anterior is not retrievable. The English speaker would have access only to PFVp to express this event.

The other PFCT form in this text, ehi ipomini, is another example of a Modern Greek PFCT where English would use PFVp. This time the event is seen as directly related to the moment of speech and the non-past PFCT has therefore been chosen. In the English translation, PFCTnp is inimpossible with the temporal clause when she was a child. This constraint on English PFCTnp can be formulated as a blocking rule:

ACCESS CONSTRAINT (English PFCTnp):
If a past time frame is retrievable from context, then the speaker does not have access to PFCTnp to realize an event within that time frame.

PARSING CONSTRAINT (English PFCTnp):
PFCTnp implies that the event did not occur within any past time frame retrievable from the context.

In Modern Greek there are no such constraints on the PFCTnp. It is constantly available to denote current relevance at the reference point S, the only reference point which is always retrievable as part of the discourse situation. It does not matter if the event occurred in a specified past time frame or not. This accounts for the differences in Modern Greek and English realizations exemplified below.
(256) a/Jenithika to 1946.
   be-bornPFVp1s DEF 1946
   Eho jenithi
   be-bornPFCTnp
I was born in 1946.  
   *have been born

(257) a/Simfona me apolita aksiopistes piges, i epitropi afti
   according with absolutely reliable sources DEF committee this
   sisistathke (PFVp3s)
   ehi sisisthi (PFCTnp3s)
form......................here and eleven about months
   (Hedin, 1987:120)
According to absolutely reliable sources, this committee
   was formed about eleven months ago.
   *has been formed

(256) appears in Mackridge (1985) in its PFCT form, but the PFVp would be at
least as common. According to the author, PFCTnp is far more common in
conversational speech than in e.g. written narrative, due to the fact that it stresses
the present result of the anterior event. An example of PFCTnp in a typically written
genre, the newspaper report, is given in (257) which appears, in its PFCTnp form,
as one of Hedin’s test items (Hedin, 1987:120). The PFVp is an acceptable
alternative to 38% of her informants. The expression edho ke + time period
translates as both ‘time period + ago’, i.e. a past point in time, in which case the
PFCTnp is not permissible in English, but also as ‘for + time period’, i.e. a period
up to and including S, which does allow PFCTnp in English.

By looking at both the tense and aspect functions of Modern Greek PFCT
in context and by considering both parsing and generating, 5.2.2–3 have
attempted to map some of the factors which motivate PFCT encodings. As the
analysis has shown, tense and aspect uses of PFCT are not easily distinguishable.
Nevertheless, both need to be understood since either one or a combination of
both can trigger PFCT encoding. Yet another factor, ‘stage setting’, will be
discussed under discourse functions in 5.7.
5.4 Discreteness versus extension/continuity.

This section will deal in general with uses which reflect the underlying discreteness and extension meanings of the aspects. It will do this by contrasting different aspectual encodings. In later sections (5.5.-7) the focus of the analysis will be on specific uses of each of the aspects.

The IPFV denotes a number of non-factual notions such as potentiality (see 5.6.2) and ‘inception’ (see (210) in 5.1.1). The latter term refers to the notion of an event trajectory which is at its beginning. The IPFV does not refer to the beginning as an occurrence, but to the event which has begun and which is ongoing at the time of reference. The notions of inception and potentiality differ in that a potential event may never actually begin. Or the other hand, an event which has begun may never reach full instantiation and is in this sense only a potential event. It is also common in languages that events which are just plans, intentions etc. are treated as if they were ongoing at the point of reference, i.e. as if they had already begun. This is illustrated below by examples from Swedish.

(258) Don holl ju på att klättra, upp och ner, hela dag'n!
      they keep+PAST but on to climb up and down all day+DEF
      But they kept climbing/ were climbing up and down all day.

(259) Jag holl på att tala om det för dej, men se'n åmgrade jag
      I keep+PAST on to tell about it for you but then regret I
      mej.
      myself
      I was about to tell you, but then I changed my mind.

In Swedish, which has no IPFV aspect marking on verbs, IPFV meaning is conveyed in a number of other ways. One is the expression hälla på (literally ‘keep on’) followed by an infinitive. This IPFV marker denotes both events which are ongoing AT R, as in (258), and events which are only potential, as in (259). It cannot be used simply as a future marker and so would not be permissible in a translation of, for example, He will be forty-eight in November. In (259), its use is explained by the fact that the intention is regarded as the beginning of the event.
Where an event begins is thus a subjective notion and the borderline between inceptive and potential is less clear than is usually assumed.

Both inception and potentiality relate to incomplete events, denoted by the unbounded IPFV in Modern Greek. In this category are included also future events which are planned or intended.

(260) Ebino to nero dhen pinotane.  
That DEF water NEG drinkIPFVp3s  
That water was undrinkable.  

(Mackridge, 1985:127)

(261) Erhouna alla dhen iha ti dhiefninsi sou.  
comeIPFVp1s but NEG haveIPFVp1s DEF address yours  
I was going to come but I didn’t have your address.

(260) describes the state of the water in a potential sense, and says nothing about whether anybody actually tried to drink it. The event in (261) never actually took place. However, it was begun in the sense that the intention was there. The person might even have put on her coat to go before discovering that she did not have the address.

(262) I nea jineka,..., arhise na chi imikranies ton  
DEF young woman startIPFVp3s NA haveIPFVp3s migraines DEF  

perasmeno Septemvrio. Otan arhizan itan toso odhinires,  
past September when startIPFVp3p beIPFVp3p so strong  

pou ehane tin orasi tis,  
that loseIPFVp3s DEF sight hers  

The young woman,..., started having headaches last September. When they (first) started they were so bad, that she used to lose her vision.  

(J 3.2.86:34)

(262) contains the verb ‘begin’ used in the PFV for a complete event (arhise) and in the IPFV for inception (arhize). The latter is a clear case of a beginning phase being treated as a period with some extension, rather than as a point. It presents the beginning period as existing rather than as occurring. The last verb (ehane) could be translated as either ‘was about to lose’ or ‘used to lose’. The context, and certain knowledge of the world, points in the direction of the habitual interpretation.
Examples (263) and (264) show the IPFV after phasal predicates. Events which can be divided into beginning, middle and end must have extension, so the IPFV is the natural choice after phasal verbs.

(263) Antitheta, i alli pringkipisa tou Monako, i Karolina dhen contrary DEF other princess of [name] DEF [name] NEG stamatisi na jennai. stopPFVp3s NA give-birthIPFVnpi3s

On the contrary, the other princess of Monaco, Caroline, didn’t stop giving birth. (T 29.12.88:41)

(264) Sto Belfast, sti dhiarkia kidhias trion melon tou in+DEF [name] in+DEF duration funeral three+POSS members of IRA,..., enas protestandis arhise na pirovoli 'kata (name) ART protestant beginPFVp3s NA shootIPFVnpi3s by woulisi'.

wolition

In Belfast, during the funeral of three IRA members,..., a protestant started shooting at random. (T 29.12.88:46)

The potential, the inceptive and planned or intended future events are all compatible with the unbounded extension meaning of the IPFV aspect. The same uses are found with the particle tha + IPFVp. The particle makes the utterance more tentative (see also 6.2 & 6.7).

(265) O Vlahos ipostirizi oti o Vasoglou tha ton epaggei (IPFVp) m'ena kaskol ke tote aftos ja na antithi traskise (PFVp) ti lina ke tou tin xarfose (PFVp) (stin kardhia), horis na theli na ton skotosi (PFVnp).

Vlahos claims that Vasoglou was going to/was about to strangle him with a scarf and then in self-defence he pulled out the file and stabbed him with it (in the heart), without meaning to kill him. (P.8.2.88:3)

The above newspaper report contains an IPFVp for an event which was either ongoing or intended at the point of reference and three instances of PFVp for complete events. The text does not reveal whether the man with the scarf had actually begun the act of strangulation or whether the narrator only inferred that this was his intention. In either case, to justify the killing of the attacker, the narrator must have considered that the life threatening situation had begun.
However, it never reached full instantiation. It is this notion of unbounded extension which is denoted by the IPFV aspect. The subjectivity of this assessment of the situation is made more obvious by the (modal) particle tha.

The following two verbs in (265) denote events which were carried out and finished, i.e. discrete events, thus in the PFVp. The last verb (‘kill’) refers to the achievement of the action, ‘he did not want to achieve the killing of him’, and is therefore in the PFV. The form occurs in a non-finite complement and is thus non-past.

The contrast between the potential and the achieved is also evident in the following examples of complements to the modal verb boro (‘can’)

(266) I skier boroun na Itanoun os tin korifi tis
DEF skiers canIPFVnp3p NA arriveIPFVnp3p until DEF top of pigias me ta ski-lift...
slope with DEF ski-lift
Skiers can reach the top of the slope with the ski lift.
{t 29.12.88:64}

(267) ...to pos boris na piasis epafi w'enan
...DEF how canIPFVnp2s NA takeIPFVnp2s contact with+ART eksojino.
extra-terrestrial
...how you can get in touch with an extra-terrestrial. {ibid:94}

The first example (266) states that the situation is such that it is possible for skiers to reach the top. The IPFV emphasises the state or potential, rather than the actual achievement of the action. (267), in contrast, refers to achievement: ‘how you can manage to get in touch’, and is therefore in the PFV aspect.

The modal verb boro also has aspectual forms. The PFV forms are again used to denote achievement, provided, of course, the environment allows a PFV form.

(268) An klisi kanis ta matia tou..., isos boresi na
If closePPVnp3s somebody DEF eyes their perhaps canPPVnp3s NA

kattrakilisi sta palia ta hronia...
roll-downPPVnp3s to+DEF old DEF years
{J.3.2.88:30}

If one closes one's eyes, perhaps one can go back to the old days...
In contrast, potential ability is indicated by the IPFV:

(269)  borouses na me voithisis alla dhen to ekanes.
canIPFVp2s NA me helpPFVp2s but NEG OBJ doIPFVp2s
you could have helped me but you didn't.

(270)  'boreses na me voithisis alla dhen to ekanes.
canPFVp2s NA me helpPFVp2s but NEG OBJ doIPFVp2s
'tyou could and did help me but you didn't.

The ability to help is presented as a potential, or state, in (269). The second clause says that this potential was left unrealized. An achievement, such as in (270), on the other hand, is by definition a realized event and the whole sentence is therefore a contradictory statement, normally unacceptable.

Any statelike notion is compatible with the unbounded extension meaning of the IPFV. This includes, as has been shown, habitual or other iterative events.

The two examples below show the same verb used iteratively and non-iteratively in the same text.

(271)  (Charlie Chaplin in the film 'The Dictator') pou poli epitihimena
       [name] REL very successfully
ensarkone  tin karikatoura enos dhikatore.
embodIPFVp3s DEF caricature ART+POSS dictator
       (Charlie Chaplin in the film 'The Dictator') who very successfully portrayed the caricature of a dictator.

(272)  (Yesterday...Mr KT) ensarkose mia thliveri ke taftchrona
       embodIPFVp3s ART sad and simultaneously
       astia karikatoura dhikatore me katapliktiki epitihia...
       funny caricature dictator with amazing success
       (Yesterday...Mr KT) portrayed a sad and at the same time funny caricature of a dictator with amazing success.
       (both ex.s AP 29.12.88:7)

Both examples refer to past, finished time. Example (271) describes the state, i.e. the portrayal in the form of a film, more than the action of portraying. (272), in contrast, describes the action of the subject (a political figure) by a PFV form. The event is not seen as having any extension but is presented as one discrete, monolithic occurrence.
The PFV and IPFV do not, as has been shown, contrast in terms of the real
world duration of the events they denote. The durative meaning of the IPFV
amounts to a subjective assessment of the event or events. It is therefore used, for
example, in complaints.

\[\text{Prepi na } \text{anaevokatevo (PFVnpIs)} \quad \text{ekato} \quad \text{fores tin imera.} \]
\[\text{anaevokativeno (IPFVnpIs)} \]
\[\text{NOSTnp NA go-up-and-down..........one-hundred times DEF day} \]
\[\text{I have to go up and down (the stairs) a hundred times each day.} \]
\[\text{(Newton & Veloudis, 1980.b:40)} \]

The PFV aspect simply states the fact that the specified closed set of
events occurred, whereas the IPFV emphasises the duration of each event. It is
this subjective emphasis, made possible by the extension meaning of the IPFV,
which makes it an appropriate form for a complaint. The exact interpretation will,
of course, depend on the context.

PFCT and IPFV have in common that they refer to events in a period of time.
They can thus both refer to extended events. The use of PFCT to denote extension
is apparent in some cases where it is interchangeable with the IPFV (see e.g. (247)
in 5.2.4). However, the hybrid nature of the PFCT, which manifests itself in its
morphology (IPFV auxiliary + PFV participle), also allows it to denote discrete
events, when these are anterior to a point of reference.

\[\text{Kathe proi, molis } \text{iha dithi (PFCTp)}, \text{ dhiavaza tin} \]
\[\text{dinomoun (IPFVp)} \]
\[\text{every morning just get-dressed..........readIPFVpIs DEF} \]
\[\text{efimeridha.} \]
\[\text{newspaper} \]

Every morning, as soon as I had got dressed, I read the newspaper.

\[\text{Htes, molis } \text{iha dithi (PFCTp)}, \text{ dhiavaza tin efimeridha.} \]
\[\text{dithika (PFVp)} \]
\[\text{yesterday just get-dressed..........readIPFVpIs DEF newspaper} \]
\[\text{Yesterday, as soon as I had got dressed, I read the newspaper.} \]
\[\text{(274-5: Hesse, 1980:45)} \]

The IPFV in (274) denotes a habitual action (\text{dinomoun} 'used to get dressed') while
the PFV in (275) encodes one discrete action (\text{dithika} 'got dressed').
5.5 Modern Greek aspect in subclauses and complements.

5.5.1 Frequency of PFVnp in subclauses and complements.

One feature which makes subclauses and complements interesting is that they usually allow the PFVnp (e.g. *grapso* 'wrote'). As has already been pointed out, this form occurs only in certain environments, namely after particles or conjunctions which introduce temporal, conditional and concessive clauses and after the particle *na* (see further 6.2). Here I shall deal with the *aspectual* meaning of the PFVnp in these environments.

The PFVnp is the unmarked choice in most cases where it is permissible i.e. in most subclauses and complements. To show just how common this form is, Hesse (1980) presents a frequency count of verb forms from 85 pages of text, chosen at random, from six different authors. There were in all 425 occurrences of the modal or subordinating particle *na*+ PFVnp compared to 180 instances of IPFVnp (ibid:69). The frequency of PFVnp will, of course, depend on the type of text. Minimally, it will depend on the number of modal markers and conjunctions in the text allowing a PFVnp choice. Nevertheless, the point illustrated by the frequency count is that PFVnp is indeed the most common choice when syntactic constraints allow it. This contrasts with the fact that IPFVnp is considered the 'base form' of the verb and is the only available option for non-past in all other contexts.

Further support for Hesse's claim about the frequency of PFVnp is lent by a frequency count which I carried out on a randomly selected page from the novel 'Trito Stefani' (Kostas Tachtis, 1979:110). The novel is, in the words of Peter Mackridge (1985:344) generally agreed to be representative of the speech of a person such as the narrator; a middle-class Athenian woman, born soon after 1900, with high school but not tertiary education.
A count showed twenty–one instances of environments which permit PFVnp in the analyzed text. The PFV has been chosen in seventeen of the twenty–one instances. The IPFV occurs four times, but in two of those cases the opposition is neutralized since the verb does not exist in a PFV form. There are, consequently, only two out of twenty–one instances of deliberately chosen IPFV. My own random sample thus seems to confirm the claim implicit in Hesse's account, that the PFVnp is the unmarked member of the non–past forms. A number of different notions realized by PFVnp will be discussed in the following sections (5.5.2–4) and several examples from this sample text will be used.

The question to be discussed is whether the meanings ascribed to PFV aspect in 5.2.1 are compatible with its many different functions.

5.5.2. PFV for individual events in open sets.

Hesse (1980:31) notes that:

(the PFVnp) refers either to a general case or to a future case, situated at any time other than the present moment.

By 'a general case' Hesse means where the complement predication is presented as being true at all times or any time, e.g.:

{276} Wolis pjo, baernao.
as–soon–as drinkPFVnp IVPFVnp I
As soon as I drink, I vomit. (ibid:32)

The second verb in the example is obligatorily IPFVnp; there is no conjunction or particle which would allow a PFV choice. The first verb is preceded by a temporal conjunction which allows such a choice and is in the PFVnp, the unmarked alternative in this environment.

Hesse's characterization of PFVnp is unsatisfactory for several reasons. Firstly, no tense/ aspect directly encodes omnitemporality. The interpretation is usually context dependent. Examples will be given below, (280)–(281), where either PFVnp or IPFVnp can have such reference. In fact, the IPFV aspect is more
typically associated with omnitemporal reference than is PFV. Secondly, it is not immediately obvious what Hesse means by saying that PFVnp events are 'situated at any time other than the present moment'. I suggest that it should be phrased in accordance with the analysis in 5.2.1: The PFVnp refers to events situated not at the point of reference. The re-wording deals with the fact that PFVnp often occurs in non-finite clauses and so its point of reference, usually set by a governing verb, need not be S. When the point of reference is set by a higher verb, the PFV event is usually interpreted as occurring before or after that event. This is due to the aspectual meaning of PFV (see 5.2.1) which presents events as discrete, without extension and therefore not overlapping with other events. The statement in italics above holds for finite as well as for non-finite complements and subclauses and for past and non-past PFV. The behaviour of the PFVnp is thus that of PFV aspect generally.

In (276) above, the non-past point of reference is given by the higher verb ('vomit'). The dependent event ('drink') is understood to precede and not overlap with the governing event. The choice of PFV on the dependent verb is, from this point of view, compatible with the meaning assigned to it. On the other hand, it might seem that since (276) deals with presumably repeated events the IPFV should be chosen. The solution to this puzzle is provided by Newton & Veloudis (1980.a).

Closed sets of events, for example with adverbials such as 'five times' or 'many times', usually take PFV aspect but Newton & Veloudis (1980.a) show that PFV can, in fact, be used also of events in open sets. They give the following examples:

(277) erhotan kathe mera ja na ti simandhisi
comeIPFVp3s every day PURP her meetPFVnp3s
He came every day to meet her.

(278) erhotan kathe mera ja na ti simandha
comeIPFVp3s every day PURP her meetIPFVpnp3s
He came every day to meet her. (ibid:270)
(277) and (278) have a main clause with a motion verb followed by a final, or purpose, clause introduced by ja na ('in order to'). When the verb in the final clause is in the IPFV, as in (278), the interpretation is that both the comings and the meetings took place on a regular basis. When the second verb is PFV, one might expect the interpretation 'he came every day to achieve one single meeting.', i.e. one meeting for all the instances of coming. Newton & Veloudis point out that although this is a possible reading, the most common reading would be that there were as many meetings as comings. The events in both clauses would, in other words, be seen as habitual (open sets) in the most usual reading. How is this compatible with PFV aspect which was said to denote discreteness?

Discreteness was defined as conveying the meaning of something being "separate, individually distinct, discontinuous". 'Discontinuity' refers to the fact that each event is seen as cut off from other events. PFV aspect in (277) denotes that each event in the open set is regarded separately:

<table>
<thead>
<tr>
<th></th>
<th>(277) a</th>
<th>(277) b</th>
<th>278</th>
</tr>
</thead>
<tbody>
<tr>
<td>come</td>
<td>IPFV/PPFV</td>
<td>IPFV/PPFV</td>
<td>IPFV/PPFV</td>
</tr>
<tr>
<td>meet</td>
<td>CCCCCC...</td>
<td>CCCCCC...</td>
<td>CCCCCC...</td>
</tr>
</tbody>
</table>

Fig.60.a The effect of aspect on verb meaning (in 277-8).

Fig.60.a has been adapted from Newton & Veloudis (1980.a: 275). As the authors point out, ja na ('in order to') can be paraphrased 'because x wanted'. (277) conveys the meaning that x wanted to achieve one meeting in either of two ways. Either it was his intention each time he came to achieve one meeting that time, as in (277) a, or else all the times he came he wanted one single meeting, as in (277) b. This can be contrasted with (278) which conveys that he continuously had the wish for multiple meetings with the woman in question.

The PFV form in the above example is in a subclause after the particle na. Hesse (1980) gives another interesting example of a subclause with PFVnp for what is obviously repeated occurrences of the event.
(279) Otan i angli poune kati, kratoune to logo tous.
when DEF English sayPFVnp3p something holdIPFV3p DEF word theirs
Whenever the English say something, they keep their word.

(280) Otan i angli lene kati, kratoune to logo tous.
when DEF English sayIPFVnp something holdIPFV3p DEF word theirs
Whenever the English say something, they keep their word.

(both, ibid:26)

The time clauses of (279) and (280) contain different aspectual forms of the
irregular verb lenε (‘say’). There is no aspectual choice for the second verb. It has
to be IPFV since it is in the present and not preceded by any modal marker or
conjunction which would permit PFV. The verb in the time clause, however, can be
either PFV or IPFV. The English translation equivalent would be the same for both
examples. Since the situation is one of repeated events which, it can be assumed,
occur in a time period overlapping with the moment of speech the inevitable
aspectual choice would seem to be the IPFV, as in (280). More surprising is the
choice of PFV in (279). A diagram similar to the one above can clarify the meaning
difference between (279) and (280).

<table>
<thead>
<tr>
<th></th>
<th>(279) PFV/IPFV</th>
<th>(280) IPFV/IPFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>say</td>
<td>s s s s s</td>
<td>ssss...</td>
</tr>
<tr>
<td>keep</td>
<td>kkkkk...</td>
<td>kkkkk...</td>
</tr>
</tbody>
</table>

Fig.60.b The effect of aspect on verb meaning (in 279–80).

The PFV form poune in (279) presents each occurrence of the event as a
whole while the IPFV lenε in (280) conveys the habitual state constituted by
repeated occurrences of the event. In Hesse’s words the PFV: “stresses the
completion of each action: ‘once they have said’ and thus excludes simultaneity”,
i.e. simultaneity with another event. They say something and then they keep it. The
PFV thus refers to each individual event in an open series of events.

When the same examples are given past reference the meaning of the PFV
seems to change slightly:
The examples are represented diagrammatically below:

<table>
<thead>
<tr>
<th>Say</th>
<th>(281) PFV/FFV</th>
<th>(282) IPFV/FFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>keep</td>
<td>/ssssssss/</td>
<td>/ssssss...</td>
</tr>
<tr>
<td></td>
<td>/kkkkkk/</td>
<td>/kkkkkk/</td>
</tr>
</tbody>
</table>

Fig. 60.c The effect of aspect on verb meaning (in 281–2).

Both the examples and the translation are from Hesse, 1980. The PFV, *ipan*, in (281) denotes a closed set of events. (282), in contrast, denotes the continuous, or habitual, state of an open set of events. The difference is that PFVp is seen to refer to a complete series of events or 'a totality of actions' while the IPFVp would refer to the (habitual) state rather than to the event.

The seeming change in meaning of the PFV from individual instances of an event (within a set), in (280), to a closed set of occurrences in (282) is due to the interaction between aspect and tense. Examples (280) and (281) refer to the non-past, or more exactly, to a situation which is seen, at the moment of speech, as being generally valid. The conjunction *otan* ('when'/'whenever') allows a choice of PFV or IPFV. Since the situation is referred to in such general terms it cannot be finished. It is still valid. The PFV with non-past reference, in (280–1), can consequently not refer to the whole set of events as complete, but is understood as denoting the discreteness of each individual event in an open set. When the same situation is in the past, as in (282), the reading of PFV as denoting a complete, closed set of events presents no problem. Past situations are, more often than not, finished at the moment of speech. Still, the alternative reading is possible. PFV may still denote each individual event in the series, as exemplified in
(277) a (fig.60.a, above). The choice of interpretation of (282) depends on extra-linguistic factors; knowledge of the wider context and generally of the world.

It has been shown that the discreteness meaning of PFV holds in subclauses as in main clauses, with non-past reference and in the past. Discreteness can be interpreted in three ways: as pertaining to one single event or to one individual event in an open series or, finally, to a closed set of events. The preferred reading will depend on both linguistic factors, e.g. frequency adverbials, and on the wider context.

5.5.3. Anterior PFVnp.

The definition of the PFV as denoting a location ‘not necessarily at R’ implies that it is compatible with anterior events. A PFVnp event in a dependent clause or complement can be located before its point of reference. This is the case in (283):

(283)  
dhe borouses toulahiston na'rhthis na mou parastathis
NEG canPFVp2s at-least NA+comePFVnp3s NA me supportPFVnp2s

simfora pou me virke?
in+DEF misfortune REL me findPFVp3s

couldn't you at least have come/come to give me support in my
misfortune?

In (283) the state described by the modal verb borouses (‘could’) is negated: ‘you were not able’. It has scope over the PFVnp predicate erthi (‘come’). Whether this latter verb refers to one instance of the event or several can only be deduced from the context. The modal expression denotes a state such that ‘someone is able’. In both Modern Greek and the English translation the state might be prevalent at either the moment of speech or a past point of reference. In English it is necessary to mark whether the complement event is PRE its (temporal) point of reference. Since the complement is non-finite, this would be done by the PFCTnp form (see translation). In Modern Greek, marking of anteriority is not required in contexts
such as (283). PFV aspect can be interpreted either as denoting an event PRE R or POST R. Contextualized examples are rarely ambiguous.

