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MORPHOSYNTACTIC DEPENDENCIES AND VERB MOVEMENT IN CYPRIOT
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ABSTRACT

This dissertation adopts a unified approach to morphology and syntax and explores the conditions that trigger or allow variation in morphology and syntax to appear. Based on data from Cypriot Greek, an understudied variety of Standard Modern Greek, I provide an analysis of the verbal morphology and the syntax of the verb to show that variation in grammar is subject to particular morphological and syntactic conditioning.

The current work is divided in two main parts that serve both empirical and theoretical goals: the first part provides the description and analysis of the verbal morphology in Cypriot Greek and compares this with existing analyses from its closest relative, Standard Modern Greek. With a focus on conditions that trigger allomorphy, I discuss their appearance for the case of Cypriot Greek allomorphy in the verb.

The second part escapes the word-internal discussion to explore the relevance of the syntactic environment in the conditioning of allomorphy. With relevance to Germanic varieties, I propose that the verb moves to C and that Cypriot Greek employs a CP-recursion structure in embedded environments (Vikner 1994). Head movement of the verb is conditioned by a strong feature on C, which is found only in some environments. I argue that the position of the verb plays a role in the appearance of special morphology confirming the hypothesis that certain syntactic configurations allow particular morphology to be realized and indicating the interaction of the syntax-morphology interface.

This work provides a novel empirical contribution by documenting phenomena previously unexplored in the grammar of the understudied variety of Cypriot Greek and by using theoretical tools in the framework of Distributed Morphology that allow us to capture morphosyntactic variation.

CHAPTER 1

INTRODUCTION

1.1 Theoretical Goals

This study attempts to understand the complexity of variation in form by providing a detailed analysis of the morphosyntax of one language, Cypriot Greek. It focuses on the morphology and syntax of the verb, one of the most interesting aspects of this language's grammar with respect to variation since it shows allomorphy in the verb stems and suffixes and allows different surface positions of the verb depending on other elements in the clause. These two empirical observations are studied in detail to provide a theoretical discussion on ways to think about variation in form using theoretical tools and to understand the morphological and syntactic conditions on allomorphy. The study shows that conditions previously identified in the literature, such as locality and directionality, play a role in the appearance of allomorphs in the Cypriot Greek verbal morphology which possibly demands a more relaxed version of the latter and that the syntactic configuration that the verb appears in affects the morphology realized.

1.1.1   Morphological Conditioning of Allomorphy

There are a number of factors that can define the appearance of allomorphy. One factor that has been a central component concerns elements of morphology and the different forms observed in the realization of morphemes. Allomorphy in morphology is often discussed with respect to conditions that trigger its existence, with some of the most well-known conditions being *locality* (or *closeness* (Carstairs-McCarthy 2001)) and *directionality*. The relation between syntactic structure and phonological form is defined as phonological adjacency by concatenation of morphemes. Locality then is a condition that is often understood to allow allomorphic interactions across a cyclic domain boundary

as long as the interacting elements are concatenated (Embick 2010). Directionality is defined in terms of outward and inward conditioning with the first predicting that an affix such as B can be sensitive to material that has already been added to the root, such as A, but not C. Inward conditioning is when an affix like B can be sensitive to a morphosyntactic feature whose exponence has not yet been inserted and can still influence the affix choice, as opposed to the exponent A which has already occurred and is no longer usable (also known as *The Ancestry Constraint on inflectional sensitivity* (Carstairs-McCarthy 2001)). The extent to which these conditions, as well as more specific ones, apply is not the same across different languages and studies suggest modified versions of these to account for the facts (see Deal and Wolf 2013 for example). Suppletive verb stems and the conditioning environment for Vocabulary Insertion in allomorphy contexts is discussed in Merchant (2015) for Standard Modern Greek but there is no work investigating the existence of these conditions more generally in suffixes and particularly in the morphology of Cypriot Greek.