5.5.4. PFVnp for future.

Its discrete, 'not necessarily at R', meaning means that PFVnp is the unmarked form also for future events. It occurs after the particle tha for future (and other modal notions, see 6.2, 6.2.1):

(284)  Pos tha zisis fora moni sou, horis proostati?
how FUT livePFVnp2s now alone you without protector
How are you going to live now alone, without a protector.

 Kant 79:110

The point of reference here is the speaker’s now. The PFV denotes an event located 'not AT' that point of reference, i.e. PRE or POST. The particle tha narrows down the options to POST, i.e. future. The IPFVnp is also available after tha but the PFVnp is the default choice. Although the 'living' has extension in time, and could thus be IPFV, the encoder has not seen sufficient reason to deviate from the unmarked encoding. The PFVnp refers to the 'living' as a discrete whole.

PFV aspect is also the unmarked choice on a dependent verb which is future relative to a governing verb either because of the meaning of the higher verb or because of a purposive relationship:

(285)  pite tis na min ksanarthis
sayIMP her NA WNBG returnPFVnp3s
tell her not to come back

(286)  kathe fora pouperna ton aniforo
every time takeIPFVp1s DEF up-hill-slope (PURP) NA goPFVnp1s (PURP)

na ton dho stis filakes
NA him seePFVnp1s in+DEF prisons

every time I set off up-hill to go and see him in prison...

 both, Kant 79:110

The first example, (285), contains a verb of saying denoting an order. The dependent verb is naturally perceived as expressing an event later than the order. The time reference relative to which the complement event is seen is given by the
higher verb in both cases. (286) contains two final (purpose) clauses initiated by 
(ja) na ("in order to"). The time reference is set by the IPFVp eperna ("I set off").
The purpose of this main event is expressed by 'to go and see'. It is also possible
to analyze 'to see' as the purpose of the somewhat redundant verb 'go' and this is
the relationship relevant here. The complement verbs in both examples are non-
finite and PFVnp. The events are in the future since they express the purpose of
the preceding event. The 'setting off' precedes the 'going' which precedes the
'seeing'.

The PFV has been discussed at some length to illustrate the point that the
notions denoted by the aspects remain the same regardless of subordination/
complementation. It has been found that the PFVnp is the default choice in the
sub-clauses and complements where it is allowed. As in other environments, PFV
aspect denotes discrete events not necessarily AT R, either before or after a point
of reference or against the background of, for example, a state.

5.5.5 IPFV versus PFV in complements of modal verbs.

Newton & Veloudis (1982) have shown how the aspectual meanings of
IPFV and PFV complements interact with the modality of governing modal verbs.
The characteristics of this interaction further support the definitions of IPFV as
denoting continuousness and PFV as denoting discreteness.

Newton and Veloudis (1980.b) distinguish between deontic modality, which
is said to correspond roughly to 'moral/ legal obligation', and dynamic modality,
which is said to deal with 'physical cause'. Their treatment of modalities differs
from that presented in this thesis. To avoid confusion, I shall distinguish between
epistemic and non-epistemic modality and, within the latter, between 'moral/ legal
obligation' and 'other' non-epistemic modality.
Newton & Veloudis deal with aspect on verbs governed by the modal *prepi* which can express epistemic or non-epistemic modality. Examples of non-epistemic *prepi* are:

(287) **Prepi na to kanis!**  
\[ \text{MUSTp NA DEF doIPFVnp2s} \]  
you must/ have to do it!

(288) **Eprepe na to kano**  
\[ \text{MUSTp NA DEF IPFVnp1s} \]  
I had to do/should have done it.

(289) **itan poli vari ke eprepe na to afiso**  
\[ \text{beIPFVnp3s very heavy and MUSTp NA OBJ leaveIPFVnp1s} \]  
it was very heavy and I had to leave it.

The two first examples, (287–8), could refer to moral/legal obligation whereas the context of (289) seems to rule out such an interpretation.

It is shown, in Newton & Veloudis (1980.b), that the choice of aspect on the complement verb of *prepi* is influenced by rate expressions, e.g. ‘three times a day, never, once, always’ and also by the type of modality denoted by *prepi*. The claim is thus made that there are two relevant parameters which determine aspect on the complement: modality and frequency of events.

It is said that, in the absence of rate expressions, the complement of *prepi* will normally select PFV aspect whatever non-epistemic modality the governing verb denotes, whereas with rate expressions IPFV is always selected if the modal denotes moral/legal obligation. This can, according to the authors, be explained in terms of scope; moral/legal obligation has “unbroken temporal extension over the acts whose performance would constitute compliance with it” (ibid:30). In other words, it applies continuously and is therefore only compatible with IPFV aspect. This contrasts with other types of non-epistemic modality (see e.g. (289)) which can apply continuously or at (a) particular moment(s).

The most interesting case is when the modal *prepi* does not express moral/legal obligation but is accompanied by a rate expression (see table below).

Newton’s & Veloudis’ results show that the probability of IPFV then increases with
the frequency of the event, i.e. the closer the frequency of events is to describing a
continuous line, the higher the probability of IPFV. They give examples which are
variations on the following sentence, with different rate expressions:

\[(290) \quad \text{Eprepe na } \text{petai (IPFV+pa3s) me tin tahitita tou ihou.} \]
\[\quad \text{petaksi (IPFV+pa3s)}\]
\[\quad \text{\textit{WUST NA fly, \ldots \ldots with DEF speed of sound}}\]
\[\quad \text{\textit{He had to fly at the speed of sound.'}}\]

The authors tested the acceptability of PFV and IPFV in this frame, with different
rate expressions. The table below, which shows the outcome of this test, has been
adapted from Newton & Veloudis (1980.b:37).

<table>
<thead>
<tr>
<th>IPFV</th>
<th>PFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>petai</td>
<td>petaksi</td>
</tr>
<tr>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>eprepe panda ('always') na...</td>
<td></td>
</tr>
<tr>
<td>eprepe kathe toso ('every now &amp; then') na...</td>
<td></td>
</tr>
<tr>
<td>eprepe mja fora tin evdhomadha (once a week) na...</td>
<td></td>
</tr>
<tr>
<td>spanja (rarely) eprepe na</td>
<td></td>
</tr>
<tr>
<td>pote (never) then eprepe na</td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

'...me tin tahitita tou ihou.'

Table 24 The acceptability of rate expressions with PFV and IPFV in
the frame 'he had to fly at the speed of sound...'. (ibid:37)

The horizontal line, in table 24, is used to indicate that rate expressions are
successively more acceptable with the particular aspect as they approach the
extremes of the figure. The expression mja fora tin evdhomadha ('once a week') is
thus as likely to select either aspect. Spanja ('rarely'), on the other hand, is more
often acceptable with PFV than with IPFV while the reverse holds for kathe toso
('every now & then'). Panda ('always') always takes PFV aspect, according to the
table, while pote ('never'), at the other end of the scale, always selects IPFV
complements. The authors claim:

...the structure eprepe + perfective verb + rate expression
possesses a degree of acceptability which varies inversely
in proportion to the event frequency indicated by the rate
expression...Conversely, if we consider the same frames
with imperfective petai acceptability varies directly in
proportion to the frequency suggested by the rate
expression.

(ibid:37)
A point not noted by Newton & Veloudis is that the expressions spanja, pote, kathe toso and panta ('rarely, never, every so often' and 'always') indicate variable frequency and that, furthermore, they share the quality of being evaluative. Out of context such expressions say nothing about the real world frequency of events. They denote frequency as perceived by the speaker. 'Once a week/day' etc. is a more precise indication of frequency.

Can it therefore be said that mia fora tin evdomadha ('once a week') is less frequent than 'every so often'? Since Newton & Veloudhis focus on one particular sentence, this question is not discussed. However, it would seem that in the context "The brontosaurs were decimated by illness ..." the opposite were true. One might in that context want to contrast 'every so often' with 'once a year/decade etc.' rather than '...week'. 'Once a week' can thus be considered frequent or infrequent. The former evaluation would increase the likelihood of IPFV, the latter would increase the likelihood of PFV. If there is no speaker evaluation, i.e. in a statement of a purely factive nature, one would expect the PFV aspect since it is most compatible with the precision of the rate expression. (The frequent association of PFV aspect in Modern Greek with facts will be further discussed in 5.6.1.) This goes some way towards explaining the variation.

I am thus claiming that with precise rate expressions such as 'x times a day/week etc.' the speaker's perception of frequency interacts with the parameter factive-evaluative. The speaker has a choice between a factive, non-evaluative presentation of the event, expressed by the PFV, or an evaluative one where the extension meaning of the IPFV focusses attention on the frequency. The other rate expressions in the set are all inherently evaluative, and the speaker chooses between IPFV and PFV depending on whether the frequency is to be presented as relatively high or low.

The way aspect is selected in complements of prepi supports the claim made earlier that the meanings of aspectual forms are the same in complements
as on higher or independent verbs. PFV denotes discreteness and therefore combines with rate expressions which either give a precise indication of event frequency and/or denote low frequency. If the event is seen as frequent then IPFV will be the preferred choice since it denotes continuity. Events considered to have a high frequency of occurrence are thus seen as occupying one continuous (but open-ended) time period of events. When the frequency denoted by the rate expression can be interpreted as both high and specific the chances of a speaker’s focusing on one or the other characteristic in their choice of aspect would seem to be even.

5.6 Reality status.

5.6.1 Degree of factivity.

As mentioned in the previous section, the PFV in Modern Greek is used to present events as facts. Not that the event need be a fact in the real world; it may just be ‘unmarked for non-fact’ or presented as an alternate reality (see also 6.8.2). Mackridge (1985) mentions the ‘aorist of make believe’ (Ben-Mayor 1980:38), and gives an example from adult speech.

(291)  As i potheseoume oti ehoume ena magiko xamhi, ke
CONC hypothesizePFVnp1p that haveIPFVnp1p ART magic wand and
sikotheiako avrio to proi, ke ihamo thvamios
get-upPFVnp1p tomorrow DEF morning and haveIPFVnp1p marvellous

dhaskalous.
teachers

Let’s suppose we have (=had) a magic wand, and we got up tomorrow
and we had marvellous teachers.  
(Mackridge, 1985:130)

The event exists only in the world of imagination, but the language provides the means of presenting it as a fact. Unless the extra-linguistic context is clearly that of make-believe, as when children play, a clarification of the event status is needed, e.g. “let’s suppose...”. In order to clarify its force, (291) can be paraphrased: “let’s hypothetically consider the following to be a fact...”.
A similar use reported by Mackridge (1985:130) and others, and noted by many a traveller in Greece, is the use of the PFVp for promises, undertakings and threats. The waiter who shouts:

(292) eftasa (PFVpIs)
     I arrived (= 'I am arriving')!

may be a long time in getting to the table addressed. The utterance can be paraphrased: “consider my arrival a fact”, and its force is roughly that of a promise. Similarly, one form of leave taking is to state that one has left, as in (293) below.

(293) figame (PFVpIs)
     we left (= 'we are leaving')

The verb in (293) is PFVp. Other encodings would change the meaning; an IPFVnp form in this context would be perceived as inceptive and as indicating that there are still matters to be settled, things to be said, before the speaker actually leaves. An IPFVp would denote a past, unrealized event: “we were about to leave...”. If these meanings are ruled out, then the only form at the speaker’s disposal is the PFVp. The PFVnp would only be available if preceded by a particle or other introductive, e.g. tha. Such environments always denote an element of Uncertainty (see 3.1) which is contrary to the speaker’s intention in (293) of uttering a firm promise or undertaking. The intended message: “Consider my leaving a fact”, is thus best expressed by the PFVp, as above.

The factive meaning of the PFV is evident also in the apodoses of what might be called ‘possible conditionals’.

(294) Ola ta brourdзina dhiakosнitika sas tha katharisoum ke tha
     all DEF brass ornament yours FUT cleanPFVnp3p and FUT

jalisoum, an ta perasete me domatсolito
     shinePFVnp3p if OBJ passPFVnp2p with tomato-paste

All your brass ornaments will become clean and will shine, if you go over them with tomato paste.  

(j 3.2.88:23)

The whole sentence in (294) refers to a hypothetical, thus unreal, situation indicated by the particles tha (‘will’) and an (‘if’). However, the use of [−DIST]
forms denotes that the fulfillment of the condition is possible. The outcome is an achievement which can be considered a fact, given the fulfillment of the condition. (294) can be paraphrased: "consider it a fact that if X then Y will be achieved". In this factive context the appropriate aspect is the discrete PFV.

PFV has semantically a lot in common with PFCT; both aspects can express anteriority and both can refer to complete events. The major difference is that PFCT refers to an event in a period of time, thus denoting extension. This is not compatible with the expression of plain, unmarked fact in Modern Greek. Consequently, one of the few cases where PFCT is unacceptable is when events are presented as recent, uncontroversial facts. This use has sometimes been termed 'hot news' and was the only case identified by Hedin (1985), in her study of the Modern Greek PFCT where the PFVp and PFCTnp did not overlap at all. (295)–(296) show the difference between English and Modern Greek in this respect.

(295)  Πέθανε ο βασιλιάς!
       diePFVp3s DEF king
The king has died (PFCTnp3s)!

(296)  Ιρθε ο άγορι μας!
       comePFVp3s DEF boy ours
Our boy has arrived (PFCTnp3s)!

(296) would be appropriately said, for example, on the sudden or unexpected sighting of 'the boy' as he opens the front gate. In a 'hot news' context such as (296) the PFCTnp would not be used in Modern Greek. In English, the situation appears to be somewhat less tightly constrained; although PFCT is typical in such contexts, the PFV is also used.

Hedin's explanation for the use of Modern Greek PFVp in this context is as follows:
This category (the PFVp), aspectually categorized as
progressive, is used for situations oriented to the PP (the
speaker’s now), which can be seen as the “immediate
present”, whereas the Perfect (PFCTnp), which may be
described as aspectually terminative, refers to situations as
being located in the present frame but detached from the
“immediate present”. The Aorist (PFVp) thus has a
“narrower” perspective than the Perfect (PFCTnp) which
makes it more appropriate to use for referring to the recent
past. (Ibid: 108)

Inserted in brackets are terms used in this thesis which are equivalent to those
employed by Hedin. The analysis seems to be based both on the interaction
between aspect and tense and on the aspectual meanings themselves. I believe
only the latter needs to be considered here.

I disagree with Hedin’s characterization of the aspects. PFCT and PFV
aspects are said to differ in that the PFCT refers to “a terminated process leading
up to the change” (thus ‘terminative’) whereas the latter (PFV) denotes “the
transition to the new state in itself” (thus ‘ingressive’) (Ibid: 90). This analysis is in
conflict with Hedin’s own view of PFV as denoting events viewed ‘punctually’, ‘as
having no extension’ and PFCT as having extension and denoting current
relevance (Ibid: 88–9). It is not easy to see why current relevance would mean that
the situation described by PFCTnp would be seen as “detached from the
immediate present”. On the contrary, current relevance implies exactly that the
anterior event is linked to its point of reference. Surely the ‘punctual’ nature of
PFV means that it is this aspect which denotes events seen as cut off from their
point of reference. If PFV were to denote a ‘transition’, which part of the transition
would that be? Since PFV events have no extension it could not refer to the whole
transition as transition.

It is my view that the PFVp often, and certainly in ‘hot news’ contexts,
refers to accomplished facts, regardless of whether it is or not a transition which
has been accomplished. An accomplished fact can, of course, be seen as
‘punctual’, as a ‘whole’ but it is necessarily ‘cut off’ from other events or point of
reference. In other words, an accomplished fact is inherently 'discrete' – the aspectual meaning of the PFV.

The PFCT, on the other hand, denotes events with current relevance. In Modern Greek this means that the event itself loses some of its saliency as the result, experience or other relevant state at the point of reference comes into focus. The use of the PFVp for 'hot news' ensures that the event gets the saliency it deserves and that it is perceived as an accomplished fact.

A related use of PFV is what Mackridge (1985:129) terms the 'inchoative', i.e. referring to the beginning of an event. Some examples are:

(297) katalaava (PFVpIs) 'I understood/understand.'
    katalavemo (IPFVpIs) 'I understand.'
(298) pinasa (PFVpIs) 'I got hungry/am hungry.'
    pinao (IPFVpIs) 'I am hungry.'

The PFVp in (297)-(298) refers to occurrences which typically result in states. The occurrence is in logical terms the beginning of the state. Linguistically, however, one can refer to each separately by using the PFVp for the occurrence, IPFV for the state. The occurrence denoted by the PFVp is the complete 'coming into being' of the state. The IPFVnp, on the contrary, merely denotes its 'being'. Perhaps because it denotes that the state is ongoing AT S, the latter is perceived as more subjective, less like a factive statement. It could be used, for example, to voice a complaint e.g. pinao ('I am hungry') (see also (275) in 5.4). The contrast between factive PFV and more subjective IPFV will be further elaborated on in the following section.

5.6.2 Inference and hypothesis.

The IPFVp, in sharp contrast to the PFV, is often used when the predicated event is presented as unreal. If there is a need to clarify that the time reference is [+DIST] in such contexts, the PFCTp can be used. The example below is found in
Hesse (1980:52). The first two clauses provide the context for the modalized clause (with na) where there is a choice of encoding.

(299) Jati dhe mou'pes tipota? Dhe na irthes.

why NEG NEG me+sayPFVp2s nothing NEG comePFVp2s

Na mou telefounoues (IPFVp2s).

hes telefoniisi (PFCTp2s).

NA me telephone.............

Why didn't you say something? You didn't come. You should have called me.

The particle na, in (299), gives the utterance modal (deontic) force (see 6.12). As the translation shows, the IPFVp can denote unrealized past events: "you should have...". However, if the context did not unequivocally indicate past reference, the IPFV could be interpreted as omnitemporal: "I wish you would call me (in such situations)." The PFCTp can be used to clarify that the reference is past time.

The double reading of the IPFVp (telefounoues) as referring to past or having omnitemporal meaning arises because the [+DIST] marking on the IPFVp can denote DISTance either in temporal terms, i.e. pastness, or in terms of 'degree of confidence' (see 1.7.3 & 3.2). The 'unbounded extension meaning' of the aspect itself implies that the event is in some sense incomplete either by being ongoing or by being unrealized. In the context of a mand it will be understood to be unrealized. The [+DIST] marking may denote either that this unrealized event is past ("you should have...") or that the speaker has a low degree of confidence in the event being realized in future ("I wish you would..."). The context of (303) makes the former reading likely.

The PFCTp (hes telefoniisi), in contrast, is seemingly marked twice for 'pastness', once by being [+DIST] and again by the PFCT aspect, which denotes events PRE R. This combination of features is interpreted as unreality plus pastness, i.e. an unrealized event unambiguously in the past.
IPFV and PFCTp, i.e. the aspects which denote extended event intervals, are used also in the protasis and apodosis (condition and result clause) of conditionals.

(300) Tha efewga an dhe m’agapos.  
FUT IPFVp1s COND NEG me+loveIPPVp2s  
I would leave if you didn’t love me, or I would have left you if you hadn’t loved me.

(300) contains IPFV aspect in both clauses. As in (299), there are two readings of the IPFVp, one omnitemporal (referring to all time), the other referring to past time. (The latter reading could also be encoded by the PFCTp.) In (301) the context from which the example is taken (not included here) makes it clear that it has omnitemporal reference.

(301) (i eleftheri radhiofonia...) dhen tha epava po to na tin  
NEG FUT ceaseIPPVp1s never NA her

ipostirizo esto an ki meta apo ena hrono arhiza  
support IPPVp1s even COND and after from one year begin IPPVp1s

pali n’akwono kasetes sto aftokineto.  
again NA+hear IPPVp1s cassettes in+DEF car

(The independent radio...) I would never stop supporting it, even if after a year I started again listening to cassettes in my car.  
(T 29.12.88:131)

(302), below, shows past reference encoded by the PFCTp in the protasis of a conditional, whereas the final example, (303), contains PFCTp in the apodosis.

(302) An iha dhiavatirio tha to’ha skasi pro polou.  
COND have IPPVp1s passport FUT OBJ+burst IPFCTp1s before much

If I had had a passport, I would have left out of here long ago.  
(Hesse, 1980:64)

(303) I jineka mou tha borouse na kratisi tous filous tis,  
DEF woman mine FUT can IPPVp3s NA hold IPPVp3s DEF friends hers

an dhen ihe kopsi moni tis tis jefires.  
COND NEG cut IPFCTp3s alone DEF friends her

My wife could have kept her friends if she herself had not burnt (lit.’cut’) her bridges.  
(J.3.2.88:46)
In (303) the verb 'cut' is in the PFCTp (i.e. kopsi). The choice of PFCTp over PFVp marks that the event is both unreal and past. The modal verb (borouse 'could') in contrast, is obligatorily IPFV since both the PFCT and PFV forms of this verb denote achievement (see 6.1). In this particular case, the modality dictates that the IPFVp form must be used. The dependent verb in the non–finite complement (na kratisi) is in its unmarked PFVnp form.

Tha ("if") + PFVp (e.g. tha egrapse) can only be interpreted epistemically (e.g. 'is assumed to have written') and so the PFVp is not used in apodoses of conditionals. For this reason Hesse claims that the aspect value of the IPFVp is absent in the apodoses of conditional sentences and also when it denotes 'future in the past' (Hesse, 1980:63). Nevertheless, as I indicated above, the use of the IPFV here is compatible with its aspectual meaning. The open–endedness, or unboundedness, of the IPFV is interpreted as applying to the reality status of the event thus making it an unrealized event. The aspectual meaning motivates the use of IPFV in conditionals and for future events. It contrasts with the PFV which, because of its discreteness meaning is associated with the expression of factivity (see above, 5.6.1).

It is only with the past aspectual forms the IPFV–PFV distinction has been neutralized. For events POST S, either IPFVnp or PFVnp can be used for the unreal or potential. Typical contexts are e.g. wishes, reprimands and regrets.

(304) 0 tadhe na me agapai ke na lioni ja mena, opos DEF somebody NA me loveIPFVnp3s and NA meltIPFVnp3s for me as

lioni aito to keri.
meltIPFVnp3s this DEF candle

(I wish) that he should love me and melt for me (i.e. find me irresistible) as this candle is melting. (J.3.2.88:10)

(304) is a magic formula, recommended by an Athens witch, to be said by a lit candle. The reference is omnitemporal; it is an invocation of a particular state of things and thus encoded by the IPFVnp. (305) refers to a future occurrence, denoted by the PFVnp, which the speaker wishes will never take place:
(305) Fige ke na mi se ksanadho!
leveIMP and NA WNEG you see-againPFVnp1s
Go away and never let me see you again!  (Mackridge, 1985: 281)

(306), below, has the same wording as the na-clause in (299) in 5.6.2, above, but
the interpretation here (one of several possibilities) is that it expresses a wish:

(306) Na mou telefonomas [IPFVp2s] !
    telhes telefonisi [PFCTp2s] !
    NA me telephone...............
I wish you [would call] me (in such situations)!
    [had called] me!

The PFVp is not permissible here. As can be seen in this example, although the
IPFV–PFV opposition is neutralized in this environment, the IPFV–PFCT opposition
remains. This is the case also in conditionals. The PFCTp can be used here, as
mentioned above, to clarify that the time reference is past i.e. to denote tense.
Alternatively (or additionally) it can be used for its aspectual meaning, e.g. to
stress ‘current relevance’ in the form of a result at the point of reference (cf.
Hesse, 1980: 64). The fact that there is an aspectual opposition in these contexts
argues for the claim made earlier that the IPFVp retains its aspectual meaning also
when denoting unreal events, e.g. in conditionals.

A context in which unreal events can be encoded by the PFV is that of
inference. Below are three examples. (307) refers to past time and denotes an
inferred event presented as certain by the PFVp. The subjective nature of this
assessment is indicated by the particle tha.

(307) Tin lampa esi tha tin pires, os fenete.
    DEF lamp  you FUT OBJ takePFVp2s as seemIPFVnp3s
    The lamp, you must have taken it, it seems.  (Hesse, 1980: 62)

(308) is an example of a prediction, thus referring to the future. Since no iterative,
continuous or other IPFV meaning is intended, the PFVnp is chosen:
The last example, (309), contains an inference about a past event with current relevance (at S), encoded by the PFCTnp:

(309)  

The use of aspectual forms for inference and hypotheses can now be summarized.

It might seem that events either are or are not real whereas, in fact, (un)reality is treated in language as a matter of degree from factive or ‘alternate worlds’ (see 6.8.2) to impossible. The assessment of degree of reality is to some extent subjective. Future events, for example, are potentially realizable and thus less unreal than unrealized past events. Also, even events that are not accepted by the discourse participants as established facts can still be presented as factive (see 6.8.2). Events in conditionals can also be considered more or less real depending on their time reference and on the speaker’s perception. The degree of reality of an event can thus range from the uncertainty of futurity to the impossibility of a past conditional. In Modern Greek the subjective assessment of the reality status of the event is, as we have seen, often marked by a particle, e.g. tha or na (see further 6.2). The unmarked choice of aspect for the more certain of the unreal events is the discrete PFV (see (307)), less certain events normally take the IPFV. The PFCT aspect is used in all cases to indicate anteriority and/or current relevance.
The summarizing table which follows shows the distribution of PFV and IPFV forms to denote ‘hypothetical events’. I include under ‘hypothetical events’ conditionals (protasis & apodosis), potential events, wishes, regrets and inference as well as future events when these are treated as non-factive. The forms in the table are often preceded by a particle, e.g. na or tha, marking the subjective nature of the assessment. The term ‘general reference’ subsumes ‘omnitemporal’ (ref. to all time) and ‘atemporal’ reference (ref. to no time).

<table>
<thead>
<tr>
<th>HYPOTHETICAL EVENTS</th>
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<tr>
<td></td>
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<tr>
<td>MORE FACTIVE</td>
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<td>\</td>
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<tr>
<td>PAST time</td>
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<td>NON-PAST time</td>
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<td>reference</td>
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<td>reference</td>
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<tr>
<td>(IPFVnp)</td>
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<td>LESS FACTIVE</td>
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<tr>
<td>PAST/NON-PAST</td>
</tr>
<tr>
<td>NON-PAST time</td>
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<td>&amp;/or GEN.:ef.</td>
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<tr>
<td>&amp;/or GEN.:ref</td>
</tr>
<tr>
<td>IPPVp</td>
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<tr>
<td>IPPVnP</td>
</tr>
</tbody>
</table>

Typical uses e.g.: inference, prediction (non-conditional) conditions, wishes, etc.

Ex.: 309 311, 310 301-5 306

Table 25 The distribution of PFV and IPFV forms to denote hypothetical events.

The numbers at the bottom of the table refer to examples given in this section. The ‘more/less factive’ status relates to a subjective assessment by the speaker rather than to the real world status of the event. Hypothetical events can be presented as if they were real (left section) by the PFV aspect. In cases where there is a choice between PFV and IPFV, the former is the unmarked choice for such events. Hypothetical events in conditionals, wishes, reprimands etc. (right section) are encoded by the IPFV which, because of its meaning of unbounded extension, can have ‘general reference’.

It is not possible to say, in the above cases, that any aspect or tense consistently denotes unreality. Rather it is the combination of aspect and tense in
relation to markedness and in context which makes the distribution in table 25 functional.

The PFCT aspect is not included in table 25 since it does not directly participate in the encoding of reality status. It can be used to indicate event time (PRE R) or current relevance of events regardless of their reality status. Since an IPFVp form often has more than one reading, the PFCTp can, for example, be used to clarify the time reference of events which are both past and unreal (see (306) above).

The analysis in 5.4–6 has shown that the contrasting meanings of discreteness, or bounded events, and unbounded extension are evident in a number of uses of the PFV and IPFV. Whereas the PFV is used for what is achieved, complete, and a fact, the IPFV often denotes what is potential, incomplete or subjectively assessed in some way. The use of the aspects for reality status is metaphorical (i.e. ‘transferred’) inasmuch as that which one can ‘pin down’, that of which one knows the boundaries, i.e. a factive event, is presented as discrete, as if it were a single, complete event. In contrast, that which is nebulous, of uncertain boundaries or existence is expressed by an aspectual form denoting unbounded extension, as if it were a state. The PFCT, finally, is morphologically a ‘hybrid’, a combination of an IPFV auxiliary and a PFV main verb, and displays the same duality semantically.

5.7 Discourse functions.

5.7.1 Saliency: iconic use 1.

The discourse functions of backgrounding and foregrounding have often been associated with the IPFV and PFV aspects respectively (cf. Givón, 1984 and others). This use is ‘iconic’ in that the compatibility of the aspects with these functions stems from the shape of their event intervals: IPFV refers to unbounded, extended intervals, PFV to discrete intervals without any particular extension. An
extended interval may function as the ‘backdrop’ for a non-extended interval
which thus becomes more salient (see 2.4). Extended or non-extended intervals
can be created by morphological aspect or by inherent meaning of predicates (see
2.1, 2.5).

Because of the restrictions on the PFVnp, the PFV occurs most frequently
in subclauses and complements. The governing clause may describe a state or
state-like event. A PFVnp complement or subclause event, in such cases, is seen
against the background of the governing state. The governing and dependent
events are, in other words, overlapping and the PFV event is foregrounded.

(310)  Pos fantazese oti ime dhimatom n’afisi
how imaginePFVnp2s that beIPFVnp3s possible NA+leavePFVnp3s
atimorito ena tetio engklima?
unpunished ART such crime

How do you think that it is possible for him to leave such a crime
unpunished?
(KT.79:110)

(311)  ihes tin aponja na tou afisis ena sketo stroma
havePFVp2s DEF callousness NA him leavePFVnp2s ART plain mattress
sto patoma
on+DEF floor

you had the callousness to leave him just a mattress on the floor.
(KT.79:110)

(310) shows a PFVnp complement of a modal expression which says that a state
exists such that something is possible. That which is possible is one or more
instantiations of the event described by the PFVnp ‘to leave’. It can therefore be
said that this form denotes an individual event in an open series of events. It was
shown above (5.5.2) that in the case of open series of events in the non-past
there is a choice between presenting either the whole series of events by an IPFV
form, or each individual event by the PFV. In (310) each individual event of ‘leaving
unpunished’ is foregrounded.

The next example, (311), says that a state of callousness existed such that
it led to a certain action, seen as ‘discrete’ against the background of this state
and expressed by the PFVnp. Whether the action occurred only once or more than once can only be deduced from knowledge of the wider context. Both (310) and (311) illustrate that when an IPFV and a PFV event interval overlap, the extended event interval forms a backdrop for the discrete event.

In the above examples, the extended interval was created by the inherent imperfectivity of states. Below is an example of a foregrounded PFVp event against a background of a morphologically IPFV event.

\[(312) \quad \text{O WD hrisimopiose, os sintima stin proeklogiki ekstratia} \]
\[
\text{DEF (name) useIPFVp3s as Slogan in+DEF pre-election campaign}
\]
\[
tou tou 'amerikaniko oniro'. Ke i Ellines ihan to diko
\text{his DEF american dream and DEF greeks haveIPFVp3p DEF own}
\]
\[
tous oniro....Ta onira ta dhielise o Republikanos GB.. their dream DEF dreams OBJ dissolveIPFVp3s DEF republican (name)
\]
\[
\text{WD used, as a slogan in his pre-election campaign, 'the American}
\text{Dream'. The Greeks also had their own dream... The republican GB}
\text{shattered the dreams... (T 29.12.88:44)}
\]

In example (312), the use of the slogan "the American Dream" is the background to the action 'shatter the dreams'. This can be graphically represented:

\[
\begin{array}{c}
\text{(312)} \\
\text{hristopipiose} \\
\text{dhielise}
\end{array}
\]

Fig.61 The saliency relationship of an IPFV and a PFV event.

Although the first event (hristopipiose 'used') is iterative/ habitual, the IPFV aspect is not obligatory. The choice of aspect is influenced both by the way the event itself is perceived and by its relationship to other events in the discourse. The effect of the IPFV here is that it serves as a background to the PFV event, thus giving the latter greater saliency.

Examples of this type are very common also in English:

\[(313) \quad \text{I was having (IPFVp3s) a shower when the phone rang (PFVp).}\]

The backgrounding function of the IPFV and the saliency of PFV events are neutralized when narratives are frontshifted (see 4.2). The result of such shifting
is that most PFVp events are rendered in the IPFVrp. The change of aspect is due
to the fact that the PFVnp only occurs in certain environments and never refers to
events AT S.

(314) enas mavros filakizete ja kapia apokotia tou, to
     ART black imprisonIPFVnp3s for some rush-action his OBJ

     skai ke sinanda mia kataksanithi Finlandheza...
     burstIPFV3s and meetIPFVnp3s ART INTS+bland finnish-woman

     a black man is imprisoned for some rash action, he escapes and
     meets a very bland Finnish woman...

     (J 3.2.88:20)

The saliency of the narrative PFVp is here traded for the immediacy of the IPFVnp.
Events encoded by the IPFV occur ‘AT R’ (unless the context indicates future
meaning). The effect of this form is that we experience each event in turn from
inside, as if it was happening at the moment of speech. Front-shifted non-past
and narrative past forms are freely mixed in Modern Greek, even within the same
sentence. Speakers can consequently use the meaning potential of the aspects
by combining front and backshifting with foregrounding/backgrounding.

Modern Greek, in contrast to English, also uses the PFCT in a
backgrounding function. PFCT is similar to IPFV in that it encompasses the
meaning of extension which make both aspects suitable as backdrop for other
events.

The text below contains an example of the PFCTnp in a backgrounding
function. As is usually the case with this form, it is non-obligatory and could be
replaced by the PFVp. The text occurs in a column which advertises new products
and the tone is tongue in cheek.
The text is the beginning of a short blurb about a new personal computer. It is apparent from the text that yuppies are associated with personal computers and other expensive gadgets. People used to think yuppies were fascinating (to read about), but now that feeling has faded. The writer is humourously referring to this when he says we should not reject progress in the form of yuppie gadgets (i.e. computers) just because we are tired of reading about yuppies.

A ‘linguistically naive’ native speaker of Greek explained to me that the PFCT is used at the beginning of a text ‘when you are going to say something more about it’. The beginning of a text is the appropriate place to ‘set the scene’ in terms of topic, time, place etc. The function of the PFCTnp (ehoun bi ‘have entered’) in (315) is just that: it sets the scene in terms of (unambiguous) time reference, as part of a topic nominating sentence. It provides the background against which the rest of the text is seen. The PFCT aspect is iconically suitable for backgrounded events because it refers to a time period, i.e. it has extension. The tense function of PFCT is not easily separated from its backgrounding function since both are involved in setting the scene.

The backgrounding functions of the IPFV and PFCT differ importantly in that an IPFV event usually functions as the background only to the following event. The PFCT backgrounding function, however, typically pertains to a larger chunk of discourse. I shall therefore refer to this complex function of the PFCT as ‘scene setting’ rather than backgrounding.
The second event in (315), which is encoded by a PFVp form (ehasan 'lost'), could also have been expressed by a PFCTnp. Just as the first event, it has some current relevance at S. However, the functions of backgrounding and setting of time reference have already been fulfilled, so there is (in the view of the encoder) not sufficient motivation for a PFCT to be chosen. Furthermore, the PFV gives the event more saliency. As a discrete event it will be perceived as complete and perhaps as occurring suddenly rather than over a period of time. It is worth noting that the PFVp form does not here mean a shift to a past point of reference. The non-past reference signalled by the PFCTnp continues throughout the text. The PFVp, ehasan ('lost') denotes an event PRE S, and S is also the point of reference for the following two events ('be' and 'reject').

The following text contains examples of the scene setting PFCT both in its past and non-past forms. The example text is an interview with an actress. The answer concerns the alleged pessimism of Tennessee Williams' plays and is quoted from the beginning:

(316) Dhen iha asholithi (PFCTp1s) poli me ton T.W., par'olo pou ine (IPPVnp3s) enas piiliis pou ton esthanome (IPPVnp1s) para poli kondino mou. Epeksa (PPVp1s) mono ti Margarita sto Kamino Real sto K.T.H.B.E., se skinothesia M.H. ke poli piso, se periodhia, omos me dhiko mou thiaos, iha anevasi (PFCTp1s) ton Jalino Rosso, erminevondas ti Laura, ti kori./I Pistevo (IPPVnp1s), lipon, oti ehi perasi (PFCTnp3s) enas hronos mias lapas omisvitisis, as poume, ja ton singrafen. Etsi, o T.W., epanerhete (IPPVnp3s) dhieithos stis skines dhinamika. Os pros to apesiodohkoses, ego pistevo, antitheta, pos dhen ine.

I hadn't dealt much with T.W., although he is a writer which I feel (is) very close to me. I only played Margaret in Camino Real at the (theatre), under the direction of M.H., and a long time ago, but with my own company, I had staged (staged) The Glass Menagerie, portraying Laura, the daughter.// So (Fr.'enfin') I think that a time has passed (full) of some doubt, let's say, about the author. So now, T.W. is returning forcefully, on an international level to the stage. As concerns his pessimism, I believe, on the contrary, that he is not.

(T 29.12.88:91)

The answer to the interviewer's question consists of two parts. The first part, up to the double bar (//) gives some background information about the interviewee's acquaintance with T.W. as a playwright. It is presumably this experience which will
give weight to the opinions expressed in the the actual answer to the question, contained in the second part. There is also a difference in temporal location between the first and the second part. The first part refers to experience gained in the more distant past while the second part concerns a less distant time period up to the present.

Diagrammatically the first part of the text can be analyzed as below:

**PART I:**

```
E"(E'S) E'S S
1. iha asholithi (had dealt) 1. Setting of past ref./ background.
     --------2. ime (is) 2, 3. Comment/ general time.
     --------3. esthanome (feel)
4. epeksa (played) 4. Cont. of past ref./ discrete past.

5. iha anevazi (had staged) 5. PRE past.
```

Fig. 62 Analysis of the "Interview Text", part I.

The more distant events are encoded by PFCTp (iha asholithi 'had dealt with'), PFVp (epeksa 'played') and again, PFCTp (iha anevazi 'had staged'). Inserted into the first sentence, after the first PFCTp event, is a comment referring to a situation which is valid at the moment of speech and thus relating to S. Such comments (events 2, 3) are typically independent of the time reference of the rest of the discourse. The PFVp event that follows (epeksa 'played') is perceived as related to the past point of reference set by the initial PFCTp (event 1) rather than to the present time of the comment. The speaker has not deemed it necessary to further emphasize the pastness of the event 'played' by using the PFCTp. In the sentence which follows however, an event (5) is mentioned which occurred before the past event encoded by 'played'. The PFCTp form iha anevazi ('I had staged') is therefore used to express its 'past in the past', or [+DIST], PRE R status.

Although either of the two PFCTp forms in fig. 62 could be replaced by a PFVp, the motivation for choosing PFCT is quite different. In the first case (event 1)
the PFCT is used to set the scene for the whole of part I (up to // in the text), while
the second PFCTp form (event 5) is used to clarify the PRE R status of the event.

The second part of the text shifts into the non–past:

\[
\begin{align*}
\text{PART II:} & \quad \text{6. pistevo (believe) 6. Comment/ general time.} \\
& \quad \text{7. ehi perasi (has played) 7. Setting of pres.ref./ background.} \\
& \quad \text{8. epanerhete (is returning) 8. Present event in progress.} \\
& \quad \text{9. pistevo (believe) 9, 10. Comment/ general time.} \\
& \quad \text{10. ime (is)}
\end{align*}
\]

Fig.63 Analysis of the "Interview Text", part II.

Part II starts with a comment predicate ('believe') and a pragmatic particle roughly
equivalent to French ‘enfin’, marking the end of the background information and
the beginning of the actual answer to the question. The PFCTnp (ehi perasi 'has
passed') signals a shift to non–past reference, at the same time providing the
background for the following sentence. The latter contains the IPFV event
(epanerhete 'returns') which could also have been encoded by either the PFCTnp
or the PFVp. The IPFVnp has been preferred to denote that the return of T.W. plays
is still in progress. The adverb ‘forcefully’ seems to favour this interpretation. The
final sentence wraps up the answer by making a comment with general time
reference.

Events 1 and 7 in the text analysed above are examples of the scene
setting function of PFCT aspect. The backgrounding function of PFCT, although
not easily separated from its other functions as marker of tense and aspect, is
nonetheless one of the factors motivating speakers of Modern Greek to choose
PFCT aspect.
5.7.2 Degree of generality: Iconic use 2 — PFV events and specific time.

The discussion concerning aspect on hypothetical events (5.6.2) showed that the PFVp always refers to past time whereas the IPFVp may refer to any time (see table 25). The PFVp is thus more specific in its time reference, the IPFV more general. The reason for this distribution is again to be found in the shape of the event intervals to which they refer: the PFV denotes discreteness, i.e. events which can be perceived as points, the IPFV unbounded extension, which can be perceived of as a surface or a continuous line. The PFV is thus iconically better suited to denote events which are in some way ‘specific’.

In Modern Greek, the PFV is said to be often accompanied by time expressions denoting points in time (see Mackridge, 1985 and others). More specifically, Mackridge writes that expressions denoting point in time typically take PFV “unless the verb denotes the background to another action” (ibid: 106). However, the interpretation of the time expression as either ‘point in time’ or ‘period in time’ is sometimes dependent on the aspect of the verb. What is more, the PFV seems to favour the interpretation ‘period in time’.

This was illustrated in 5.2.1 (231)–(232). The examples are repeated here for convenience:

(231) stis eksi epegrase
      in+DEF six signPFVp3s
      at six he signed

(232) stis eksi ipegrafe
      in+DEF six signIPFVp3s
      at six he was signing/ was about to sign

It was said that the time expression stis eksi (‘at six’) denotes some extension in (231), since events take time to take place and the PFV presents the event as having occurred in its entirety at that time. Another way of putting it is that the time expression in (231) serves as ‘background’ for the PFV event. In (232), on the contrary, the event itself is presented as having extension, presumably extending before and after the precise, non-extended point ‘at 6’.
Rather than saying that ‘point in time’ expressions are accompanied by PFV aspect, it would be more accurate to say that the PFV often co-occurs with expressions denoting ‘specific time’. However, the adverbial does not determine choice of aspect in any absolute way, as Mackridge himself points out. In (317), below, the adverbial ‘slowly’ might seem more compatible with the IPFV, the implication being that the dying process was of some duration.

(317) To ‘34 hasame ti mama. Esvise siga-siga...
DEF 34 losePFVps DEF mother extinguishPFVp3s slowly-slowly
ln 34 we lost mother. She died slowly...

(KT. 79:56)

The speaker has chosen the PFV to denote the complete trajectory of the process rather than its ‘internal structure’ (Comrie, 1976). The time adverbial, ‘in ‘34”, can only be perceived as a period of time within which the complete trajectory of the PFV event took place; it is not ‘a point’ but it is ‘specific’.

Events referred to by PFV are thus more often accompanied by a time expression referring to a specific time, as in (317), than are IPFV events. A more typical example is (318).

(318) To 1986 i kathodhiki tasi ton kikilchorion anakopike eno mesa sto
DEF 1986 DEF downwards trend DEF circulation halfPFVp3s while
inside in DEF

87 paratirithikan ta prota safi dhijmata anodhou.
87 noticePFVp3p DEF first certain signs rise

In 1986 the falling tendency of the circulation was halted while during 87 the first certain signs of an increase were seen.

(13.2.88:6)

The compatibility of PFV with the expression of factive events (5.6.1) and events at specific times demonstrated above can also be expressed in terms of ‘speaker’s mental standpoint’. This term is used by Mackridge (1985) who claims that IPFV is used when the mental standpoint is the “time of the action described by the verb”. Such an ‘inside view’ of the event is excluded by the discreteness of the PFV; the speaker stands “at a distance from the action” (ibid:104). The PFV
consequently presents the event as viewed from outside which causes it to be perceived as less subjective than the IPFV.

5.7.3 Degree of generality: iconic use 3 – PFV aspect and definiteness of participants.

The specific nature of the PFV may also condition the interpretation of associated nominals. The following examples from Veloudis & Newton (1980) show the interaction between aspect and definiteness of a participant.

(319) I ehaaloti prepi na dhitastoun, ohi na ektelestoun.  
DEF prisoners MUSTnp MA tryPFVnp3p NEG NA executePFVnp3p.  
The prisoners should be tried, not executed.

(320) I ehaaloti prepi na dhiroonde, ohi na ekteleunde.  
DEF prisoners MUSTnp NA tryIPFVnp3p NEG NA executeIPFVnp3p.  
The prisoners should be tried, not executed (both ex.s, ibid:13)

The PFV event in (319) denotes a discrete event not AT the point of reference. Being bounded, it cannot refer to an ongoing event ncr to generic events in open sets. This precludes a generic reading of the subject nominal. The IPFV aspect, in (320), expresses events which have unbounded extension and which occur POST the point of reference. It can thus denote open sets of generic, and/or iterative events. This makes a generic interpretation of the subject referent possible so that, in the generic reading, prisoners generally should be tried rather than executed, whenever the question arises. The reading of the IPFV can also be merely iterative, in which case the event will be seen as ongoing AT the moment of speech and a particular group of prisoners will be referred to. There are consequently two interpretations of (320): either prisoners in general should generally be given trials or else particular, existing prisoners should be given trials, one by one, perhaps as they are captured.

Veloudis & Newton reach the conclusion that while the PFV, in environments such as in the examples, can only have a specific (non-generic) reading, the IPFV is only interpreted as non-generic if the event is ongoing (AT R).
Otherwise the IPFV would receive a generic reading and thus the subject nominal in (320) would have a generic referent.

5.8 Summary of Modern Greek Aspect.

In table 26 below I have summarized the basic meanings and uses of the Modern Greek aspects discussed in this chapter. As is to be expected, the language specific meanings in the table below are compatible with the universal meanings (see chapter 2) and the uses of the aspects are compatible with the meanings.

<table>
<thead>
<tr>
<th>MEANINGS</th>
<th>$u$</th>
<th>$s$</th>
<th>$e$</th>
<th>$s$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E interval - $R$</td>
<td>Ev. Characteristics</td>
<td>Status</td>
<td>Disc. Function</td>
</tr>
<tr>
<td>PFV Discrete</td>
<td>Not necessarily AT $R$</td>
<td>Individual Complete Bounded Specific</td>
<td>Factive</td>
<td>Delictic Saliency Spec. ref.</td>
</tr>
<tr>
<td>IPFV Continuous</td>
<td>AT $R$ and beyond</td>
<td>Unbounded Extended Inceptive Potential Iterative Habitual Ongoing General</td>
<td>Unreal Subj.we</td>
<td>Backgroundering General ref.</td>
</tr>
<tr>
<td>PFCT Current Relevance</td>
<td>Up to $R$</td>
<td>Anterior Extended</td>
<td>(Unreal past)</td>
<td>Stage setting</td>
</tr>
</tbody>
</table>

Table 26 Summary of meanings and uses of Modern Greek Aspect.

The summary in table 26 makes it clear that perceived event characteristics and reality status as well as discourse considerations influence speakers' choices of aspectual realization.
5.9 A very brief comparison of Modern Greek and English aspect.

In this section I will point out some of the major differences between English and Modern Greek aspect.

One difference, discussed in depth in 5.3.4, is that the choice between PFV and PFCT is grammaticized to a larger extent in English than in Modern Greek. Thus, an English speaker has no choice in utterances such as (321) and (322):

(321) I was born (PFVp) in 1949.
    *have been born (PFCTnp)

(322) I saw (PFVp) him just now! two seconds ago.
    *have seen (PFCTnp)

The inadmissibility of the PFCT is due to the reference to finished time periods. In Modern Greek, finished time is not incompatible with PFCT aspect (see 5.3.4).

Another difference concerns the event interval referred to by PFCT aspect. In English it is more likely to be perceived as coinciding with, and possibly continuing beyond R than in Modern Greek. This accounts for the use of PFCT for ‘persistent situations’ in English, where Modern Greek would only allow IPFV.

(323) I have lived (PFCTnp) here for twenty years.

The subject in (323) might be in the process of moving out, but the important point is that (323) implies that she lives ‘here’ AT R.

The PFV and IPFV also differ between the two languages. In English PFV aspect (or ‘simple aspect’) is used for states and habits (which are inherently ‘statelike’) and ‘general truth’ statements which would, in the unmarked case, take IPFV in Modern Greek:

(324) He smoked (PFVp) twenty cigarettes a day. (habit)

(325) He was (PFVp) really very silly. (state)

(326) Water boiled (PFVp) at 95 degrees at that altitude. (gen. truth)

The reason for these differences is that the English IFFV is a Progressive and thus more ‘dynamic’ than the Modern Greek Continuous IPFV (see 2.2). The use of Progressive aspect implies that there is some input of energy which allows the
event to continue. The English IPFV is consequently rarely used on verbs which
denote inert perception & cognition, e.g. believe, and relational verbs, e.g. seem,
be. Used in the IPFV these verbs denote actions which are, to some extent,
volitional. The agent is an active participant supplying the required input of energy:

(327) He was really being \((IPFVp)\) very silly.

(328) They didn't suspect that I was understanding \((IPFVp)\) every word.

Situations such as (327)–(328) have sometimes been called 'temporary states'.
The perception of temporariness is due to the fact that the necessary input of
energy might (and probably will) cease at some point.

Events of the statelike category 'habit' can also be presented as
temporary:

(329) He is smoking \((IPFVp)\) twenty cigarettes a day.

The IPFV on habits in English emphasizes the state as it is at the point of
reference. In Modern Greek, where the IPFV is the unmarked encoding for habits,
one would have to add, for example, afo ton kero ('lately, these days') to put
across the same message as in (329).

The use of PFV for states, habits and general truth statements indicates
that the universal non-directionality of the PFV aspect is interpreted as denoting
'fixed' events, i.e. events which do not change. Rather than representing the
bounded – unbounded dichotomy as in Modern Greek, the PFV – IPFV in English
denotes the opposition between that which is fixed and unchanging versus the
dynamic.

It might be difficult to see imperfectively encoded 'bodily sensation' as
'dynamic':

(330) That's because its leg hurt \((PFVp)\) was hurting \((IPFVp)\).

(331) I heard \((PFVp)\) was hearing \((IPFVp)\) the trains in the distance

In most contexts there is little difference in meaning between the two aspects.
However, even here the Progressive IPFV contrasts with the 'fixed' PFV in that the
former (IPFV) cannot denote, for example, just the ability to hear as opposed to deafness, or a fixed habit. The subject deserves further analysis, which can, regrettably, not be accommodated within the constraints of this thesis. At the present stage of my analysis I would say that the extension meaning of the IPFV, applied to bodily sensation predicates in English is interpreted as an ‘inside view’ of the event. The PFV, in contrast, presents the event ‘from outside’.

A term which, perhaps, springs to mind is ‘interior structure’ (Comrie, 1979). I have deliberately not used it since it does not seem to me that ‘bodily sensation’ has any structure at all. (This topic was discussed in depth in 5.1.4.) Rather, this use is the closest English IPFV gets to being ‘continuous’, i.e. IPFV without input of energy (see 2.2). Despite this particular case, the English IPFV can only be classified as having Progressive meaning.

In conclusion, I am claiming that English PFV has the language specific meaning ‘Fixed’, denoting unchangeable and non–dynamic events and that IPFV has the language specific meaning ‘Progressive’, denoting change or temporary self–reproduction depending on the type of event. The discussion is summarized in table 27, which can be compared with table 22 in 5.1.5.

<table>
<thead>
<tr>
<th>Verb meaning</th>
<th>PFV aspect</th>
<th>IPFV aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity, Process</td>
<td>Fixed</td>
<td>P</td>
</tr>
<tr>
<td>Transition</td>
<td>events</td>
<td>I</td>
</tr>
<tr>
<td>Momentary event</td>
<td>X</td>
<td>G</td>
</tr>
<tr>
<td>Bodily sensation</td>
<td>outside view</td>
<td>in progress</td>
</tr>
<tr>
<td>Inert perception &amp; cognition, Relational verbs</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Fixed, timeless state</td>
<td>state</td>
</tr>
</tbody>
</table>

Table 27 The effect of aspect on verb meaning in English.
Chapter 6: Modality and other SUBJective notions in Modern Greek and a comparison with English.

This chapter deals with the expression of SUBJectivity in the Modern Greek TMA system, and to a lesser extent with the same phenomenon in English. [+SUBJ] notions, it will be recalled from 3.2, deal with events in the Imagined World and are egocentred. One typically [+SUBJ] notion to be discussed (in 6.1-7) is modality (see also 3.3-8). The encoding of different types of modality by modal verbs and particles will be described in specific sections on epistemic, dynamic and deontic modality (6.3-6). Sections 6.8-11 focus on different types of complements and on complement taking predicates and complementizers. The particle na is discussed in its function as complementizer and, in 6.12, as an independent pragmatic particle. The fact that this particle can denote all and only [+SUBJ] notions is seen as proof that SUBJectivity is indeed one of the main Organizing Principles in the TMA system of languages like Modern Greek and English. A comparison of the two languages is the topic of 6.13, which describes modality and complementation in English and contrasts it with Modern Greek. The last section, 6.14, is a summary of SUBJectivity.

6.1 The modal verbs.

Two Modern Greek verbs can be identified as specifically ‘modal’ on formal grounds. They are boro, which denotes ‘possibility’ in its widest sense and prepi, which stands for ‘necessity’ (cf.3.8). Convenient translations are ‘can’/’may’ for boro and ‘must’ for prepi. It should, however, be remembered that English has a greater range of modals so there is no exact translation equivalence. Either of the Modern Greek modals can denote dynamic, deontic and epistemic meanings depending on contextual and sometimes also syntactic factors. These
verbs differ from other verbs in being morphologically restricted as illustrated in
the following table:

<table>
<thead>
<tr>
<th></th>
<th>NECESSITY</th>
<th></th>
<th>POSSIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREPI</td>
<td>no &amp; pers.</td>
<td>3.s only</td>
<td>dyn/deontic: epistemic:</td>
</tr>
<tr>
<td></td>
<td>aspect</td>
<td>no distinction</td>
<td>all no. &amp; pers. 3.s only</td>
</tr>
<tr>
<td>tense</td>
<td>[+DIST]/[-DIST]</td>
<td>distinction</td>
<td>dynamic: deon./epist:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPPV -PFV no distinction (PFCT: non-mod.)</td>
</tr>
</tbody>
</table>

Table 28 The marking of number, person, aspect and tense on the Modern Greek modals.

Table 28 shows that there are restrictions as to the encoding of number and person on modal verbs. The necessity modal prepi ('must') exists only in the third person singular. This is also true of the possibility modal when it is used epistemically. It then takes the third person singular form bori ('may'). Such 'impersonal' forms are common on other expressions of modality in both Modern Greek and English:

(332) iparhi i pithanotita...
exist-np3s DEF likelihoood
it is possible...

(333) apokliete...
exclude-np3s
it is not possible/ it is out of the question...

Table 28 also shows that the aspect marking on modals is restricted. Only dynamic boro (willingness, ability, 'possible to', opinion) has aspectual distinctions. Reference time, in contrast, can be marked on both boro and prepi, i.e. both modals have [+DIST] and [-DIST] forms. Event time, finally, is encoded by aspect, as pointed out in 1.6. Only boro has aspectual forms and, consequently, only boro has the potential of being marked for event time.
The forms of the modals are given in table 29:

<table>
<thead>
<tr>
<th>NECESSITY</th>
<th>POSSIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREPΙ</td>
<td>BORΟ</td>
</tr>
<tr>
<td>dynamic/deontic</td>
<td>dynamic</td>
</tr>
<tr>
<td>A epistemic</td>
<td></td>
</tr>
<tr>
<td>[+DIST]  [-DIST]</td>
<td></td>
</tr>
<tr>
<td>eprepe  prepi</td>
<td></td>
</tr>
<tr>
<td>dynamic/deontic</td>
<td></td>
</tr>
<tr>
<td>A epistemic</td>
<td></td>
</tr>
<tr>
<td>1s borious boro</td>
<td>1s borious boro</td>
</tr>
<tr>
<td>2s borouses boris</td>
<td>2s borouses bories</td>
</tr>
<tr>
<td>3s bourse bori</td>
<td>3s bourse boresi</td>
</tr>
<tr>
<td>etc. etc.</td>
<td>etc. etc.</td>
</tr>
</tbody>
</table>

only following modal markers and certain conjunctions (see 6.2)

Table 29 Forms of the Modern Greek modals.

Table 29 illustrates the paucity of forms in the modal paradigms, especially as regards the necessity modal and epistemic modality. Especially dynamic boro is much closer than prepι to being like a non-modal verb, both morphologically and semantically. The table shows that it is marked for person/number and aspect.

Semantically, boro is not always modal. Although modalities typically express subjective assessments, boro used to denote ability is often perceived as an expression of an objective fact e.g. as manage. In this sense it never denotes any Uncertainty and is not modal.

(334) Dhoulẹsa boris stamatiọ ke etsi boresa na to workPFPVpIs without stop\ and so canPFPVpIs NA OBJ
telioso.
finishPFPVpIs

I worked without stopping and in this way I was able to (=I managed to) finish it.

The syntactically modal verb in (334) is, strictly speaking, non-modal in meaning in this context since it denotes an achieved event. It does not denote any Uncertainty or subjective evaluation. Non-modal readings are the rule for forms of
boro which have a PFV stem, i.e. PFVp, PFCTnp and PFCTp (e.g. boresa, iha boresi 'was able', 'had been able').

Prepi, in contrast, can only rarely be considered as expressing objective assessments. Other expressions of necessity seem to be preferred when an objective, non-modal reading is desired, for example:

\[(335)\] Ime aparētito na ehi kanis adhia paramonis.

be-np3s necessary NA have-np3s someone permit stay+GEN

It is necessary for one to have a residence permit.

The necessity expression in (335) is more likely to be taken to denote an objective assessment of the situation than is prepi. External obligation, e.g. legal obligation, is thus often expressed not by a modal verb but by alternative means as in (335).

To summarize, the verb boro ('can') has kept an inventory of forms closer to that of non-modal verbs while the necessity modal prepi ('must') has been reduced to two forms only. This may be explained by the fact that non-modal uses of boro, such as in (334), are common whereas this is not the case with prepi. Interesting to note is that the aspect most often used to express modality is the IPFV, which in chapter 5 was shown to be associated with unreal events and subjectivity.

6.1.1 The complements of modal verbs.

The complement of a modal verb in Modern Greek requires the complementizer na. The particle by itself can have a number of meanings, to be discussed in 6.2 and 6.10.2. The na-complement (minimally na+verb), which is used also with some non-modal predicates, has a finite and a non-finite use. What I mean by this is the following. The na-complement has both past and non-past forms (see fig. 4.8, below); hence it is finite. There are, however, predicates which take na-complements and which determine the time reference of their complement events, e.g. deontic/dynamic modals. Consequently, they take non-past complements to refer to events in past as well as non-past time (cf. Noonan, 1985:92). It is this use of the na-complement that I will call 'non-finite' (see
examples below). If the complement-taking predicate does not determine the time reference of its complement, then the complement is either past, for past events, or non-past, for non-past events, i.e. it is finite. An example of predicates which take finite complements is epistemic modals. That tense is marked independently on modal and complement means that epistemic modal verbs can use any of the forms of the na-complement shown in fig.48, repeated here from 4.1:

![Diagram showing the forms of the na-complement]

*Reference point
--- Perfective

Perfect

Imperfective

"only in finite complements (see below," Fig.48 (From 4.1) The Modern Greek NA-clause.

The verb in fig.48 is *grafa* ('write'). All forms are first person singular. The IPFV stem ends in -f, the PFV stem in -ps. The past suffix is -a, the non-past -o. *Eho* is the auxiliary verb 'have', past form: *iha* (see Joseph et al., 1987). Fig.48 can be compared with fig.48 (in 4.1), which shows the English infinitive.

Modals in deontic/dynamic use (e.g. permission, willingness) determine the time reference of their complement events and thus take complements which are unmarked for DISTance. They cannot be followed by a PFVnp complement verb, e.g. *naegrapsa* but can take any of the other forms in the rightmost paradigm in fig.48. Modals in epistemic use are not subject to such restrictions. They have finite complements and can thus be followed by any of the forms in the two paradigms of fig.48:

(336) prepī na erthi (epistemic or deontic)

must-np3s NA comePFVnps

She must come.
(337) Prepi na irthe. (epistemic)
    must-np3s NA comePFVp3s
She must have come.

(338) Prepi na ehi erthi. (deontic or epistemic)
    must-np3s NA comePFCTnp3s
She must have come.

In (336)–(338), na occurs before main verbs. It is also used before boro for
dynamic modality, as in (339) below, but it does not modify prepi nor deontic or
epistemic boro.

(339) Ithele na borouse na pari ena sahoulaki kolliwa.
     wantp3s NA canPFVp3s NA takePFVnp3s ART bag  boiled-wheat.
He wanted (= would have liked) to have been able to take a bag of
boiled wheat.

The unacceptability of, for example, *to can in English, contrasts with the
acceptability in Modern Greek of dynamic boro preceded by a complementizer
(na). As the translation of (339) shows, na borouse has to be paraphrased by an
infinitive form of be able.

In summary: the particle na corresponds sometimes to English to
(infinitive), sometimes to that. Epistemic modals take finite na–complements, while
dynamic/deontic modals take non–finite complements. Na can also precede a
modal verb, but only if it denotes dynamic modality. That it is dynamic modality only
which allows a construction common on non–modal verbs is explicable from the
fact that dynamic modality is the least subjective and thus least modal of the
modalities (see 3.5).

6.2 Modal particles

In Modern Greek, modality is also expressed by particles. They can have
different functions. Some are used as subordinators but there is also the ‘FUTURE’
particle tha which does not subordinate and uses of na in main clause
subjunctives (see 6.7.3). The modal adverbs isos (‘perhaps’ (affirmative)) and
mipos (‘perhaps’ (interrogative)) and a number of nominal expressions also denote
epistemic judgements but will be left out of the discussion due to limited space.
The particles which can denote modality or notions closely related to modality are, I would claim, the ones listed in table 30. What kind of modality they denote will be discussed below.

<table>
<thead>
<tr>
<th>Particle</th>
<th>Function</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tha</td>
<td>futurity, inference, tentativeness.</td>
<td>FUT</td>
</tr>
<tr>
<td>as</td>
<td>concession</td>
<td>CONC</td>
</tr>
<tr>
<td>mi(n)</td>
<td>epistemic or negated deontic</td>
<td>WNEN</td>
</tr>
<tr>
<td></td>
<td>modality, 'modal negation'.</td>
<td></td>
</tr>
<tr>
<td>an</td>
<td>conditional marker ('if')</td>
<td>COND</td>
</tr>
<tr>
<td>na</td>
<td>subjunctive marker</td>
<td>SBNV</td>
</tr>
</tbody>
</table>

Table 30 Modern Greek particles that may express modality.

What I am claiming is that the particles in table 30 are markers of types of subjective assessment. More precisely, they signal that the propositional content of the expression (verb, clause etc) over which they have scope is being subjectively assessed. This follows from the definition of modality given in 3.6 and repeated here:

DEF: Modality is a semantic category describing the speaker’s assessment of a proposition in terms of Necessity and Possibility (in their widest sense).

A few examples will clarify the functions of the particles. The glosses introduced in table 30 will be used from now on. The particles will be discussed briefly in the order they appear in the table.

**THA:** The particle tha, commonly used as a FUTURE marker, may also signal an assessment of the likelihood of the proposition, i.e. epistemic modality as in (340):

```
(340) Ellinas tha ine. Fenets!
greek FUT be-np3s be apparentIPFVnp3s
He must be Greek. It’s obvious!
```

In (340), tha signals a high degree of certainty. It is interesting to note that another of its functions is as a marker of tentativeness, for example when combined with either of the modal verbs.

**THA** is used as a pre-verbal element modifying the verbs boro and prep:

```
(341) (Tha) eprepe na isouna eki! (dynamic)
   FUT must-p3s SENV be-p2s there
   You should have been there!

(342) (Tha) prepi na itan pane{kolo}. (epistemic)
   FUT must-np3s SENV be-p3s all-easy
   It must have been very easy.

In (341) shows tha modifies an expression of dynamic modality (advice/opinion) while (342) exemplifies tha with an epistemic modal. In neither case is the particle obligatory on syntactic grounds.

Although the meaning difference is slight, speakers will express a preference for versions of utterances such as (341)–(342) either with or without tha, depending on the context. Due to the constraints on time and volume of this thesis, my comments on its function (below) can only be highly tentative at this stage. They are based mainly on the introspection of native speaker consultants.

One area which would require special attention in a future study is the interaction between the particle and intonation. The pattern of speaker preferences in different genres also needs to be further analysed. Frequency counts of modals preceded or not by tha (in its non-FUTURE function) would be one way to of doing this.

It seems that the particle tha before a modal verb makes the SUBJectivity of the complement more salient, indicating that the assessment expressed by the modal is grounded in Ego only. Since both SUBJectivity and modality are gradable notions, there is definitely a place for a mechanism, such as the use of tha, which clarifies or strengthens the subjective value of a modal verb.

**AS & MI(N):** The particle as denotes deontic modality and mi(n) can express epistemic or negated deontic modality:

(343) As erthi!
    CONC comePFVnp3s
    Let him/her come!
The distinction between concession and permission (deontic modality) is dependent on the context. The utterance in (343) could be a threat or a grudging permission, depending on the discourse situation. A prohibition can be expressed as in (344) by mi(n) plus verb. The same particle is used in (345) as an alternative to the non-modal complementizer oti ('that') plus tha (FUT), or the epistemic adverb mipos ('perhaps' (interrogative)). This use of negation with predicates of fearing is common in Modern Greek (Hesse, 198C:126) and crosslinguistically (Noonan, 1985). In addition, mi(n) is the marker of negation inside a na–clause, e.g. in complements of modal verbs. Elsewhere the negation is dhe(n):

(346)  Den boris  na figis.  
NEG canIPFVnp2s SBNV leaveIPFVnp2s  
You cannot leave.

(347)  Boris na mi figis an thelis.  
canIPFVnp2s SBNV NEG leaveIPFVnp2s COND wantIPFVnp2s  
You can 'not leave' if you want. (i.e. 'you don't have to leave.')

AN: The conditional particle an ('if') signals that the condition for the validity of the main clause proposition is a world whose existence is indeterminate (cf. 3.9–10). It denotes an assessment by the speaker of the possibility of the existence of the particular world in the sub-clause proposition and consequently satisfies the wider definition of modality presented in 3.9.

(348)  An ine Ellinas dhen briaze te adhia dhidhaskalias.  
COND be-np3s Greek NEG needIPFVnp3s permit teaching-GEN  
If he is Greek he doesn't need a teaching permit.

(349)  An itaa Ellinas dhen tha briazotan adhia dhidhaskalias.  
COND be-p3s Greek FUT need-IPFVp3s permit teaching-GEN  
If he were Greek he wouldn't need a teaching permit.
By the use of a past ([+DIST]) form, in (349), the speaker can signal the non-existence of such a world. The particle an ('if') by itself, in (348), signals the indeterminacy of existence of the particular world (see 3.9).

NA: The particle na has a variety of uses both as complementizer and in main clause subjunctives. One of its uses is to indicate epistemic modality or, more precisely, a speculative question:

(350) Na ime Ellinas? Ti les esi
      SBNV be-np3s Greek what sapIPFVnp3s you
Could he be Greek? What do you think?

It is also the complementizer which follows modal verbs, as shown above, for example in (346)–(347).

I shall be referring to na+verb as subjunctive (SBNV). The formal argument for this use of terms is based on examples such as (351)–(354) below.

(351) *Erthi mazi mou.
      comIPFVnp3s together me

(352) Thelo na'rhthi mazi mou.
      wantIPFVnp3s SBNV+comeIPFVnp3s together me
I want him to come with me

The first thing said to distinguish the subjunctive from the indicative is that the PFVnp, which does not occur at all independently (thus *(351)), is the unmarked form after na (Veloudis & Philippaki–Warburton, 1983) as in (352):

Secondly, na–clauses take the modal negation mi(n) whereas negation in indicative clauses is expressed by dhe(n) (ibid), as shown by (353) and (354):

(353) Dhen thelo na'rhthi.
      MEG wantIPFVnp3s SBNV+comeIPFVnp3s
I don't want him to come.

(354) Thelo na mi erhete.
      wantIPFVnp3s SBNV MNEG comeIPFVnp3s
I want him not to come.

As pointed out by Veloudis et al. (1983), mi(n) is the negation not only in na–clauses but also after concessive as:
The formal arguments, put forward by Veloudis & Philippaki-Warburton, are weakened also by the fact that the PFVnp occurs not only after na but also after the other particles in table 30 and after a number of conjunctions, e.g. otan ('when') in (356) below (see Hesse, 1980:30).

(356) Pez ton na bi mesa otan erthi.
sayIMP3s him SBMV enterPFVnp3s inside when comePFVnp3s
Tell him to go (straight) in when he comes.

Given the range of environments in which the PFVnp is permissible, its occurrence after na is only a weak argument for calling na+verb a subjunctive construction. A note on these environments is in place here. In addition to the particles in table 30, PFVnp is used following the expressions in table 31:

<table>
<thead>
<tr>
<th>ana</th>
<th>if/when</th>
<th>san</th>
<th>as soon as, when</th>
</tr>
</thead>
<tbody>
<tr>
<td>afou</td>
<td>after/when</td>
<td>ospou</td>
<td>until</td>
</tr>
<tr>
<td>ite - ite</td>
<td>whether - or</td>
<td>opios</td>
<td>whoever</td>
</tr>
<tr>
<td>molis</td>
<td>as soon as</td>
<td>opote</td>
<td>whenever</td>
</tr>
<tr>
<td>otan</td>
<td>when</td>
<td>opou</td>
<td>wherever</td>
</tr>
<tr>
<td>prin</td>
<td>before</td>
<td>opos</td>
<td>however, as</td>
</tr>
<tr>
<td>protou</td>
<td>before</td>
<td>osos</td>
<td>however much/many</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oti</td>
<td>whatever</td>
</tr>
</tbody>
</table>

Table 31 Introductives which allow PFVnp (see also table 30).

I shall follow Hesse, 1980, in referring to the particles and conjunctions etc. in tables 30 and 31 as introductives.

Interestingly, all the introductives which must precede the PFVnp verb denote one or more of the notions futurity, conditionality and likelihood. These notions, it was argued in 1.7.2, contain an element of Uncertainty (cf. Ullt, 1978). Temporal conjunctions like otan ('when'), for example, commonly indicate futurity. Concessive elements such as Modern Greek as ('let') and the indefinite relatives opios ('whoever'), opote ('whenever') etc., contain a conditional element. According to Quirk et al. (1985:8.7):
Concession..., can be seen as an ‘inverted’ condition—indicating circumstances in which a result would ensue irrespective of the content of the concessive clause.

Clauses initiated by indefinite relatives are, in Quirk et. al., described as ‘universal conditional-concessive clauses’, for this very reason (ibid: 15.42). It is said that such clauses “indicate a choice from any number of conditions”.

The particles listed in the earlier table, 30, also have in common the semantic element Uncertainty which requires a subjective assessment to be made, usually by the speaker. In the case of epistemic modality, the assessment places the proposition on a scale of likelihood. The particles tha (FUT), mi[n] (MNEG) and na (SBNV) have been shown to have such uses. Deontic and negative deontic modality can be expressed by CONCessive as or by mi[n] and na given a favourable context for such interpretations. The CONDitional particle an is also an exponent of modality in that it signals the indeterminacy of the existence of the world predicated in the protasis of a conditional sentence (cf.3.9). All the introductives, consequently, denote [+SUBJ] meaning. The main criterion for distinguishing na+verb as a subjunctive construction, put forward by Veloudis & Philippaki-Warburton (1983), namely the use of PFVn, seems rather to be characteristic of [+SUBJ] clauses generally.

Despite this, there is good reason for calling na+verb ‘subjunctive’; in contrast to all the other modal particles, na is not restricted to any particular meaning within the [+SUBJ] field. 6.8.2–3 will provide overwhelming evidence that na encodes all [+SUBJ] notions. It encodes events in the Imagined World, egocentredness and Uncertainty in a very general sense. (As a complementizer, its use is extended to an even more general notion of dependency, to be discussed in 6.8.2.) No other particle or verb comes even near to covering the whole [+SUBJ] semantic field. It therefore seems fully justified to refer to na as ‘the subjunctive marker’ and to na+verb as a ‘subjunctive’ construction.

We shall now consider the expression of epistemic, dynamic and deontic modality by verbal predicates and tha.
6.3 Epistemic modality

Epistemic modality was defined in 3.5 as "the speaker’s assessment of the likelihood of the proposition". It is expressed in Modern Greek by *(tha) prepi/*bori* for probability (‘probable/possible (that)’), and *(tha) prepi/*dhen bori* for ‘certainty’ (‘must/can’t’).

*Tha* on its own can also denote epistemic assessment, e.g. in predictions or in the apodoses of conditionals. In the latter case it asserts the prediction that given the fulfillment of the condition in the protasis the subclause proposition is valid. It denotes that the event is indeterminate (see 3.9). I therefore include *tha* in predictions and apodoses as an exponent of epistemic modality.

Epistemic modality is summarized in table 32.

| ![Table 32 Exponents of Modern Greek epistemic modality.](image) |

The matching of the descriptive terms, on the left in table 32, and modal exponents is only meant to give an idea of typical uses. The total context including intonation and discourse situation also affects the force of the modals. Table 32 also shows different tense forms of the exponents, except for *tha* which is a particle and thus not marked for tense.

(357) *Asfalos tha to dhiavase kapote.*

Surely *FUT OBJ readPPVpJs sometime*

Surely she would have read it sometime. *(Tz.1953:157)*
Apart from having epistemic uses on its own, as in (357), tha can also be combined with epistemic prepi or eprepe, and with borousè. The form bori cannot be preceded by tha.

Below are some examples of uses of the exponents in table 32.

(358) -Ti les esi? (Tha) borousè na itam sto
    what sap1PFVnp3s you FUT can1PFVnp3s SBNV be-p3s in+DEF

grafio tou?
o{fice his

-Ne. Bori.
yes can1PFVnp3s

-What do you think? Could he have been in his office?
-Yes. That's possible.

(359) Ohen borı na to ekane monos tou.
    NEG can1PFVnp3s SBNV DEF do-p3s alone his
He can't have done it by himself.

(359) illustrates the point made earlier that complements of epistemic modals are independently tensed.

The modal is [-DIST] and the complement verb [+DIST]. The [+DIST] marking is not temporal. Instead it encodes a lower degree of likelihood or a more tentative judgement than equivalent [-DIST] forms.

Fig.64 shows all the possible combinations of complements with the [-DIST] form borı or the particle tha for epistemic modality.

[Diagram showing the combinations of complements]

* Reference point
--- Perfective
Perfect
Imperfective

tha* can be replaced by 'bori na'.

Fig.64 Finite complements preceded by the epistemic expressions 'tha* or 'bori na'.
Asterisked tha can be replaced by bori na. The particle tha which derives from thelo + na ('want' + complementizer), takes a complement without na in Modern Greek. The options in fig.64 are thus, for example, in the lower right corner of the figure bori na grafi ('she may write') or the grafi ('she will/may write'). An exception is epistemic bori which does not combine with a PFVp complement (e.g. *bori na egrapse).

6.4 Dynamic modality

Dynamic modality was defined as "the speaker’s evaluation of the relationship of the actor to the outcome of the event." Table 13, repeated here from 3.5, lists types of dynamic modal relationships:

<table>
<thead>
<tr>
<th>Dynamic modal relationships:</th>
</tr>
</thead>
<tbody>
<tr>
<td>x is willing to do...</td>
</tr>
<tr>
<td>x is able to do...</td>
</tr>
<tr>
<td>it is possible for x to do...</td>
</tr>
<tr>
<td>it is advisable/best for x to do...</td>
</tr>
</tbody>
</table>

Table 13 (From 3.5) Dynamic modal relationships.

The relationship of the actor to the event can be one of willingness, ability, dynamic possibility or 'advisability'. Dynamic modality is the least subjective of the three modalities. Especially (judgements of) ability and willingness can be perceived as grounded in factors external to Ego and thus objective. It is questionable if one can even say that they are typically based on subjective assessment. These uses thus 'shade in' to non-modal meanings. Modals used to give advice or express opinion, on the other hand, are more subjective. Opinion is typically based on subjective assessment. Dynamic possibility ('possible to...'), finally, is intermediate between the other categories in degree of subjectivity. The realizations of dynamic modality in Modern Greek are the following:
Table 33 Exponents of Modern Greek dynamic modality.

The ‘ability/possibility’ use of boro is the only case where there is a choice of aspect on the modal. The [+DIST] PFV boresa will often have the meaning of a completed event, e.g. was able to do and did in which case the Uncertainty element which requires a subjective assessment to be made is gone and the expression is not modal. The same form can, however, denote dynamic modality in negative statements where the event is not realized:

{360} Dhen borese na mas pi.
\hspace{1cm} \text{NEG canPFVp3s SRV us sayPFVp3s}
\hspace{1cm} \text{He wasn't able to tell us.}

In such cases, the event is assessed by the speaker as having been a potential event and the modal denotes dynamic modality. The IPFV form, can be used for subjectively assessed habitual events as in one of the readings of the following example:

{361} Dhen borousa na mas pi.
\hspace{1cm} \text{NEG canIPFVp3s SRV us telIPFVp3s}
\hspace{1cm} \text{He wasn't \textit{ever} able to tell us.}

Dynamic boro is presented in fig.65, below. The assessment of the actor’s relationship to the event expressed by dynamic modality can concern a present, past, future or merely hypothetical event. Since reference time is marked on the modal and not on the complement, we find that dynamic boro has forms relating to each of the four points of reference in the TMA system:
The verb is presented in fig.65 without a complement. It would take a [-DIST] na-complement (right half of fig.48, see 6.1.1), since dynamic modals determine the time reference of their complement events. It is clear that the set of realizations is somewhat restricted. Most notable in fig.65 is the lack of PFCT. The PFV forms, e.g. boresa, tha boreso, may also have non-modal meaning but can express modality if the context favours such a reading (e.g. (360)).

It is the IPFV forms in fig.65 that most readily have a modal reading. A further indication that IPFV aspectual meaning is more compatible with modality than other aspects is the fact that epistemic and deontic modals have exclusively IPFV forms (see table 28). The ‘unbounded extension’ meaning ascribed to the IPFV in earlier chapters does indeed make it especially suited for modal uses. The modalized event is potential, future or otherwise unreal and thus open-ended which is compatible with this meaning. More generally, IPFV is the aspect which encodes the unreal and the subjective (see table 26, 5.8 and preceding discussion). The PFV, in contrast, is less suitable on modals because it denotes boundedness and is thus associated with facts. The PFCT, finally, is more often associated with completed events than with unboundedness. It is hardly surprising that aspect should interact with modality in a language where aspect is as salient
as in Modern Greek, and that especially the IPFV should be intimately associated with modal expression.

6.5 Deontic modality

Deontic modality was defined as the performatve equivalent of dynamic modality (see 3.6). When the modality of willingness, ability, dynamic possibility and 'advice' (see table 13, in 6.4) is used performatively it denotes permissions, requests, commands etc., i.e. deontic modality. It is essentially performatve and thus typically [-DIST]. But the same performatve notions can also be reported, e.g. in narratives or indirect speech, or contemplated and expressed in the form of conditionals. In such contexts, [+DIST] forms are used to talk about deontic modality. The forms of the deontic modals are presented below.

<table>
<thead>
<tr>
<th></th>
<th>[+DIST]</th>
<th>[-DIST]</th>
</tr>
</thead>
<tbody>
<tr>
<td>promise,</td>
<td>THA</td>
<td>THA</td>
</tr>
<tr>
<td>undertaking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>permission,</td>
<td>BOBOUSA</td>
<td>BOBO</td>
</tr>
<tr>
<td>concession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>obligation</td>
<td>EPREPE</td>
<td>PREPI</td>
</tr>
</tbody>
</table>

Table 34 Exponents of Modern Greek deontic modality.

Tha on its own can express deontic modality and it can also precede deontic modal verbs. Just as with dynamic modality the particle makes the subjectivity of the modal judgement more salient (see 6.2). A mand realized by tha prepi is thus potentially more 'emotionally loaded' than one with just prepi:

(362) (Tha) prepi na voithas tin maa sou!  
FUT must-np3s SBIV helpPPVnp2s DEF mother yours  
You must help your mother!

One informant suggested that the version of (362) with tha would be likely to be said in an admonishing, self-righteous way while the version without tha would be more neutral in these respects.
The complement of a deontic modal is dependent for its time reference on the governing predicate. It is therefore normally non-finite (but see also 6.9.4). The figure below shows the deontic modal form boris with na–complements. Boris is second person singular and [-DIST].

![Diagram showing the structure of boris na grapis with question mark in the complement.](image)

**Fig. 6.6** Non-finite complements preceded by deontic ‘boris’.

In fig. 6.6 both the modal and the complement are [-DIST], but the complement remains in this form even when the deontic modal is [+DIST]. I have not been able to find a context which would convincingly accommodate a deontic modal with PFCTnp complement. This form therefore has a question mark in the figure.

6.1–5 have described the forms of the modals and their complements according to modal category. In the next section it will be shown that categories often blend.

### 6.6 Blends of modal meanings.

One cannot always determine what kind of modal meaning pertains to a verb. Semantic overlaps or ‘blends’ occur, for example, when a modalized proposition is part of a conditional construction or otherwise hypothetical (cf. Halliday, 1970). The blend is especially noticeable when the modal is [+DIST] and precede by tha:

{(363)}  
Tha eprepe na pijenate mazi.  
FUT must-p3s NA go-IPPVp2p together  
You should have gone together. *(deontic/dynamic: contrafactual)*  
You should/had better go together. *(dynamic: advice, deontic: command)*
Out of context, the first reading of (363) is that it refers to past time. It can, however, refer to non-past time given a suitable context. It can be said to somebody who is on the verge of going somewhere alone. The discourse situation could then give (363) the force of a command (deontic) rather than that of advice (dynamic). The [+DIST] marking would denote tentativeness/politeness.

The same sentence can also be given an epistemic reading if we change the complement subject to third person plural:

(364) Tha epre pe na pijen na mazi.
FUT must-p3s NA go-IPPVpp3p together
They should have been going together. [dynamic: opinion]
They would have been going together. [epistemic: deduction]

A dynamic reading of (364) is possible, but it can also be interpreted as an assessment of the possibility that ‘they’ did ‘go together’. Although two readings can be said to exist, it may not be possible to say that either one of them is more correct in any given context. (364) is consequently not ambiguous between the two readings, it is simply a blend.

Since modal meanings blend in conditional or otherwise hypothetical contexts my previous claim that dynamic/deontic modals take non-finite complements needs to be qualified. When the semantic differentiation disappears, the distinction between finite and non-finite uses of the na-complement is no longer relevant. All predicates which take na-complements, and some which otherwise do not, can have [+DIST] na-complements in conditional or otherwise hypothetical contexts (cf. 3.2 and 6.8.2). The following rule can be formulated:

Na-complements are finite when the complement proposition is hypothetical but non-finite otherwise.

Since epistemically modalized propositions are hypothetical, their being finite follows from this general rule.

Interesting in this context is the observation made by Veloudis (1985) that a perception predicate can be followed by a past (i.e. [+DIST]) complement only if it is negated:
(365)  Ida na kolimbai
      seePFVp1s SBNV swimPFVp3s
      I saw him swim

(366)  *Idha na kolimbise
       seePFVp1s SBNV swimPFVp3s

(367)  Dhen idha na kolimbise
      NEG seePFVp1s SBNV swimPFVp3s
      I didn't see him swim

The affirmative idha (I saw) can only take a non-finite na-complement, as in (365) but not (366). The negated form is however admissible with a PFVp complement verb (PFVp does not occur in non-finite na-clauses, see fig.48, 6.1.1). Veloudis reaches the conclusion that the expression dhen idha (I didn't see) is epistemic, and that this explains its compatibility with past complements. (367) would thus mean ‘I didn’t see him swim, so I don’t know that/if he did.’ rather than ‘He swam’ and ‘I didn’t see it.’. The finding discussed earlier that hypothetical na-clauses are finite supports, and is supported by, Veloudis’ conclusion.

6.7 Summary of the modal verbs and the particle ‘tha’.

The description of Modern Greek shows that modality is a gradable notion from less subjective to more subjective. No sharp line can be drawn between modal and non-modal uses of modals. In the case of boro, the notions which are typically less subjective are encoded by a fuller paradigm of verb forms than typically more subjective notions. At one end of a scale of subjectivity, the ability meaning of boro has person, number, tense and aspect distinctions. At the other is epistemic bori which is only marked for DISTance, usually in a non-temporal sense.

Below is a summary of verbs and particles which realize various modal functions (table 35). The functions in the table are a representative sample. The realizations are those which typically pertain to a particular meaning.
<table>
<thead>
<tr>
<th>DYNAMIC</th>
<th>willingness/disposition: TBA</th>
<th>ability/poss. to: BORO</th>
<th>opinion/advice: PREPI</th>
<th>advice: NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEONTIC</td>
<td>promise/undertaking: TBA</td>
<td>permission/concession: BORO</td>
<td>obligation: PREPI</td>
<td>permission: NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>as neg.mand: WI(N)</td>
<td>concession:</td>
</tr>
<tr>
<td>EPISTEMIC</td>
<td>assumption/apodosis: TBA</td>
<td>speculation/poss.that: BORI/PREPI</td>
<td>deduction: DHEN BORI/ PREPI</td>
<td>speculation: NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>as an neg.poss.: WI(N)</td>
<td>condition:</td>
</tr>
</tbody>
</table>

Table 35 Some functions of modal verbs and particles in Modern Greek.

The modality is realized by modal verbs and thea and also by other particles, shown in the leftmost column in table 35. The context plays a crucial role for the interpretation of any of the modal realizations. Particles are especially context sensitive since they do not have marking for aspect, person or tense which may suggest a specific reading. Both deontic and epistemic modality can be expressed by a range of particles. They can be used both to reflect on the likelihood of propositions and to act on the world by giving permission, issuing commands etc. The particles, in other words, carry speech act information. This is a crosslinguistically common situation (see Sadock & Zwicky, 1985). On the other hand, they do not express the less subjective modal meanings of dynamic possibility ('possible (for somebody) to') and ability. Whereas modal verbs can sometimes be interpreted as denoting objective assessments, modal particles always carry [+SUBJ] meaning in Modern Greek.

6.8 Subjunctives and infinitives as encoders of SUBJectivity

We shall examine subjunctives and infinitives first from a crosslinguistic point of view and then in Modern Greek. The discussion will show that they do not, in fact, encode all or only irrealis events. Rather, they are crosslinguistically
common ways of encoding SUBJectivity. The similarity between the terms 'subjective' (SUBJ) and 'subjunctive' (SBNV) is unfortunate but their use is inevitable in the present analysis.

6.8.1 The subjunctive from a crosslinguistic perspective.

Lyons (1977) calls subjunctive the mood of 'generalized Non-Factivity', but the situation is more complex than this might indicate (see 3.2 and Kiparsky & Kiparsky, 1970 on 'factivity'). Languages often encode events that are undeniably irrealis or non-factive in the same way as realis or factive events ((368) & (369) respectively) and, conversely, realis events may be encoded by the subjunctive, as in the example from Spanish, (370):

(368) I hope (*the fact) that you will come too.

(369) I just emphasized (the fact) that you will come too.

(370) No es justo (el hecho) que vayas sola.

\begin{verbatim}
NEG me like-npl (DEF fact) that goSBNVZs alone
I don't like (the fact) that you go/are going on your own.
\end{verbatim}

The complement in (368) is under the scope of the non-factive predicate hope and thus its status is undetermined (see 3.9). Consequently, 'the fact that' cannot be inserted. Nevertheless, it is encoded by a that-clause – a typical realization of factive propositions. (369) allows the insertion of 'the fact', a sign that it contains a factive that-clause. Complements of 'comment: predicates' (see discussion of Noonan, 1985, below) such as es justo ('it is fair') in (370) have been said to be 'presupposed to be true'. To quote Garner (1971):

\begin{quote}
to say that a given statement presupposes a fact is to say that unless that fact obtains no such statement can be made. \cite{ibid:28}
\end{quote}

(370) consequently also has a factive complement but this time encoded by a subjunctive. Linguistically testable factivity and logically ascertainable reality status do not fully explain the distribution of subjunctive and infinitive encodings of complements.
In a survey of complementation Noonan (1985) suggests that languages choose one of three semantic distinctions as parameter for the indicative–subjunctive distinction: Assertiveness, Realis–Irrealis and Time Reference.

Table 36 “The three semantic distinctions underlying indicative–subjunctive oppositions.” (from Noonan, 1985:99)

Noonan’s terminology requires a brief explanation. There are said to be three different kinds of dependency between the higher predicate and its complement: time reference dependency, truth value dependency and discourse dependency. These dependency relations, inherent in the predicate, are said to underlie the distinctions made in table 36 and to be the basis for the matching of complement types (subjunctives and other types) to particular predicates.

‘Time Reference’, which has already been mentioned (see 6.3–5), refers to the fact that some complement-taking predicates indicate the reference time of the complement event whereas other such predicates do not. An example of a predicate which takes Independent Time Reference (ITR) complements, is know, as in:

(371) I know/knew that he jumped/is jumping/will jump.

Any combination of tenses is possible in (371).
On the other hand, the event in the complement may be dependent on the complement taking predicate for its temporal location. This is called Dependent Time Reference (DTR) in Noonan (1985) and is exemplified below:

(372) They told him to jump/*will jump.
(373) They began to run/*ran.

In (372) the complement event must be interpreted as occurring (if at all) after the higher predicate event. In (373) the governing event and a portion of the complement event must coincide in time so that both, in this case, are past events. These temporal relationships are not encoded on the complement verb but are inherent in the meaning of the complement taking predicate. The encoding of DTR complements is often done by the subjunctive. This is to be expected, since subjunctives are often non-finite. Languages that have infinitives also use these for DTR complements.

The second type of dependency posited by Noonan, called 'truth value dependency', is related to the realis–irrealis distinction in table 36 and is said to refer to whether or not the complement taking predicate expresses:

a kind of propositional attitude toward the truth of the complement

(ibid:95)

Predicates such as think, believe, doubt, deny and be possible take truth value dependent complements. It appears from the table that complements of positive predicates of this type ('positive propositional attitude') are considered to have realis status. Noonan's classification thus differs from that of, for example, Givón (1984) who considers complements of such predicates ('non-factive cognition', see 3.10) to be irrealis. The reason Noonan has chosen to group them with predicates which take realis complements is, perhaps, because languages tend to encode them as if they were realis. Still, I would agree with Givón that they are logically (or, in real world terms) irrealis. A solution which explains their encoding will be suggested below. Both authors agree that desideratives such as want and commands as expressed by tell somebody to take irrealis complements (in Givón's
analysis: 'complements of non-factive cognition' and 'non-implicative modality' respectively). As shown by table 36, DTR complements may function not only as indicators of time reference dependency but also of reality status.

In addition to these two parameters, Noonan posits the Assertiveness distinction (table 36). Included as assertive complements are complements of 'positive propositional attitude predicates', (374), 'assertion', (375), and 'report of assertion', (376).

(374) I believe that I am the best. \textit{(positive propositional attitude)}

(375) I pretend that I am the best. \textit{(assertion)}

(376) He says that I am the best. \textit{(report of assertion)}

Noonan states that in languages that have an indicative–subjunctive distinction there is a tendency for positive propositional attitude, (374), to have indicative complements while negative propositional attitude predicates, e.g. \texttt{doubt} may have subjunctive complements. Complements of so called 'comment predicates', e.g. \texttt{be sorry}, \texttt{be odd}, \texttt{regret} which judge or evaluate a proposition presupposed to be true are said to be 'backgrounded, factive' (see table 36). In languages that use the realsis–irrealsis distinction as a parameter for the distribution of the subjunctive these predicates are said to take indicative complements while, for example, negative propositional attitude predicates require subjunctive complements.

An example of a language that distributes its subjunctive–indicative according to the assertiveness distinction, is said to be Spanish while Russian reportedly takes the Realis–Irrealsis opposition as the parameter which decides when subjunctive is used. In Lori and Bulgarian the decisive parameter is said to be the DTR/ITR distinction.
6.8.2 The functional status of complements.

Noonan states that complements included in the category ‘assertive’ are not all ‘technically assertive’ (cf. Hooper, 1975) so it seems that this distinction is pragmatically/functionally based. That the ‘functional status’ of the complement can override its reality status in the ‘real world’, as suggested by the ‘assertiveness’ distinction in table 36, is evident from complements of ‘pretence predicates’, e.g. pretend, fool, imagine (see (375)). According to Noonan, these commonly take ITR complements in the languages of the world and in languages that have a subjunctive – indicative distinction they take indicative. In other words, their complements are encoded as if they were realis. Predicates which imply that the reality status of the complement is unknown such as desiderative predicates of the hope and wish types (but not want) and predicates of fearing, e.g. fear, worry also tend to take the same type of complements as those used for realis propositions (ibid:119–22). About pretence predicates Noonan says:

The reason for the indicative in these cases seems to derive from the fact that the pretence predicate establishes an alternative reality and the complement constitutes an assertion within that alternative reality. As an assertion it is coded in the indicative. This serves to emphasize the fact that it is the function of the complement and its relation with its CTP* that determine complement type, not entailment relations, as is often implied in the literature (e.g. Karttunen 1971, Kiparsky and Kiparsky 1970). *CTP= complement – taking predicate (Noonan, 1985:116, my bold print)

I would go even further than Noonan and say that the fact that a language encodes all realis and some irrealis complements the same way means that some predicates whose complements are irrealis (not only pretence predicates) are seen as positing an Alternate World expressed in their complements (I shall use ‘alternate’ rather than ‘alternative’). They differ from predicates which posit a Potential World, expressed in irrealis complements and encoded by subjunctives or infinitives.
(377) I believe that it is below market price. *(AV complement)*

(378) I want it to be below market price. *(POT complement)*

Alternate World events are in logical terms irrealis, i.e. located in the Imagined World, but are presented as alternate Material Worlds. They are therefore typically encoded by indicative ITR complements, as in (377). Potential world events are both logically irrealis and presented as such by being encoded by subjunctives or infinitives. This is illustrated in (378). A distinction clearly needs to be made between reality status in logical terms and the functional status of propositions, i.e. the way they are presented. Alternate World propositions may be encoded by [−SUBJ] complements although they are logically irrealis, while the equally irrealis Potential World may be [+SUBJ], as will be shown to be the case in both Modern Greek and English (6.11 & 6.13.3). In fig.67, the reality status of complements is related to function and to semantic status translated as degree of SUBJectivity.

<table>
<thead>
<tr>
<th>Reality Status</th>
<th>Functional Status</th>
<th>Semantic Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>REALIS</td>
<td>Factive</td>
<td>[−SUBJ]</td>
</tr>
<tr>
<td>IRREALIS</td>
<td>Alternate World</td>
<td>[+SUBJ]</td>
</tr>
<tr>
<td></td>
<td>Potential World</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Factive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contrafactive</td>
<td></td>
</tr>
</tbody>
</table>

Fig.67 Status of complements.

Although the reality status of complements may be fairly clear cut in logical terms (realis – irrealis), languages do not necessarily organize themselves only around these concepts. Propositions can be perceived and presented as being more or less part of the Material or Imagined World, and their expression as being more or less SUBJective. Complement propositions containing ‘potential events’ are more likely to be considered [+SUBJ] and thus to be encoded by the subjunctive, than are those that can be seen as ‘Alternate Worlds’.
Languages will, of course, differ on specific points. In Noonan's crosslinguistic analysis epistemic modals are considered propositional attitude predicates together with, for example, believe and doubt. English is one language which differentiates between modals and other predicates in a number of ways. One is that all modals take infinitive complements, usually without complementizer (so called 'bare infinitive') as in:

(379) It might be too late.

In the following three sections we shall investigate complementation in Modern Greek. Complementation in English will be discussed in 6.13.4–6, where a comparisons will be made with Modern Greek. Reference will be made to the distinctions introduced here between ITR and DTR complements and between Alternate Worlds and Potential Worlds.

6.9 A preliminary analysis of predicate type and complement choice in Modern Greek.

Modern Greek provides an interesting illustration of the correlation between complement type and the functional status of complements (see fig.67, above). Although Noonan (1985) claims that Modern Greek has only two types of complements (ibid:134), there are, in fact, at least three complement types, two of which are indicative. (This is not including paratactic complement clauses such as in, for example, try and do.) The indicative complementizers are pou and oti/pos. The two latter are usually treated as completely interchangeable and I shall henceforth refer to both as oti. In addition there is the complementizer na which can govern a finite or a non–finite complement (see 6.1.1).

A note on the terminology is in place here. The term 'na–clause' covers the use of na+verb both as complement and as independent clause (see 6.12). Na+verb is said to function as complement when accompanying an independent
verbal predicate. Both independent and dependent na-clauses will be referred to as ‘subjunctive’ (SBNV).

The non-finite na-complement is identical in function to an infinitive, but predicates which take such complements also occur with finite complement clauses in hypothetical environments (see 6.6. and 6.8.2). The best description of the situation would therefore seem to be that non-finite and finite na-complements are simply different uses of the same resource: the subjunctive.

To clarify the function of the different complement types in Modern Greek we shall examine predicate categories and the complements they select (see below, table 37). The data to be presented was obtained on the one hand by the analysis of texts, mainly from newspapers and magazines (see Text sources, following the list of References), and secondly by native speakers’ grammaticality judgements and introspective comments. For the grammaticality judgements, I constructed a questionnaire by putting the predicates in table 37 (at least two from each predicate category) in a sentence frame. The frame was: MARIA PREDICATE COMPLEMENTIZER GEORGE STEAL IT, from which were derived Modern Greek sentences translatable as, for example, “Maria is sorry that he stole it.” The variables on the printed questionnaire were 1/ the CTP, 2/ the tense on the CTP: PFVp or IPFVnp, 3/ the tense on the complement predicate: PFVp or IPFVnp, and 4/ the complementizer: oti (‘that’), pou (‘that’), na (SBNV), an (COND) or ke (‘and’). In table 37, oti, pou and na, which are especially relevant to the discussion of Subjectivity, are analyzed. In addition I asked my informants to test the sentences for acceptability with or without question intonation and with or without negation on the CTP. The main purpose of the questionnaire was to determine which complementizers were admissible with which predicates. The tense variation had the purpose of testing whether predicates were DTR or ITR and especially whether they would allow finite or non-finite na-complements.
There were three informants who worked with me one by one in several sessions of about one hour. When an item was judged inadmissible they were asked to correct it. This sometimes resulted in minor changes, for example, a change of aspect on the complement verb. Sometimes more radical changes were needed, e.g. from different subjects in the two clauses to same subject. If the change resulted in a grammatical sentence, and did not affect the validity of the item as a test item, it was deemed acceptable in the analysis. In addition to the comments made by my informants, I am also indebted to Iannis Veloudis (University of Thessaloniki) for additional pointers and examples.

The study is only preliminary in the sense that the results need to be compared with data from other linguistic and social contexts and with actual, spontaneous output. This would be especially important in the case of the complementizer pou.

I shall follow Noonan (1985) in referring to complement taking predicates as CTPs. The predicate types in the table below are those proposed by him, except that modal verbs are treated as separate categories. Perception predicates are treated as belonging to the category Knowledge & Acquisition of Knowledge (KAK) or Immediate Perception (IP). They are considered to denote KAK when the perception is mental/emotional and IP when it is immediate and physical.

Predicates have thus been classified according to use. The predicate vlepo (‘see’), for example, can denote KAK or Immediate Perception (IP):

\[
\begin{align*}
\text{(380)} & \quad \text{Ton idhe na to eklepse. (IP) } \\
& \quad \text{OBJ1 seePFVp3s NA OBJ2 steaPFVp3s} \\
& \quad \text{She saw him steal it.}
\end{align*}
\]

\[
\begin{align*}
\text{(381)} & \quad \text{Idhe oti to eklepse. (KAK) } \\
& \quad \text{seePFVp3s OTI OBJ2 steaPFVp3s} \\
& \quad \text{She saw that he stole it.}
\end{align*}
\]

The predicate ksero (‘know’) can denote KAK or Achievement:

\[
\begin{align*}
\text{(382)} & \quad \text{Kseri oti/pou to eklepse. (KAK) } \\
& \quad \text{knowPFVp3s OTI/POU OBJ steaPFVp3s} \\
& \quad \text{She knows that he stole it.}
\end{align*}
\]
(383) Kseri ma klepsi. *(Achievement)*
knowPFVap3s MA PFVap3s
She knows how to steal.

The classification is not without problems. Perception predicates especially are difficult to classify in Modern Greek. Predicates like *akouo* ('hear'), *vlepo* ('see') and *niotho* ('feel') will, according to the above criteria, be classified as KAK predicates when followed by *oti* ('that') but as IP predicates when followed by the subjunctive. In this case the complement type could be taken to determine the reading of the complement taking predicate (CTP) and thus its classification. In other cases, e.g. Phasal predicates, it would seem that predicate type determines the choice of complement; *start* and *continue* will take DTR complements (Modern Greek non-finite subjunctive) since the events of starting or continuing must necessarily coincide in time with the complement event, albeit partially. To avoid the circularity which is inevitable if predicates are seen as selecting complements or vice versa, the matching of predicates with complements should perhaps be seen, not as predicates governing complement choice but as a 'unification' process of mutually compatible units.
Predicates and complements combine in the following way in Modern Greek:

<table>
<thead>
<tr>
<th>PREDICATE TYPE</th>
<th>LEXEME</th>
<th>MA</th>
<th>POU</th>
<th>OTI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NF</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Fearing</td>
<td>fovame (fear)</td>
<td>x</td>
<td>?x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>anisihoi (worry)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretence</td>
<td>kano (make out)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ipokrinome (pretend)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prop. attitude</td>
<td>pistevai (believe)</td>
<td>?x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>amfivale (doubt)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utterance</td>
<td>leo (say)</td>
<td>?x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>rotao (ask)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dhiadhidheto (announce)</td>
<td>?x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge &amp;</td>
<td>ksero (know)</td>
<td>?x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition of</td>
<td>kschnaio (forget)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge (KAK)</td>
<td>niiotho (feel)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>katalavno (understand/notice)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commentative</td>
<td>lipoume (be sorry)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>metanoo (regret)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>enthousiazome (be enthusiastic)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epistemic Mod.</td>
<td>bori (possibility)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>prepi (necessity)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyn/Deontic Mod</td>
<td>boro (possibility)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>prepi (necessity)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desideratives</td>
<td>thelo (want)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>evhome (wish)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>elpizoi (hope)</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Manipulative</td>
<td>kano (make (sb do))</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>epitrepo (allow)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>apagorevome (forbid)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td>kataferno (manage)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>prospatho (try)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>thimame (remember to)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phasal</td>
<td>arhizo (start)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sinexhizo (continue)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediate</td>
<td>vilepo (see)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception (IP)</td>
<td>akouo (hear)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations:
F = finite complement  x = complement type acceptable
NF = non-finite complement  ?x = acceptable to some native spkr s only

Table 37 Predicate type and complement choice in Modern Greek.

The complementizers in table 37 are oti, pou and na. Na can be followed by a finite or a non-finite complement. My strong impression is that my consultants
considered **pou** to be substandard in many environments. The question marks may reflect a prescriptive attitude rather than actual usage. Nevertheless, table 37 reveals regularities in the way complementizers are used and also some exceptions, both of which will be discussed below.

Two general observations can be made on the basis of the information in table 37. Firstly, there is a clear grouping into predicates which take **na**-complements and those which take **oti**. Secondly, few predicates allow **pou** as a complementizer and only with one type, comment predicates is **pou** the generally preferred choice.

The fact that there are exceptions to the regular pattern (see, for example, predicates of fearing) indicates that the complementizers themselves are meaningful and that they differ in the meaning they convey. Below, I shall firstly attempt to determine these meanings. Secondly, the functional status of the complements (see fig. 67 above) will be discussed in relation to the meanings established in the preceding analysis and in the light of the parameters set up by Noonan (1985) for the subjunctive - indicative division (see table 36).

6.10 Complementizer meaning in Modern Greek.

6.10.1 **The meanings of POU and OTI.**

One question which arises from the result in table 37 is what the differences in meaning are between **oti** and **pou**, especially with KAK predicates and predicates of fearing. In some cases, **pou** can be given a causative interpretation. This is the case with **pou** following **anisino**.

\[
\begin{align*}
\{384\} & \quad \text{Anisino pou ine moni tis sto spiti.} \\
& \quad \text{worry PFVpoul Pou be-np3s alone her in-DEF house} \\
& \quad \text{I am worried that she is alone in the house.} \\
& \quad \text{I am worried because she is alone in the house.}
\end{align*}
\]

Is it possible that **pou** is causative while **oti** is not? With commentative predicates, e.g. **lipame** (be sorry), where only **pou** is allowed, a causative reading is possible.
However, if the causality is overtly expressed by *epidhi* ('because') the regret seems much stronger and less formulaic than with *pou*. The effect in Modern Greek is similar to that of replacing *that* by *because* in English.

(385) Lipasae pou irthes adhika.
*be sorry*PPV*POU come*PPV*PFV*P2s unfairly*
I am sorry that you came in vain.
?I am sorry because you came in vain.

The causality reading thus seems to be an effect of the meaning of the higher predicate rather than an inherent meaning element of *pou*. This is supported by cases where *pou* cannot be interpreted causatively as, for example, after *ksehnao* (forget):

(386) Ksehasa pou irthes adhika.
*forget-P*PPV*POU come-P*PPV*P2s unfairly*
I forgot that you came in vain.

Another hypothesis is that the parameter distinguishing *pou-* from *oti-* complements is factivity. Pou is the obligatory complementizer following commentative predicates (e.g. *be sorry*), which are said to take presupposed, 'backgrounded, factive' complements (see table 36). Nevertheless, Christidis (1981) rejects factivity as the distinguishing feature between *pou* and *oti* because:

(‘pou’) epilegete otan to kirie rima den theti to zitima tis alithias tis protasis.  
(2001:146)

or, in other words, that *pou* is chosen when the truth of the sentence is not an issue. This coincides with my own findings that *pou* is unmarked as far as factivity goes (see below).

Christidis claims that, instead of being a marker of factivity, *pou* denotes *immediacy*. This is consistent with its use after commentative predicates since the subject of a commentative predicate is an experiencer, often the speaker herself. The 'presupposedness' of the *pou*-complement means that factivity is not an issue. Pou does not mark factivity because it does not need to be marked. The examples below contrast *oti* and *pou*:
KAK predicates as in (387) and (388) can take either *pou* or *oti*. In the above examples, as in the wealth of utterances presented by Christidis, the difference between the two kinds of complementations cannot be satisfactorily explained by comparing the complements of *oti* and *pou* in terms of ‘activity’. Christidis reaches the conclusion that *pou* conveys knowledge gained in an ‘immediate’ manner. Often the immediacy would seem to lie in the involvement of the subject. (387) could mean “it slipped his mind...”. (388) could convey something along the lines of “he decided to forget...”. In (388) the event is a (to some extent) volitional action and the subject is consequently actively involved. In other cases discussed by Christidis, the immediacy consists in the saliency of the subject’s personal presence at the event:

(387) ἐστήκα τετελεσμένη τις ἐκείστιν τού. *(KAK pred.)*

(388) ἑστήκα περάσα τον ἑκείστιν τού.

Examples (389)–(390) are taken from Christidis (ibid:138). Although *pou* can collocate with *akouo* (‘hear’), it is not permissible in (390) since, in the given context, it refers only to the *knowledge* of the propositional content of the complement. The context implies that this knowledge was gained indirectly. In order for the complement proposition to be presupposed, so that *pou* can be used, the subject must have acquired the knowledge in a more immediate manner.

Before taking the analysis any further, we must pause to define what is meant by ‘immediacy’. In this thesis and as used by various authors referred to in this chapter, the term relates to the following notions:
(A) Involvement of higher subject in complement event.
(B) Spatio-temporal coincidence of higher subject & complement event
(C) Ego's involvement e.g. as assessor of 1/ the relationship of higher subject to complement proposition, and 2/ the truth value of the complement proposition.

Christidis (1981) argues for the immediacy meaning of pou mainly on the grounds of (A) and (B). Ego's involvement, (C), is referred to by Moschonas (1989) (see below), who considers that the particle na denotes immediacy. This will be discussed below. What I am arguing is that A, B and C share the notion of 'immediacy'. Further investigation would be needed to establish the exact relevance of this notion. Topics which would have to be addressed would be, for example, control, causality and modality and the extent to which they overlap in languages (see Zec, 1987 on control, Shibatani, 1976 and Talmy, 1976 on causality).

Christidis' claims do, as I interpret them, accord with my own view, that pou-complements are both less factive and denote greater immediacy than oti-complements. I would claim that both factivity and immediacy are better treated as gradable than as binary oppositions. Pou thus denotes some degree of both factivity and immediacy. The expression of one does not exclude the other. I would further argue that the degree of factivity and immediacy denoted by pou is neither high nor low. One can therefore justifiably claim that pou is unmarked in these respects. This will be further discussed in conjunction with na-complements (see fig.68 below).

If pou complements are unmarked for factivity, one might expect oti to be highly marked for factivity. This is, however, not the same as saying that the latter is a realis marker or that oti-complements denote facts. On the contrary, oti accompanies predicates which have as part of their inherent meaning the irrealis status of their complement predications, e.g. predicates of pretence and fearing (see table 37). The complementizer oti, I would claim, asserts the complement predication as a fact precisely because its reality status is undetermined (cf.
Christidis, 1982, and below). (My use of the terms ‘assert’ and derivations is very close to, albeit not identical with, established use, cf. Hooper, 1975 and discussion at the end of this section.) A complement with oti is presented not as a presupposed fact but as an Alternate World (see fig.67, above) and can therefore combine with CTPs which imply their irrealis status.

In summary, pou and oti have been found to differ in that the former denotes a higher degree of immediacy than the latter and a lower degree of factivity. Oti, on the contrary, can be said to be highly marked for factivity, if factivity is taken to be a functional label not referring to the reality status (in real world terms) of the complement proposition. It also denotes a lower degree of immediacy than pou.

6.10.2 Meaning of na.

In Christidis, 1982, the analysis of pou and oti is expanded to include na complements. The conclusion reached is as follows. Pou is said to take presupposed complements while the complements of oti are asserted and those of na non-asserted. Pou means that the complement proposition is objectively true for both the CTP subject and the speaker; oti means that the complement proposition is objectively true for the CTP subject only; na finally, means that the complement proposition is subjectively true, above all for the speaker, but also for the CTP subject. The formulation is in part my interpretation of a less explicit table which appears in Christidis’ article (ibid:65).

Christidis’ analysis can be seen to lend support to the claim made earlier that na is a [+SUBJ] marker (see 6.2 and fig.36 in 3.2). Firstly, it is said to denote subjectivity, in the every day sense of the word, involving Ego (the speaker) as assessor. Secondly, it does not refer to the factivity (or not) of complement propositions nor is it followed by presupposed complements. Therefore, it is especially associated with Uncertain events. It is also seems clear that na denotes
a higher degree of immediacy than either oti or pou since only na makes the
attitude of the speaker more salient than that of the CTP subject:

(391) m'aresi pou kolimbane. (comment predicate)
me+please POU swimIPFVnp3p
I like it that they swim/ their swimming.

(392) m'aresi oti kolimbane. (comment predicate)
me+please OTO swimIPFV3p
I like it that they swim.

(393) m'aresi na kolimbane. (desiderative predicate)
me+please1PFVnp3s SBVN swimIPFVnp3p
I like them to swim.

M'aresi (literally: 'it pleases me') in (391)–(392) simply comments on the fact
(asserted or non-asserted) that 'they swim'. (393), in contrast, seems to contain
an element of 'speaker authority'. Whereas areso ('like') is commentative in
(391)–(392), it can be understood as a desiderative predicate when na is used in
(393). (393) might be said by somebody with the authority to decide whether or not
'they' do swim and it might be said whether or not the swimming has actually taken
place. It could even mean "I like the idea...". The subject is actively involved as a
giver of command or opinion. The na–complement certainly conveys immediacy of
the knowledge or perception (of events) of the agent/subject; a greater immediacy
even than the pou–complement in that it may be expressing the subject's opinion or
perception of a non-factive event.

The immediacy meaning of na and the fact that most na–complements are
non-finite are closely linked. Noonan and Bavin–Wooock (1978) remark on the
connection between Dependent Time Reference and control factors:

Typically associated with DTR is some sense of involvement
or control on the part of the subject of the matrix clause with
the state of affairs discussed in the complement. (ibid: 118)

To that should be added that not only the involvement of the subject, but also that
of Ego, the speaker, makes a DTR complement more likely.

A linguist who argues for the immediacy interpretation of na on the grounds
of Ego involvement is Moschonas (1989). The author analyzes the occurrence of
oti, pou and na as complementizers of ‘what is termed ‘immediate perception’ verbs within the framework of situation semantics. Moshonas’ use of the term ‘immediate perception’ differs from Noonan’s in that the former’s analysis is concerned with verbs like vlepo (see) and akouo (hear) both as what Noonan would call IP and KAK predicates. Some examples from Moshonas (1989:331) are the following:

(394) 0 Stamatis idhe oti kapis ekrive ta klopiac.
ART (name) seePFVp3s OTI somebody hideIPPVp3s DEF loot
Stamatis saw that somebody was hiding the loot.

(395) 0 Stamatis idhe pou kapis ekrive ta klopiac.
ART (name) seePFVp3s POU somebody hideIPPVp3s DEF loot
Stamatis saw that somebody was hiding the loot.

(396) 0 Stamatis idhe kapon na krivi ta klopiac.
ART (name) seePFVp3s somebody SBNV hideIPPVnvp3s DEF loot
Stamatis saw somebody hiding the loot.

Perception verb+oti, as in (394), is said to denote not only the perception, but also the knowledge of that which is perceived, whereas pou as complementizer, (395), denotes that (the content of) the complement proposition is presupposed i.e. the knowledge of that which is perceived is not in question. As regards the complement of a perception verb+na, (396), the author concludes that it denotes a meaning closely linked only to the speaker’s perception. I take that to mean that na denotes the speaker’s assessment and direct reporting of the perception of the perceiving subject, whether speaker and subject are one and the same or not.

Moshonas’ findings support my claim that na denotes a higher degree of immediacy than either pou or oti. In conjunction with perception verbs it expresses not only the spatio–temporal coincidence: perceiving subject – propositional content, but also Ego’s assessment of the same.

The meaning relationship between oti, pou and na is summarized in fig.68 below.
Fig. 68 shows the unmarkedness of the pou complementizer relative to the most ‘immediate’ [+SUBJ] na and the factive, [−SUBJ] oti. That na should denote greater immediacy of knowledge is consistent with its having [+SUBJ] meaning. A thorough discussion of this point is included in 6.8.3 on the Modern Greek na-clause, where main clause subjunctives are shown to have a number of ‘interpersonal’ functions including those of polite imperatives and requests.

An apparently conflicting opinion concerning the meaning of na is expressed by Veloudis (1987). He discusses the fact that, with very few exceptions, na is optional before mi(n) in second person (singular and plural) only.

(397) na mi figo
     NA WNEG leavePFVnp1s
     Let me not leave.

(398) *mi figo
     WNEG leavePFVnp1s

(399) na mi figis
     NA WNEG leavePFVnp2s
     Don’t leave!

(400) mi figis
     WNEG leavePFVnp2s
     Don’t leave!

(401) na mi figi
     NA WNEG leavePFVnp3s
     Don’t let him leave!

(402) *mi figi
     WNEG leavePFVnp3s

The translations in (397)–(402) are not the only possible readings but show that negative requests and commands can both be encoded by na-clauses. The examples on the right are identical to the ones on the left except for the absence of na in the latter. Of these, only (400) is acceptable. Modern Greek negative imperatives are expressed by independent na-clauses, identical in form to na-complements. The particle is optional in the second person only (singular or plural). Veloudis shows quite convincingly that, in other cases where na varies with 0 (zero) its presence indicates that a third person, in addition to the interlocutors,
is present. The absence of na seems to denote a direct relationship between
speaker and addressee, without the presence of a third party. The conclusion is
that the presence of na denotes 'lack of directness'. I take 'directness' to have
the same meaning as the term 'immediacy' used above.

The contradiction between this characterization and my own is, I would
claim, only apparent. If immediacy is seen as a gradable notion and not as binary
opposition, then the absence of any complementizer at all could certainly denote a
higher degree of immediacy than the presence of na. An interesting next step
would be to investigate the meaning differences between predicate+na-
complement and predicate+gerundial complement (Modern Greek 'metoхи') to see
if the absence of complementizer can again be described as implying increased
immediacy. The space is unfortunately not sufficient for this question to be
pursued at present.

There is one more piece of evidence which indicates that the term
'immediacy' is in fact descriptive of the meaning of na. I can only touch on it very
briefly here, with some tentative suggestions as to future directions. Christidis
(1982) points out that, in certain contexts, na can collocate with IPFV aspect but
not with PFV:

(403) Ton idha na fevgi /*figi
     him seePFVPs SBNV leave/IPFVPn3s/ leave/PFVPs
     I saw him leave. (ibid:62)

An explanation for this is provided, I believe, by the definition aspe ctual meanings
in Modern Greek in chapter 5. The PFV was said to refer to event intervals 'not
necessarily AT R' while the IPFV referred to intervals 'AT R and beyond'. The
semantic similarity between 'immediacy' and the meaning expressed by IPFV
aspect would need to be further analysed. Nevertheless, I suggest that it is there. I
would suggest that in the environment of a perception predicate, as in (403) it is
the immediacy meaning of na which makes it incompatible with the PFVP, since the
PFV aspect could potentially refer to an event not AT the point of reference set by
the CTP. This could possibly be described, at a future date, as a process of unification.

A number of interesting and relevant issues have not been able to be included in the above discussion, e.g. the influence of the equi-subject variable (cf. Noonan & Bavin-Woock, 1978, on Lango) and the questions of causation and control (see e.g. Shibatani, 1976, and Zec, 1987).

6.11 Functions and encodings of complements in Modern Greek.

Having established the meanings of the complementizers, we shall now return to the pattern observed in table 37 and to some of the exceptions. The meanings of the complementizers should be able to explicate even their exceptional uses. In the course of the analysis it will also be shown how complementizer meaning links in with the functional status of the complements (see fig.67, above).

The complements of epistemic modals are finite na-clauses:

<table>
<thead>
<tr>
<th>Epistemic Mod.</th>
<th>bori (possibility)</th>
<th>prepí (necessity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na: of / POU / OTI</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

The complements of epistemic modals differ from other non-factive or contrafactive complements (e.g. those of permit) in that they are hypothetical. This classification is consistent with the claim made earlier that na-complements of modals are always finite when the complement proposition is hypothetical (see 6.6). Noonan (1985) also points out that hypothetical complements and their higher predicates tend to have independent time reference, thus requiring the former to be finite (see table 36). Not surprisingly therefore, epistemic modals are not the only predicates which can take finite na-complements. A hypothetical context may require a finite na-complement whatever complement a predicate normally takes. It was shown in 6.6. that an IP predicate, vepeo ('see'), can take such complements if negated (see (366)–(367) and used in an epistemic (or
rather 'evidential') sense. Another example of a hypothetical context is the
following (I am indebted to I.Veloudis for pointing this out to me):

(404) Dhen katalaveno na esfala.
    NEG understandPFVnplS SBNV be-at-faultPFVnpl
    I don't understand that I should be at fault. (or: I can't
    understand why I should be to blame.)

(405) Dhen ksero na efigan.
    NEG knowPFVnplS SBNV leavePFV3p
    I don't know whether they have left (or not).
    I don't know that they should have left.

The predicates katalaveno and ksero ('understand' and 'know' KAK) do not
normally allow na complements (ksero na usually means 'I know how to', i.e.
Achievement). The use of a finite na-complements in (404-5) is explained by the
hypothetical context. In both examples, the complement is presented as a
hypothesis towards which the speaker expresses a certain attitude.

Another category mentioned by Noonan (1985), but not included
separately in table 37, is that of 'negative propositional attitude'. Propositional
attitude predicates in Modern Greek usually takes oti as complementizer, but some
informants accept na as well:

<table>
<thead>
<tr>
<th>Prop.attitude</th>
<th>pistevo (believe)</th>
<th>NA: ni / F / POU / OTI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>/x</td>
</tr>
</tbody>
</table>

The acceptability of na increases if the higher predicate is negated.

(406) Pistevi oti to eklepse o Iorgos.
    believePFVnplS Oti OBJ stealPFV3p DEF (name)
    She believes that George stole it.

(407) ?Pistevi na to eklepse o Iorgos.
    believePFVnplS SBNV OBJ stealPFV3p DEF (name)
    ?She believes that George stole it.

(408) Dhen pistevi na to eklepse o Iorgos.
    NEG believePFVnplS SBNV OBJ stealPFV3p DEF (name)
    She doesn't believe that George stole it.

Noonan classifies complements of negative propositional attitude
predicates as irrealis and as tending to have Independent Time Reference (see
table 36). They would therefore be likely to take the same type of encoding as
hypothesis complements. The contrast between (407) with a positive CTP and (408), which contains a negated CTP, lends support to this claim. The reason native speaker consultants hesitated to accept (407) might be that she believes x is interpreted in the first instance as ‘she accepts x as a fact’. The negated CTP in (408) does not carry any such inference of assumed factivity and so it is more obviously acceptable with na. (407) becomes fully acceptable if it is supplied with a context which removes the inference. The modified translation shows the difference in interpretation:

(407) Pistevo na to eklepe o Iorgos.

believeIPFVprep3s SBMV OBJ stealIPFVprep3s O3P (name)

She believes that George must have stolen it.

(407) is acceptable if the complement is seen as expressing an epistemic judgement, i.e. if it is hypothetical.

The complements of a number of CTPs always denote potential events:

<table>
<thead>
<tr>
<th>Dynamic/Deontic Modifiers</th>
<th>Desideratives</th>
<th>Manipulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>boro (possibility)</td>
<td>thelo (want)</td>
<td>kato (make sb do)</td>
</tr>
<tr>
<td>prepi (necessity)</td>
<td>evhome (wish)</td>
<td>epitrepo (allow)</td>
</tr>
<tr>
<td></td>
<td>elpizo (hope)</td>
<td>apagorevome (forbid)</td>
</tr>
</tbody>
</table>

These complements are generally encoded by non-finite na-clauses. The predicate elpizo (‘hope’) is an exception among desiderative CTPs in that it can collocate with finite na-complements (cf. Noonan, 1985: 121–3 and comment above). Both evhome and elpizo can also collocate with oti but, it should be noted, when they do they are both translatable as ‘hope’. The complement predication of ‘hope’ can be presented as potential (non-finite na), or as either a hypothesis (finite na) or Alternate World (oti) which the speaker wishes to be/become true. The occasional use of thelo (‘want’) with a finite na-complement again confirms the claim that such complements are acceptable with most CTPs in hypothetical
contexts. The interpretation would be something along the lines: ‘I’d love it if...’, sometimes said with irony.

It is common crosslinguistically that non–finite complements are interpreted as referring to potential events (Noonan, 1985). An example in Modern Greek is the meaning of na–complements of predicates of fearing (see table 36 in 6.8.1 and cf. Noonan & Bavin–Woock, 1978, on Lango).

<table>
<thead>
<tr>
<th>Fearing</th>
<th>fovame (fear)</th>
<th>NA: if / POU / OTI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

English translation equivalents would usually contain a modal:

(409) fovame na erthi pali.
      fearIPFV3s SBNV comePPV3s again
      I am afraid that he might come again.

In Modern Greek, such potential complements often contain a modal negation:

(410) fovame na min erthi pali.
      fearIPFV3s SBNV NNEG comePPV3s again
      I fear lest he come again. (or:...he might come...)

However, the speaker thus has the choice of presenting the complement predication of predicate of fearing as referring to an Alternate World (oti), an established fact (pou) or a potential event (na with non–finite complement). The SUBJECTive nature of the complement proposition containing the potential event can be given more saliency by the use of a modal negation. (cf. Noonan, 1985:120, on the crosslinguistic use of negation with predicates of fearing.)

Not all non–finite na–complements present the proposition as potential. In some cases what is denoted is the spatio–temporal coincidence of the event encoded by the CTP and the complement event:

<table>
<thead>
<tr>
<th>Achievement</th>
<th>kafafreno (manage)</th>
<th>NA: më / POU / OTI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>prosphato (try)</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>thimame (remember to)</td>
<td>x</td>
</tr>
</tbody>
</table>

| Phasal           | arhizo (start)     | x                  |
|                 | sinehizo (continue)| x                  |

| Immediate Perception (IP) | vico (see) | x |
|                          | akwo (hear) | x |
Inherent in the meanings of achievement, phasal and IP predicates is the fact that the complement event will coincide with the event denoted by the CTP.

In summary, na has been found to present complement propositions as hypothetical (if finite), potential or co-incidental. In most cases na marks immediacy because of the involvement of either Ego (e.g. as 'assessor') or of the CTP subject, or both. All CTPs with coincidental complements have, or can have, a modal meaning component; IP predicates have an evidential use in Modern Greek (as also in English and many other languages), some achievement predicates are semantically close to dynamic modality. Phasal predicates, finally, which refer to only a section of an event trajectory, contain an element of Uncertainty – a common feature of modals.

The meanings of the complementizers have been established and their distribution has been discussed. In some cases the distribution may be non-predictable convention, but the overwhelming impression, if one considers the functional status of the complements, is one of regularity. The table below summarizes the typical uses of complementizers with certain CTPs and the functional status of their complements. The same categories of predicates as in table 37 have been used.
<table>
<thead>
<tr>
<th>Complement Taking Predicates</th>
<th>Complement Taker: C.tizer meaning</th>
<th>Complement: Status/Encoding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretence: ipokrinome 'pretend'</td>
<td>OTI: Asserted as Fact</td>
<td>AW [-SBJ] (finite)</td>
</tr>
<tr>
<td>Prop.attitude: pistevō 'believe'</td>
<td>AW</td>
<td></td>
</tr>
<tr>
<td>Utterance: leo 'say'</td>
<td>AW</td>
<td></td>
</tr>
<tr>
<td>KAK: ksero 'know'</td>
<td>POU: Fact</td>
<td>AW/ F [-SUBJ] (finite)</td>
</tr>
<tr>
<td>Commentative: lipas 'be sorry'</td>
<td>F/ POT</td>
<td></td>
</tr>
<tr>
<td>Epistemic modals: bori 'may'</td>
<td>MA: Immediacy</td>
<td>HYP [+SUBJ] (finite)</td>
</tr>
<tr>
<td>Dyn/Deon. modals: boro 'can'</td>
<td>POT</td>
<td>[+SUBJ] (nor- finite)</td>
</tr>
<tr>
<td>Desideratives: thelo 'want'</td>
<td>POT</td>
<td></td>
</tr>
<tr>
<td>Manipulative: epitrepō 'allow'</td>
<td>POT</td>
<td></td>
</tr>
<tr>
<td>Achievement: katafermo 'manage'</td>
<td>CO</td>
<td></td>
</tr>
<tr>
<td>Phrasal: arhizo 'start'</td>
<td>CO</td>
<td></td>
</tr>
<tr>
<td>IP: akouvo 'hear'</td>
<td>CO</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations:**
- F = Fact
- AW = Alternate World
- POT = Potential World
- CO = CTP event and Compl.event coincide
- HYP = Hypothetical temporally.

**Table 38 Complement types: their functions and encodings in Modern Greek.**

Table 38 is based on the more detailed table 37, but exceptions have been left out in order to illustrate typical collocations of predicates with complementizers. In addition, CTPs generally can take hypothetical na-complements. The meanings of the complementizers are indicated under each one. It should be remembered that both factivity and immediacy were shown above to be gradable notions, so the use of these terms in table 38 is somewhat simplified. The capitals AW, F, HYP, POT and CO refer to the functional status of complements associated with a particular
complementizer (see also fig.68 and discussion above). The abbreviations are explained at the bottom of the table.

That the complementizer which is used for propositions positing an Alternate World (AW), i.e. oti, should be considered as asserting fact may seem contradictory but the reason has already been given. There is little need to mark factivity when the complement is presupposed to be true. The motivation for signalling that a proposition should be taken as fact is much stronger if the propositional content is non-factive. It is the contrast between the, in logical terms, irrealis status of most oti-complements and their functional status as Alternate Worlds which require an explicitly factive complementizer. Complements of KAK CTPs are always factive but can be asserted or not.

We are now in a position to determine how the distribution of complement types in Modern Greek corresponds to Noonan's prediction of the semantic distinctions which underlie the indicative – subjunctive opposition. Table 36 is repeated here (from 6.8.1) for convenience:

```
<table>
<thead>
<tr>
<th>Assertive</th>
<th>Realis</th>
<th>ITR</th>
</tr>
</thead>
<tbody>
<tr>
<td>-assertion</td>
<td>-report of assertion</td>
<td>-background</td>
</tr>
<tr>
<td>-pos. propositional attitude</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Assertive</th>
<th>Irrealis</th>
<th>DTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>-neg. propositional attitude</td>
<td>-hypothetical</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-commands, requests, intentions, desires etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Table 36 "The three semantic distinctions underlying indicative – subjunctive oppositions." (from Noonan, 1985:96)

The semantic distinctions posited by Noonan are clearly discernible in Modern Greek, if all four types of complements are taken into account. Non-finite na-clauses encode all DTR complements. Finite na-complements encode
hypothetical complements and can also encode negative propositional attitude. Pou introduces factive complements which are not asserted and oti factive, asserted complements.

The distinction which is, in my view, the least useful in Noonan’s analysis is the Realis – Irrealis distinction. It has been shown quite convincingly that subjunctives encode realis complements and indicatives irrealis complements. The disagreement may be more a problem of labelling than of intent. I have suggested the meaning ‘immediacy’ for the Modern Greek SBNV marker which collocates with all the types of complements Noonan refers to as irrealis.

As I indicated above, my use of the term ‘asserted’ is not identical to established use. Nevertheless, the overlap is considerable. Some of the categories in table 36 can be compared with classifications in Hooper (1975). There is considerable overlap between CTPs taking AW complements in table 36, and those considered assertive + factive by Hooper. CTPs with factive complements above are factive + non-assertive in Hooper and hypothetical CTPs are, generally speaking, considered non-assertive + non-factive.

I have attempted to carry out my analysis without a proliferation of new terms. Uncertainty, assessment by Ego, coincidence and World are some of the concepts which have already been used and discussed in earlier chapters. Further work might be able to reduce these terms in number without losing in clarity of description (and gaining in explicative power). An interesting project, outside the scope of this thesis, would be to explore complementation as a unification process involving primitive semantic components.

6.12 Independent NA-clauses.

In this section it will be shown that na-clauses can be independent expressions. Although free standing na-clauses can occasionally be ellipsed versions of complex clauses containing CTPs, they are usually not ellipsed in any
sense but directly generated, independent expressions. Na then functions as a pragmatic particle denoting [+SUBJ] meaning. We shall call such constructions ‘main clause subjunctions’.

The function of na in main clause subunctions is related to its meaning as complementizer. Main clause subunctions express the attitude of the speaker towards the propositional content. They express ego’s assessment of the proposition in a way which implies direct personal involvement. It is interesting here to compare (393) from the previous section (repeated below) with a main clause subjunction which is identical to the complement of the former:

\[(393)\]  
\[\text{I like them to swim.}\]

\[(411)\]  
\[\text{Let them swim!}\]

Na has a multitude of, what in a Hallidayan framework would be called, ‘interpersonal’ functions. I quote from Butler (1983) on Halliday:

...the experiential subcomponent is concerned with the expression of processes, circumstances, qualities and the like..... The interpersonal component serves to establish and maintain social relations.....(It) also includes the speaker’s comments on the probability, relevance, etc. of the message, and his attitude towards it.  

(ibid:47)

In independent clauses, na+verb conveys commands and requests, suggestions, wishes, wonder, indignation etc. (Hesse 1980:71). When the verb is [+DIST] the interpretation is usually that of unfulfilled events in the past or past likelihood. Below is a summary of na as pragmatic particle with the verb skotono (kill). English interpretations are given and context provided when necessary.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples:</td>
<td>[+DIST]</td>
<td>[-DIST]</td>
<td></td>
</tr>
<tr>
<td>Interpretations:</td>
<td>na tin skotone</td>
<td>na tin skotose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NA OBJ kill1PFVp3s</td>
<td>NA OBJ kill1PFVp3s</td>
<td></td>
</tr>
<tr>
<td>Hand</td>
<td>he should have killed her</td>
<td>he should kill her.</td>
<td></td>
</tr>
<tr>
<td>Deliberative Question</td>
<td>should he have killed her? (writer pondering the plot)</td>
<td>shall he kill her?</td>
<td></td>
</tr>
<tr>
<td>Wish/Curse</td>
<td>I wish he had killed her!</td>
<td>may he kill her!</td>
<td></td>
</tr>
<tr>
<td>Indignation/Wonder</td>
<td>(It was his best sow and) he killed her!</td>
<td>(fancy that) he killed her!</td>
<td></td>
</tr>
<tr>
<td>Narrative</td>
<td>he would have killed her! (wanted to/ was on the on the verge of)</td>
<td>(when my father heard heard about it) he (wanted to) kill her.</td>
<td></td>
</tr>
</tbody>
</table>

| Examples:         | -------------------|-------------------|
| Interpretations:  | na tin skotose     | na tin skotoni    |
|                   | NA OBJ kill1PFVp3s | NA OBJ kill1PFVp3s |
| Wondering Question| (do you think) he killed her? | (when my father heard heard about it) he began belting her. |
| Narrative         | -------------------|-------------------|

Table 39: Some uses of main clause subjunctives in Modern Greek.

I am not suggesting that the examples in table 39, or (411), are the result of deletion of a higher clause. On the contrary, I believe it is erroneous to see all independent na-clauses as governed by a preceding, albeit deleted, verb. This can be illustrated by the example below:

(412) Na e rthi o Petros.
     NA comePFVp3s ART Petros.
     Let Peter come.

In example (412) the subject is o Petros. The article is therefore in the nominative.

It would be possible to see (412) as an ellipted version of (413).

(413) Thelo o Petros na e rthi.
     want1PFVnp1s ART Peter NA comePFVp3s
     I want Peter to come.

But ‘Peter’ can also be seen as the object of the first verb (cf. Mackridge, 1985):
In this version the article is in the accusative and the verb ‘want’ cannot be omitted. Despite this, example (412) can be said to be the equivalent also of (414). A solution could probably be construed to explain the effect of the deletion on the underlying subject, if one found the arguments for deletion otherwise convincing.

A strong argument against the deletion view lies in the native speaker/hearer’s perception of the meaning content of utterances such as (412). Although native speakers of Greek, if pushed to provide a governing verb for (412) would choose a form of want, it is unlikely that such clauses are perceived as ellipted. Similarly, an English speaker could readily supply a subject for the verb in the expression let’s but would hardly perceive it as an ellipted form with a deleted subject. An overt agent and volitional verb in thematic position (e.g. I want us to go!) rather than a pragmatic particle (e.g. Let’s go!) creates a very different message in English as in Modern Greek (cf. Shopen, 1973).

Could free standing na-clauses be ellipted but at the same time directly generated, i.e. without having undergone a process of deletion? Such a view is put forward by Evans (1987) for what seems to be a similar case in Kayardild.

Independent na-clauses seem to fit the definition of what Evans (1987) has called ‘insubordinated clauses’. He gives examples of sentences in Kayardild with superordinate predicates plus complement clauses and says:

Now one frequently hears independent clauses that are morphologically identical to complementized finite subordinate clauses in the presence and distribution of complementizing case and in the range of verbal tense/mood categories available. I shall call these ‘insubordinated clauses’. In their choice of tense/mood, in the presence of ‘complementizing case’ and in the meanings speakers ascribe to them, these appear to be versions of the above clauses from which the main clause has been ellipsed. (ibid: 4.4)

Evans sees these ellotted versions as being generated directly rather than by a deletion process (cf. Shopen (1973), ibid). Since it is often not possible to specify
which of a number of possible elements have been ellipted, Evans suggests that instead there are ‘placeness constraints’ on such clauses and he shows how these can be formulated. In effect, these constraints delimit the interpretation of the clause grammatically, socially and in discourse terms. I find the notion of placeness constraints convincing and potentially very useful (see below).

Nevertheless, I have one objection to applying Evans’ views to Modern Greek. It concerns the term ‘ellipsis’. ‘Ellipsis’ implies, if not deletion, at least omission of some element. It would seem to make little sense describing the phenomenon we are dealing with here as omission unless the generated expression is perceived by speakers of the language as being incomplete. Independent na–clauses such as (411) or those in table 39 are not perceived as incomplete.

Na–clauses can be complete and independent clauses. I claim that they can be directly generated without a higher predicate and without an ‘empty’ higher predicate slot. If this is the case, then ‘ellipsis’ does not correctly describe their generation. I shall simply call them ‘independent’ na–clauses or ‘main–clause subjunctives’. The fact that some free standing na–clauses could be either fully independent clauses or clauses generated by a deletion or omission process does not invalidate the argument. The only way to account for all cases is to say that the speaker of Modern Greek can, if he chooses, directly generate independent na–clauses.

On the other hand, Evans puts forward the notion of ‘placeness conditions’ which could be very useful in the description of independent na–clauses. The author suggests that one needs to formulate grammatical, social and discourse placeness constraints. In the examples discussed above ((411) and table 39) one would have to take into account such factors as intonation contour and the relationship between discourse participants. The latter would presumably be dealt with in a social placeness constraint. An attempt to specify grammatical
placedness presents bigger problems and confirms that many free standing na-
clauses should not be seen as elliptical.

\{415\} Na pethane toso neos! \{wonder, disbelief\}
SBMV dieFPVp2s so young
That he should have died so young!

If (415) had been formed by the omission or deletion of a higher clause, then one
should be able to specify, in a grammatical placedness constraint, at least what
type of predicate could function as CTP of the na-clause in (415). However, there
seems to be no a priori reason why (415) should be a shorter version of (416)
rather than (417) or (418) below, or indeed of a whole range of other similar
expressions.

\{416\} Ine apithano na pethane toso neos!
be-np3s unbelievable NA dieFPVp2s so young
It is unbelievable that he should have died so young!

\{417\} Mou fenete apithano oti pethane toso neos!
me seeFPVp3s unbelievable OTI dieFPV2s so young
It seems unbelievable to me that he should have died so young!

\{418\} Dhen boro na to pistepso oti pethane toso neos!
NEG can1FPVp3s NA OBJ believeFPVp3s OTI dieFPV2s so young
I can't believe it that he died so young!

It is only if (415) is seen as an abbreviated version of expressions such as (416),
which contain the na-clause in (415), and not as a possible version of (417) or
(418) that it can be said to be 'ellipted'. Native speaker reactions to these and
similar examples suggest that this is not the case and so (415) is an example of
directly generated, independent na-clauses.

The examples (415)–(418) show that grammatical constraints specifying
higher predicates for independent na-clauses cannot be formulated. What is
needed is instead, first of all, a semantic placedness condition which specifies the
area of meaning of the particle na. The more exact interpretation of the expression
would then be specified by discourse placedness constraints. These would take
into account, for example, the genre in which the expression occurs. Social
placedness constraints would specify the relationship between the discourse
participants. The formulation of such constraints require further research and are, unfortunately, outside the scope of this thesis.

The importance of considering independent na-clauses as directly generated is that it places heavy emphasis on the semantic function of the particle na; the particle is seen as carrying meaning. I have claimed earlier (6.2) that na can best be described as denoting a general [+SUBJ] meaning. When the na-clause functions as a complement, it is mainly the CTP which constrains its interpretation within the [+SUBJ] field. In independent na-clauses, the exact meaning of the particle is given by its total context.

The fact that one single morpheme (na) covers the whole semantic area of modality/futurity/hypothesis and the fact that the same particle plays such a prominent role in encoding a range of speaker attitudes strongly supports the main argument of this chapter (see especially chapters 1 and 3), that one of the two most basic Organizing Principles of TMA systems is that of SUBJECTivity.

6.13 Modality and complementation in English and a comparison with Modern Greek.

6.13.1 Modal verbs.

Several in depth treatments of the English modals have been published in recent years, e.g. Palmer, 1979: Modality and the English modals., referred to in chapter 3, and Perkins, 1983: Modal expressions in English. I will therefore limit myself to a brief description of English modals and, in the following sections, a few comments on complementation.

The most striking difference between Modern Greek and English modality is the greater number of modal verbs in the latter language. In addition, the languages differ in that all English modals take non-finite complements whereas only dynamic/deontic modals take non-finite complements in Modern Greek. In
both languages the modals denote possibility or necessity and the same set of modals are used with dynamic, deontic and epistemic meaning.

<table>
<thead>
<tr>
<th>DYNAMIC</th>
<th>DEONTIC</th>
<th>EPISTEMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Modern Greek</em></td>
<td><em>Modern Greek</em></td>
<td><em>Modern Greek</em></td>
</tr>
<tr>
<td>willingness &amp; disposition:</td>
<td>undertaking &amp; promise:</td>
<td>assumption:</td>
</tr>
<tr>
<td>WILL/HABET</td>
<td>WILL/SHALL</td>
<td>WILL/THE</td>
</tr>
<tr>
<td>ability &amp; possible to:</td>
<td>permission:</td>
<td>speculation:</td>
</tr>
<tr>
<td>CAN/BORO</td>
<td>CAN/MAY</td>
<td>MAY/CAN</td>
</tr>
<tr>
<td>advice &amp; opinion:</td>
<td>obligation:</td>
<td>deduction:</td>
</tr>
<tr>
<td>SHOULD/PREEPI</td>
<td>MUST</td>
<td>MUST/CAN'T</td>
</tr>
<tr>
<td>OUGHT TO</td>
<td>PREEPI</td>
<td>DHEN BORI</td>
</tr>
</tbody>
</table>

Table 40 Exponents of three kinds of modality in English and Modern Greek.

In table 40, English realizations are compared with Modern Greek. The equivalences are not absolute since the discourse situation also contributes to modal meaning.

The function of *tha* is similar to that of English *will* in several ways. Both are used to mark future and the apodoses of conditionals. They also have a very general [+SUBJ] meaning which can be interpreted as referring to volition in a dynamic or deontic context or to the epistemic notion of assumption (table 40). In the case of Modern Greek, the particle can also be used preposed to a modal verb to emphasise the SUBJective element.

English possibility modals are *will*, *can* and *may* (including their [+DIST] forms) which correspond to *tha*, *boro/bori*. Necessity modals are *must* and epistemic *can't*, corresponding to *preepi* and epistemic *dhen bori*. (This is a rather loose, but I think, useful classification. For a precise definition of necessity/possibility, see 3.8) English *should* and *ought* are highly sensitive to the context sometimes tending more towards dynamic necessity (opinion, advice, (419) below), sometimes more towards epistemic modality (probability, (420) below).
(419) She should sell her place. (It is the best thing for her to do.)

(420) This should be her place (according to the map).

The English modal verbs mentioned above are not marked for number, person or aspect. It contrasts with Modern Greek boro (see table 28) which has number/person and aspect marking when not used epistemically. In addition to the modals there are in English what can be called semi-modals, for example have to, dare and need and modal expressions such as be bound to which express modality but resemble main verbs in that they have (or can have) third person singular -s and a PFCT - PFV - IPFV distinction. The discussion below does not refer to semi-modals except when explicitly stated.

6.13.2 Modals and tense.

Modal verbs in English are marked for reference time, i.e. they have [+DIST] and [−DIST] forms. In this they are similar to Modern Greek modals. Temporal and non-temporal meanings of the [+DIST] forms are largely predictable from the notion of DISTance. They are generally more tentative or denote lower likelihood than the [−DIST] forms. Nevertheless, varieties of English differ in this respect. In Australian English the preferred verb realization of epistemic possibility is might and some speakers claim not to use may at all (cf. Collins, 1988 for a quantitative study of modality in Australian English). In this case, one would have to say that the [+DIST] marking no longer functions as such, i.e. it has been neutralized. Other interesting cases are should and ought to. The function of the former is rarely that of a [+DIST] counterpart to shall (but cf. Perkins, 1983:55). Rather, both verbs are more tentative forms of the obligative must. In addition, they can be used epistemically to denote assumption.

Event time is marked on the complement of English modals and not on the modal. The so-called semi-modals differ also in this respect. Since they have full aspectual distinctions they can also be marked for event time.
(421) *I have must do it three times already.

(422) I have had to do it three times already.

The PRE R sequence of the event in the above examples can thus only be expressed by the semi-modal have to as in (422). The [+DIST] forms of this verb are, in fact, used as the past of must which does not itself encode the DISTance distinction.

All modal complements in English are non-finite. This state of affairs is crosslinguistically atypical, according to Noonan’s findings (Noonan, 1985). His claim is that epistemic modality typically takes complements with independent time reference as do other predicates in the category ‘Knowledge and Acquisition of Knowledge’, e.g. believe, understand. Dynamic/deontic modals, in contrast, are said to usually take complements which are dependent for their time reference on the higher predicate. Modern Greek thus conforms to the general crosslinguistic trend in this respect while English deviates by having all non-finite modal complements.

6.13.3 Non-subjunctive complements.

The discussion of complementation which follows is only a brief overview, intended to give the reader some idea of the differences and similarities between English and Modern Greek. The main topic will be the distribution of that-clauses and infinitive complements, with or without the complementizer to.

The function of the English infinitive is very similar to that of non-finite na-clauses in Modern Greek in that it is the preferred [+SUBJ] complement. In English there are other options which have ‘traditionally’ been called subjunctives, and these will be discussed in 6.13.4.

In table 41, the same predicate categories as those employed in the analysis of Modern Greek are used, as far as possible, to allow a comparison to be made between the two languages.
<table>
<thead>
<tr>
<th>Predicate Type</th>
<th>Lexeme</th>
<th>Oinf</th>
<th>TOinf</th>
<th>That</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NF</td>
<td>NR</td>
<td>F</td>
</tr>
<tr>
<td>Fearing</td>
<td>fear</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>worry</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Pretence</td>
<td>make out</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>pretend</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Prop. attitude</td>
<td>believe</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>doubt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utterance</td>
<td>say</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>announce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge &amp; Acq. of Knowl. (KAK)</td>
<td>know</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>forget</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>understand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commentative</td>
<td>be sorry</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>regret</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Desideratives</td>
<td>want</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>wish</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>hope</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Manipulative</td>
<td>allow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>forbid</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Achievement</td>
<td>manage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>try</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>remember(to)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phasal</td>
<td>start</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>continue</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Immediate</td>
<td>see</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Perception</td>
<td>hear</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Modality</td>
<td>possibility</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>necessity</td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Abbreviations:
- F = finite complement
- THAT = that-clause
- NF = non-finite complement
- TOinf = infinitive with to
- x = complement type acceptable
- Oinf = infinitive w/o to

Table 41 Predicate type and complement choice in English.

The table shows the typical distribution of three complement types in English: that-clauses, infinitive with to and bare infinitive. Participial -ing complements are not included for reasons to be discussed. Noonan's crosslinguistic predicate categories (Noonan, 1985) have been used except that modal verbs are treated separately. Table 41 can be compared with table 37 on Modern Greek complementation.

The categories Knowledge and Acquisition of Knowledge (KAK) and Immediate Perception (IP) present similar problems of classification in English as in Modern Greek. IP predicates can take bare infinitives as complements (and also
-ing complements) while KAK predicates cannot. On the other hand, both KAK predicates like know and KAK/IP predicates like see and hear take that-complements.

(423) He saw her kick the dog. (IP, coincidence)
(424) He saw that she had kicked the dog. (KAK, no coincidence)
(425) He saw that she kicked the dog. (KAK or IP?, coincidence)

An infinitive complement of the CTP see, as in (423), can only denote an event coincidental with the event expressed by the CTP. That-clauses in the same environment carry no such implication. They simply denote the knowledge of the event. (423)–(425) thus illustrate that there is good reason to treat perception predicates like see as denoting IP when followed by an infinitive and as denoting KAK when followed by that.

Another example of predicates belonging to more than one predicate category is the pair remember and forget. They denote KAK when followed by that (or by about+-ing) but Achievement predicates when they take infinitive complements:

(426) They remembered to send it by certified mail. (Achievement)
(427) They remembered that they sent it by certified mail. (KAK)

The infinitive complement in (426) refers to an event which coincides (non-centrally) with the event denoted by the CTP. It implies that the 'remembering' continued until the complement event had started and thus that the complement event was achieved. Remember (to) is thus an achievement predicate. The same verb used with a that-clause, as in (427), denotes the knowledge of the propositional content, rather than its achievement. Remember (that) is a KAK predicate. Forget differs from remember in that it denotes knowledge not only acquired but also lost.

Complement choice in English is summarized in table 42, below, which can be compared with table 38 for Modern Greek.
<table>
<thead>
<tr>
<th>Complement Taking Predicates</th>
<th>Citizer meaning</th>
<th>Complement: Status/Encoding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretence: pretend, make out</td>
<td>THAT: Asserted as Fact</td>
<td>[+SUBJ] (finite)</td>
</tr>
<tr>
<td>Prop.attitude: believe, doubt</td>
<td>AW</td>
<td></td>
</tr>
<tr>
<td>Utterance: say, announce</td>
<td>AW</td>
<td></td>
</tr>
<tr>
<td>KAK: forget, know</td>
<td>Fact</td>
<td>[-SUBJ] (finite)</td>
</tr>
<tr>
<td>Commentative: be sorry, regret</td>
<td>F/POT</td>
<td></td>
</tr>
<tr>
<td>Desiderative: want, wish, hope</td>
<td>INF: AW/ [+SUBJ]</td>
<td></td>
</tr>
<tr>
<td>Manipulative: allow, forbid</td>
<td>Immediate POT (non- finite, with TO)</td>
<td></td>
</tr>
<tr>
<td>Achievement: manage, remember(to)</td>
<td>CO</td>
<td></td>
</tr>
<tr>
<td>Phrasal: continue, end</td>
<td>CO</td>
<td></td>
</tr>
<tr>
<td>IP: see, hear</td>
<td>CO</td>
<td>[+SUBJ] (non- finite, bare)</td>
</tr>
<tr>
<td>Modality: can, may</td>
<td>POT</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations:
- F = Factive
- POT = Potential World
- AW = Alternate World
- CO = CTP event and Compl.event coincide
- HYP = Hypothetical
- Temporally.

Table 42 Complement types: their functions and encodings in English.

As in Modern Greek, there is a major split between CTPs which take [+SUBJ] and [-SUBJ] complements. Thus the tendency is fairly clear for alternative world predicates and factive predicates to take that-complements while those that denote potential events or temporal coincidence between higher predicate and complement take infinitive complements of some sort.

Commentative predicates vary in whether their infinitive complements denote potential events or events which coincide with the event denoted by the CTP. Desiderative predicates can take complements referring to Alternate Worlds or potential events. Wish is the clearest case of this:
I wish for you to apologize. (POT)

I wish that you would apologize. (AW)

(429) illustrates that, since that does not indicate potentiality, a modal (would)
would be inserted into the that-clause to indicate the futurity of the complement

Predicates of fearing are not included in table 42. As in Modern Greek, the
functions of their complements vary in line with that of other complements. Thus
fear that... denotes AW or fact, while fear to denotes immediacy (see discussion
below).

Bare infinitives are only used with modal verbs and after verbs of Immediate
Perception. The former also commonly take -ing participles as complements. The
ing-participle has not been included in the analysis in table 42 because the
meaning difference between it and other complements is aspectual. It is not
restricted to either plus or minus SUBJECTive meaning. It has the functions of the
IPFV aspect and can contrast with either an infinitive or with a that-clause. The
IPFV was said, in 2.4 and 5.8, to denote central coincidence, unbounded
extension and prospective directionality, to be used for events AT or POST R and
often in a backgrounding function. These are also the meanings and functions of
the -ing participle as complement.

English infinitives are similar to Modern Greek na–complements in that they
both denote immediacy. The use of the infinitive following the predicate fear, for
example, implies that the subject has some control over the event in the
complement clause (cf. Zec, 1987):
Context: She had agoraphobia. She sometimes had fits of panic.
NB: in the examples below subject 1 = subject 2

(430) She even feared to leave her room.
(431) She even feared leaving her room.
(432) She even feared that she would/might leave her room.
(433) She feared to have a fit in a public place.
(434) She feared having a fit in a public place.
(435) She feared that she would/might have a fit in a public place.

Presumably the person in the examples can control whether or not she leaves the room but she cannot control the panic attacks; leaving the room involves volition, panic attacks do not. The infinitive encoding in (430) is thus acceptable but, for many speakers, the that-clause in (432) is not, and the reverse holds for (433) and (435). This is consistent with claims made earlier that [+SUBJ] encodings (e.g. infinitives) denote greater dependency between higher predicate and complement.

The -ing participle can be used in either case, as shown by (431) and (434). It is neutral both as regards the control factor and the reality status of the complement proposition. I suggest that it performs one of the main discourse functions of the IPFV, namely backgrounding the complement event.

This may also explain the use of the -ing participle after KAK verbs like forget and remember but other explanations are possible. The meaning of remember is: ‘to have knowledge by projecting one’s thoughts into the past.’

(436) I remembered to lock the door.
(437) I remembered locking the door.

In (436) what is remembered is in fact a previously existing decision, obligation, undertaking or the like.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KNOWLEDGE [K]:</td>
<td>E1:</td>
</tr>
<tr>
<td></td>
<td>'I remembered to lock the door.'</td>
<td>'It is best to I remember [K] lock the door.'</td>
</tr>
<tr>
<td></td>
<td>E2:</td>
<td>I lock the door</td>
</tr>
</tbody>
</table>

Fig. 69.a ‘Remember to do’.
The interpretation is that this activated memory leads to the realization of the complement event. In (437) the subject remembers the actual carrying out of the event:

\[
(437) \quad \text{"I remembered locking the door."} \quad T1 \quad T2
\]
\[
E1 \quad E2
\]
\[
\text{I lock the door} \quad \text{I remember E1}
\]

Fig. 69.b ‘Remember doing’.

The contrast between the infinitive and the participle is thus one of coincidence. In (436) the act of remembering coincides in time with the complement event. (437), in contrast, denotes two events (‘locking’ and ‘remembering’) which do not coincide at all. The \(-ing\) participle in this context may have the function of backgrounding the complement proposition or to denote the coincidence of the complement event \textit{lock} with its reference point (T1). Both are aspectual IPFV functions. The infinitive differs in that it refers to the coincidence of the CTP event and the complement event. (The only difference between \textit{forget} and \textit{remember} is that the former denotes knowledge lost.)

Although the \(-ing\) participle is often felt to be factive, e.g. in the context of \textit{remember}, it contrasts with both factive and non-factive complements:

\[
(438) \quad \text{I regret that I must leave you like this.} \quad \text{\textit{Fact}}
\]
\[
(439) \quad \text{I regret to have to leave you like this.} \quad \text{\textit{POT}}
\]
\[
(440) \quad \text{I regret having to leave you like this.} \quad \text{\textit{Fact or POT}}
\]

The above discussion shows that what distinguishes \(-ing\) participle from other complements is its IPFV aspectual meaning (cf. Kirsner & Thompson, 1976). It is this meaning which gives it a factive sense with some CTPs. The CTP itself may contribute to the factive reading; as a complement of \textit{remember} it denotes a past event and therefore an event that did occur.
In general, the \textit{ing}-participle is perceived as factive because of its AT R meaning. It may then contrast with the infinitive so that the former denotes a coincident event, the latter a potential event:

\begin{align*}
(441) & \quad \text{I tried to start the car but I couldn't.} \quad (\text{POT}) \\
(442) & \quad \text{I tried starting the car.} \quad (\text{CO}) \\
(443) & \quad ?\text{I tried starting the car but I couldn't.}
\end{align*}

The infinitive in (441) refers to a potential event (\textit{start}) and the fact that it never occurred, as indicated by the last clause, is therefore acceptable. The participle in (442) denotes that the complement event (\textit{start}) occurred at the reference point set by the CTP. Consequently the car did start and (443) is, to many speakers, not felicitous.

In conclusion, it can be said that English that-complements denote facts or Alternate World propositions, i.e. propositions which are presented as real and therefore [−SUBJ]. Infinitive complements denote immediacy; they present propositions as either potential or coincidental with the CTP event. In either case they denote a strong dependency between the higher and the complement clause. The dependency can relate to temporal coincidence, as is the case with \textit{phasal} predicates, or the speaker’s assessment (modal CTPs, coincidence between Ego’s knowledge/beliefs and propositions; see 3.8), but may also have to do with the subject's control over the complement event as is the case with \textit{fear}. Such dependency is expressed by [+SUBJ] encodings of the complement, e.g. na-clauses in Modern Greek and infinitives in English.

\textit{6.9.4 Subjunctivity in English.}

Modal verbs and infinitives have been shown to encode [+SUBJ] meanings. Another way of encoding \textit{SUBJ}ectivity is by a subjunctive. In English, the subjunctive has all but disappeared. There are, however, three structures in contemporary usage which encode [+SUBJ] meanings similar to those denoted by subjunctives elsewhere: the 'putative \textit{should}' construction, the use of \textit{were} for first
person singular present and the bare infinitive (infinitive without the complementizer) following verbs such as demand. The latter two have been called ‘were-subjunctive’ and ‘mandative subjunctive’ (Quirk et al, 1985:16.30).

(444)  I am sorry (that) they should feel left out.
(445)  I demand that he leave immediately.
(446)  I wish (that) I were someone else.

Usage differs between American and British English especially as regards (445) which is more common in the former variety. The meanings of the constructions in (444–6) can be shown, by notions already introduced, to be largely explicable as a sum of their component parts.

The ‘putative should’ in (444) is related to the epistemic use of this verb but denotes that the assumption is merely ‘alleged’. This interpretation arises because the predicate be sorry takes factive that-complements; should in such clauses does two things, it emphasises the subjective nature of the utterance and also makes it more tentative. The subjective reading arises because modals are expressions of SUBJectivity and the tentativeness is a function of the DISTance marking on the modal.

In (445), the complement contains an embedded infinitive form leave, without the complementizer to. The (‘bare’) infinitive is unmarked for aspect or event time. Its function is to denote that the propositional content asserted by that is potential rather than factive. It can fulfill this function because infinitives realize [+SUBJ] meanings, e.g. potentiality.

I see no reason to consider forms such as leave (in (445)) in themselves ‘subjunctive’. They coincide in form and meaning with the PFV infinitive. Consequently, the fact that they are not marked for any of the TMA categories does not justify making them a separate category. However, ‘mandative subjunctive’ is perhaps a good descriptive label for the structure as a whole. It would then have to be seen as containing an embedded infinitive. As shown above,
this view makes it possible to explicate the complete structure in (445) in terms of
the meanings of its component parts, and the same holds for (444).

The only feature of the three complement types illustrated above which is
not readily explicable by notions already introduced and justified in this thesis is
the use of the plural form were with a singular subject (446). This would seem to
require a separate category and is the best candidate for a subjunctive in English.
Its distribution is, however, very limited.

This complement verb form occurs with the predicates are wish, suppose,
the modal expression would rather (ibid:16.33) and in a few other hypothetical
environments. The complement clauses of these predicates as well as those that
take ‘mandative subjunctives’, (445), present Alternate Worlds. Alternate World
complements in English are realized by that-clauses (see previous section). The
[+DIST] form inside the that-clause in (446) receives a non-temporal reading due
to the hypothetical meaning of the CTP (wish). Since it is a desiderative predicate,
the tense marking is read as distancing the propositional contents from reality.
Past time reference would consequently have to be marked ‘on top of’ the non-
temporal DISTance marking by a PRE R form, e.g:

(447)  I wish I had been someone else.

This is a phenomenon familiar also from conditionals. The ‘past’ form of the ‘were’
subjunctive in (447) is thus explicable in the same terms as that of other
hypothetical environments. Only the third person plural marking for first and third
person singular remains in a category by itself, making the structure a candidate
for the class ‘subjunctive’ in English.

6.13.5 Summary of modality and complementation in English and Modern
Greek.

The brief discussion of English in 6.9.5 has shown that uses of modals and
complement types can be related to and explicated by the SUBJECTivity distinction
in the TMA system in much the same way as in Modern Greek. The two languages
differ in that English has a greater number of modal verbs but virtually no subjunctive. The semantic coverage of the English modals as a class is, however, the same as that of Modern Greek modals, if the particle than is taken into account. Whereas Modern Greek has a finite subjunctive plus a widely distributed infinitive, English encodes [+SUBJ] complements almost exclusively, it seems, by infinitives. Two differences have thus emerged: English has a rich modal system but virtually no subjunctive, Modern Greek has a well developed subjunctive but a very small set of modals.

Speakers of English sometimes have the option of realizing [+SUBJ] meaning by an infinitive or by a modal inside a that-clause, as with the ‘putative should’ mentioned above and further exemplified in (449).

(448) It is odd for him to come alone.

(449) It is odd that he should come alone.

English modals are also used in many cases where Modern Greek might usesubjunctives:

(450) Ti na hani o hainemos? [rhetorical] what SBVN do-np3s DEF wretched-person What (else) should the poor man do?

(451) Na mas w/othisete iligaki? SBVN us helpPFVnp3p little Could you help us for a bit?

Other alternative translations are possible, depending on the context (further examples can be found in table 39). Not surprisingly, the resource which is most developed in the respective language, i.e. the subjunctive in Modern Greek and the modal verb system in English, is also a frequently occurring encoding of [+SUBJ] meaning in that language. That is to say, when there is a choice between using or not using modals or subjunctives Modern Greek speakers make more frequent use of the subjunctive while English speakers prefer modals. It would be quite acceptable in Modern Greek to add a modal higher predicate to the expressions in (450) and (451) but extensive study of Modern Greek texts
suggests that just subjunctives on their own are often preferred. A quantitative study mapping the relative frequency of alternative structures would be needed to make more definite claims in this area, but this is outside the scope of the present discussion.


The findings concerning SUBJectivity can now be summarized. The discussion in the present chapter has shown that the whole semantic area of SUBJectivity can be covered by one and the same particle in Modern Greek. This supports the claim that SUBJectivity is one of the Organizing Principles of TMA systems. The frequent co-occurrence of a number of features on [+SUBJ] expressions, illustrated here and in chapter 4, is further evidence for this. Table 19 (from 3.12), which lists these features, is repeated below for convenience.

<table>
<thead>
<tr>
<th>concept. load</th>
<th>tense marking</th>
<th>dependency</th>
<th>rel. to S</th>
<th>reality status</th>
<th>functional level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+SUBJ]</td>
<td>non-finite</td>
<td>dep. clauses</td>
<td>anticip. contempl</td>
<td>non-fact unrealis</td>
<td>inter-personal</td>
</tr>
<tr>
<td>[-SUBJ]</td>
<td>finite</td>
<td>indep. clauses</td>
<td>exper. recall</td>
<td>factive realis</td>
<td>experiential</td>
</tr>
</tbody>
</table>

* Halliday's terms, e.g. Halliday, 1985.

Table 19 (From 3.12) Some features which typically co-occur on plus and minus [SUBJ] verb forms.

Each feature will be briefly discussed in the order it occurs in the table. The features have a tendency to co-occur, but none of the correlations in the table are absolute. The main clause subjunctive, discussed above, is an example of a finite, [+SUBJ] clause. The great majority of na- clauses are, however, non-finite.

**Tense marking:** The table claims that [+SUBJ] encodings tend to be non-finite. The English infinitive and the non-finite use of Modern Greek na-complements are examples of this.
Dependency: The tendency for [+SUBJ] clauses to be dependent on a higher clause (6.8.2) is exemplified by the temporal dependency of many na-complements and of infinitives. This was related to the more general notion ‘immediacy’ discussed above. It was shown there that other types of immediacy than spatio-temporal coincidence also received [+SUBJ] encoding. The immediacy meaning expressed by modal verbs and Modern Greek main-clause subjunctives consists of coincidence between the propositional content and Ego’s perception of reality. Such ‘egocentredness’ of complements is also realized by [+SUBJ] encoding.

Relationship to S & Reality status: In formal terms SUBJectivity means that the speaker has access to the Contemplate and Anticipate paradigms (which express events in the Imagined World, see chapter 1). Consequently one might expect that [+SUBJ] expressions would deal with all and only irrealis events. The correlation irrealis and [+SUBJ] encoding is indeed strong, but it was shown that the functional status of the proposition may override its reality status. Irrealis events can be presented as Alternate World events and encoded as factive. The speaker’s choice to ground the proposition either in the Material World ([−SUBJ] encoding) or in the Imagined World ([+SUBJ] encoding) is not absolutely restricted by logical notions of realsis and irrealis.

Functional level: By ‘functional level’ I am referring to Halliday’s division of the language system into functional components (see quote from Butler, 1985 in 6.12). The best illustration of the fact that [+SUBJ] encodings have an ‘interpersonal function’ is perhaps table 39 on main clause subjunctives. That these are strongly interpersonal follows from the definition of SUBJectivity; expressions which denote events in the Imagined World, which are highly egocentred and denote degrees of Uncertainty are clearly not suitable to relay objective information about the real world. Instead they are used interpersonally to convey the speaker’s attitude and so to ‘establish and maintain social relations’.
'Interpersonal function' is not a defining feature of SUBJectivity; one can, of course, express wishes, deliberative questions etc. to oneself. However, the frequent correlation between the function and the meaning again makes it apparent that SUBJectivity is a powerful Organizing Principle of TMA systems.
Conclusion:

This thesis has presented a model which, I claim, is representative of Indo-European (IE) TMA systems and has attempted to evaluate it by applying it to the description of two languages, Modern Greek and English.

Characteristic of this type of system is the fact that it encodes exactly four reference points, with realizations forming paradigms relative to one or other of these points. The reference points denote the intersecting oppositions ‘plus/minus DISTance’ and ‘plus/minus SUBJectivity’.

An advantage of this model is that it shows how ternary sequence and binary oppositions can co-exist and interact in a TMA system. Ternary sequence, we saw in 1.6, is basically aspeçtual and can form a mini-system in itself (see 2.9 on Hawaiian and 3.10 on the infinitive). This mini-system can also be extended along the parameters DISTance and SUBJectivity (see fig.30), as I have suggested for IE languages. We then end up with four mini-systems of ternary sequence inside a system of binary distinctions, which would traditionally have been called past – non-past and future – non-future (or realis – irrealis). Here they have been called DISTance and SUBJectivity. A possibility to explore in future research is that languages might extend the system along only one of these parameters. The result would be a two paradigm system, e.g. as hypothesized for Hawaii Creole (see fig.28). A non-extended system was suggested for Hawaiian.

Evidence has been presented to suggest that PFCTp (e.g. in backshifted discourse) and modalized PFCTp forms (e.g. would have done) are felt to be more ‘distant’ than other [+DIST] forms. The explanation is to be found, I believe, in the modularity just discussed. In terms of binary tense, all locations which are related to a point of reference distant from R are [+DIST]. In terms of ternary tense, any location PRE R is distant from R, whichever point of reference this happens to be. Although I have chosen to refer to only the former as DISTance I hope to have
made it clear that it (DISTance) is, in fact, an extension of the distance inherent in the PRE relationship (see fig.31).

The description has made constant reference to primitive notions and cognitive abilities. An example of the use of primitive notions (see 1.1) is the reference to the Organizing Principles as DISTance and SUBJectivity. Common terms such as ‘past’ and ‘irrealis’ could not have been used in their place since it is often discourse factors rather than real world temporal location or reality status which determine the encoding of an event. These common terms fail to capture the meaning that all uses of (so called) ‘past’ and ‘irrealis’ forms have and they would thus have been misleading. I would claim that, in contrast, DISTance and SUBJectivity have proven to have the desired explicative power. The DISTance parameter was used, for example, to explain the use of PFCT forms as unambiguous markers of time reference and in the formulation of rules for tense shifting. The SUBJectivity parameter elucidated the relationship between future, conditionality and various modalities and also played an important part in explicating the collocations of complementizers with complement taking predicates in both Modern Greek and English. It was also found that the Modern Greek modal particle, na, encodes all and only the meanings associated with SUBJectivity (in Part I).

Our cognitive ability to make comparisons goes a long way in explaining TMA meanings. This was demonstrated in relation to tense in 1.4.2 on event locations, in relation to aspect in 2.4 on central and non-central coincidence and in relation to modality in 3.8 on ‘necessity and possibility’. The definitions of tense, modality and aspect arrived at in these three chapters (Part I) were based on the outcomes of such acts of comparison. It was assumed that they necessarily underlie the language specific meanings and uses of TMA described in Part II.

Chapter 5, on aspect, makes it particularly clear that there are advantages to this approach. The universal definitions (see 2.6) constrain the meanings that
the aspects can have in ways that seem consistent with the data. At the same time, there is scope for meanings to vary within these constraints. For example, although the Modern Greek IPFV denotes unbounded events generally, thus making it a ‘continuous’ IPFV, while the English IPFV denotes events in progress (‘progressive’ IPFV), they can be compared using the terms of the universal definition. It becomes clear that the relationship of the event interval to R denoted by the IPFV is the same in the two languages. The PFCT, on the other hand, was shown to differ so that in Modern Greek the event interval it denotes is not normally seen to continue beyond R while in English it is likely to be seen as open ended (see 5.3.4). If aspect in more languages were analysed using this same approach, one might be able to improve on the universal definitions and gain a more precise understanding of what the meaning potential of aspect is.

The model which has been presented is an abstract representation of meanings encoded in IE TMA systems. It offers the possibility of a clear distinction being made between these meanings and the forms that realize them. This proved to be especially important in the description of PFCT and PFV aspect, since PFCT aspectral forms often ‘double’ as encoders of PFV (see for example 5.3.3–4); it seems to be a regular feature of IE-languages that the PFCT – PFV distinction is neutralized in relation to all points of reference except S. Nevertheless, it has been shown that the distinction PFCT/PFV aspectral meaning is still a relevant one to make in all paradigms of the TMA system since it may determine the encoding of shifted forms.

The organization of realizations into the four paradigms of the model have helped to explicate tense shifting operations in both languages and tense agreement in English. It also, in my view, allows a better description of finite and non-finite na-clauses than has hitherto been presented (see 6.1.1). Furthermore, it makes it possible to formulate, within one and the same frame of reference, the difference between a language such as Modern Greek, where the
access to tense/aspect forms is usually subject to discourse constraints and a language such as English, where constraints are more often grammaticized (see 4.2).

The suggestion has been made that all IE languages have the same type of TMA system. This would be an extremely reductionist proposal, were it not for the fact that languages can differ within the constraints imposed by the common system. Differences are evident in language specific meanings and in constraints on the use of categories in the two languages described. Furthermore, it is clear that the inventory of encodings available to the language user may vary from language to language; for example, Modern Greek was shown to have a smaller number of specifically modal verbs than English but a more developed subjunctive.

Further research on TMA, using the approach presented here, would be required in order to assess the extent of its validity and explicative power, above all in relation to IE languages. It would also be interesting to explore to what extent the suggested Organizing Principles also explain properties of TMA systems cross-linguistically. It seems, for example, that the use of tense forms to encode DISTance on other levels than time is common also in languages that have multiple remoteness distinctions. The use of future forms to encode SUBjectivity seems also to be the rule rather than the exception.

The interest in non-temporal uses of tense and in discourse driven TMA phenomena generally has increased in recent years and with it the volume of research in this area. A very interesting article by S. Fleischman (1989) came to my attention when I was in the finishing stages of this thesis. The article is entitled Temporal distance: a basic linguistic metaphor, and deals with non-temporal uses of tenses. It gives examples from a wide range of typologically distinct languages and discusses some intriguing topics, e.g. evidential uses of tense. The views expressed in the article coincide to a considerable extent with claims made in this thesis. It is implied that tense systems are organized around the notion of distance.
from the speaker’s here/now and from reality. There are, however, a few points on which this thesis differs and some points on which I would like to comment. Firstly, whereas Fleischman uses ‘distance’ as a term for extensions both into the past and into the future (used temporally and metaphorically), I have preferred to reserve DISTANCE for only the former notion. There is ample evidence in this thesis to show that ‘there’ in MW (i.e. [+DIST]) and ‘there’ in IW (i.e. [+SUBJ]) are two resources available to the speaker, and that it is therefore convenient to distinguish between them. Secondly, Fleischman refers to non-temporal uses of tenses as denoting ‘modal distance’; this is a case where the term ‘modal’ needs to be defined. I have preferred a fairly narrow definition of modality which would not include non-temporal uses of [+DIST] forms, at least not as prototypically modal.

Some of the phenomena discussed by Fleischman (ibid) find a more in depth explanation in this thesis. She reports a claim by Silva–Corvalan (1985) that more distant forms will be chosen last by speakers (if more than one form was available) and will also be lost from the language first. The section on event locations as outcomes of acts of comparison (1.4.2) provides an explanation for this; the notation clearly shows the higher complexity of the comparisons involved in referring to more distant forms, e.g. took E˘S in contrast to the more distant location of would have taken E˘((E˘S)˘E).

Some of the tense–aspect interaction evident in phenomena reported by Fleischman, but which are not referred to as such in the article, can be explained if, as is the practice in this thesis, tense meanings are separated from aspect meanings (as far as that is possible). Her report on the use of Passé Simple and Passé Composé in French narratives, for example, suggests to me that Passé Composé (Perfect) denotes events in extended intervals from the past to the speaker’s present (as does PFCT crosslinguistically) and that it should thus be analyzed as [−DIST], while Passé Simple has the usual PFV aspectual meanings
and is thus likely to have [+DIST] reference in a narrative. As Fleischman points out, events denoted by these two tense forms need not actually be located at different temporal distances from S. I would suggest that a description of PFCT aspectual meaning is needed to account for the fact that Passe Compose is used for events which are more directly connected to S. The ‘distance’ notion does not by itself provide an explanation.

In the universal definition of PFCT aspect, the possibility was left open that its event interval might extend beyond R, i.e. be open-ended. As was seen in 5.6.2, open-ended event intervals are compatible with unrealized or unreal events. This analysis finds support in Fleischman’s discussion of the quotative uses of PFCT aspect in certain languages (past and non-past) and the use of the Bulgarian Indefinite Past (PFCTnp) (ibid:34). The PFCT in these cases seems to mark that the speaker cannot vouch for the truth value of the proposition. I would suggest that, yet again, degree of distance does not suffice as an explanation for this use; it is definitions of the aspectual meanings, such as the ones provided in chapters two and five, which show why PFCT aspect would be compatible with uses which include the meaning plus/minus [vouched for] (Fleischman’s term, ibid:34); the PFCT event interval is potentially open-ended and can consequently contain an event whose realization is only potentially a fact.

The main contribution of this piece of research is, in my view, that it provides a holistic framework for the analysis of TMA. It has been made clear that questions concerning the status of TMA categories can best be answered with reference to the system as a whole; the so called ‘future’ is both tense and modality, aspect contains within it an element of tense, and tense (reference time) can be used to express notions which are semantically very close to those expressed by modal realizations. Yet we have been able to define tense, aspect and modality as separate categories. To my knowledge, this is the first framework of this holistic kind to be presented.
Having completed the analysis presented here, I am very aware of the wealth of relevant literature which I have not been able to access. Inevitably there are constraints on one's time, but there are also other important reasons. Some (perhaps a great deal) of the research being done has been published in languages of which I do not have a reading knowledge. I have been told that, for example, research on tense which in important respects parallels my own has been done, in recent years, by M.J. Gloninska j a and by E.V. Padučeva in the Soviet Union (Ju. Apresjan, personal communication), but reports on this research exist only in the Russian original. Fortunately, I have been able to read many interesting and relevant articles on TMA in Modern Greek. A very worthwhile undertaking would be the translation of linguistic research from languages with few speakers, for example Modern Greek, into languages which are more widely read by the world community of linguists.

In this thesis I have attempted to describe two Indo-European languages with as little European bias as possible. More specifically, I have tried to show the interplay of universal notions and language specific meanings and uses. There is, however, always a danger that one's own ways seem more 'natural' and 'universal' than those of others. Added to this is the fact that most in depth studies seem to deal with IE languages. TMA in languages of the world is discussed in, for example Comrie 1976 and 1985, Dahl 1985, Fleischman, 1989 and Givon 1984 but they do not provide in depth analyses of any particular language. There is, in other words, a great wealth of non-IE languages on which little work has been done to describe the expression of modal notions and non-temporal uses of tense forms. Could the reason be that there are more linguists who are speakers of IE languages than of any other group? It is my own experience that the expression of highly abstract concepts like SUBJ ectivity and DISTance are more difficult for a non-native speaker to grasp and describe than are, for example, aspect and temporal uses of tense. It is possible that the difficulty might increase with the
typological distance between the language described and the native language of the linguist. In my view, future in depth studies of TMA would benefit if their authors were native speaker linguists of the languages under study or, at least, of typologically similar languages. When this is not possible, intensive collaboration with native speaker consultants would be paramount, especially because of the highly context dependent meanings often expressed by TMA categories, and the fact that restrictions are likely to be discourse driven rather than grammaticized. It is my hope that this thesis might stimulate interest in this very exciting area of research also on languages which are typologically dissimilar from Modern Greek and English.
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Text Sources with Text code:

A  I Apojevmatini (*newspaper*)
J  Jineka (*weekly magazine*)
P  I Proti (*newspaper*)
T  Tahidromos (*weekly magazine*)
TZ Tzartzanos A. 1953 *Neo Elliniki Sintaksis*. Athens. (*syntax*)