The consequences of our understanding of conditions on allomorphy in morphology influences our theories in spell-out and the realization of the actual morphemes. If morphology, for example, is cyclic-based following a theory of phases, then locality of allomorphy can provide evidence to support this claim. As is well known, insertion proceeds inwards to outwards (Bobaljik 2000a), which is a theoretical generalization based on data on allomorphy. In this way, even if allomorphy is so abundant a process, it is a somewhat exceptional in that it contributes to theories that relate to the architecture of grammar and the interface between its different components.

In the current work, I explore the need for the existing conditions by examining data from Cypriot Greek and I discuss modifications based on these facts.

1.1.2   Syntactic Conditioning of Allomorphy

In the best of all morphosyntactically possible worlds, one might hope that the pieces of syntax and the pieces of morphology would appear to work together. An old observation is that morphology on the verb depends on its surrounding elements (Zwart 1993a; 1997; 1993b; Bogomolets et al. 2018; Adger 2006; Ostrove 2015). This observation is one of the most convincing pieces of evidence for the interaction of morphology and syntax and the need for theoretical tools that allow the two to communicate in an orderly manner. Given that the exponence is the heart of the mapping from syntax to phonology, it is useful to ask whether and how syntactic notions (for example, structural or linear adjacency (Embick 2010)) are relevant to allomorphic contexts.

In this work, I seek to clarify the empirical grounds on which variation in form in verbal morphology specifically can be attributed to allomorphy, that is, to the existence of a choice of exponents for a given syntactic structure. If that is the case, then syntax feeds morphology, and not the other way around, as could be otherwise suggested in lexicalist views to morphology, where words enter syntax fully inflected.

With this attempt, I seek to identify at least one environment where this conditioning takes place with respect to the position of the verb: T or C. This type of environment should not only be the possible syntactic environment, as the conditioning should not be limited to the empirical observations but to the actual morphosyntactic conditions that need to exist for allomorphy to happen (for example, a conditioning context defined in a maximal projection).

Last, work that shows the interaction of syntax and morphology in an orderly manner also rules out theories of syntax driven by morphology. Verb movement, in this case, is an accident when it comes to the input to morphology that meets the conditions required for allomorphy. However, syntax does not operate for morphological reasons, a claim that is fundamental to how we perceive the architecture of grammar.

1.2 Empirical Goals

Being an understudied variety, Cypriot Greek lacks a detailed and thorough examination of linguistic phenomena in all different components of grammar. While most work on this language focuses on the complexity of the diglossic or bidialectal issues that arise from the co-existence and use of both the low and the high variety by the native speakers (Rowe and Grohmann 2013), there is very little if any existent work that examines in detail the different components of its grammar and their relevance to a theory of grammar.

This work focuses particularly on the study of verbal morphosyntax, which is the heart of the understanding of the grammar of a particular language and a starting point for investigations of any kind. Its complexity in this case is not only limited to its rich morphology known for Greek, but also its flexible placement when interacting with other elements in the clause.

The empirical goals of this investigation is a thorough documentation of Cypriot Greek morphology and syntax of the verb as well as the position of the verb with respect to object clitics in a wide variety of previously unstudied syntactic environments. While previous work (Newton 1972) has listed some verb forms, and other work (Grohmann 2011; Agouraki 2001; Terzi 1999) has discussed the clitic-verb orderings in Cypriot Greek, no previous work has aimed for a complete and comprehensive documentation of these two areas. The data in this dissertation are not intended only for present analytical purposes: they will serve, it is hoped, as a rich empirical basis for future researchers interested in areas of the morphology and syntax of Cypriot Greek and its relation to other varieties of Greek, in areas that are left uninvestigated here.

1.2.1   Morphology of the Cypriot Greek verb

The study provides a novel, detailed discussion and analysis of Cypriot Greek verbal morphology. The purpose in Chapter 2 is first a clear documentation of the empirical facts: what morphemes appear in the verb, what allomorphs they have, how many allomorphs they have and what drives the changes between these elements. Secondarily, this work reviews existing work in the morphology of the Standard Modern Greek verb to confirm its application to these data or enrich our knowledge of the different empirical possibilities in Greek morphology.

The goal of this overview is to provide a detailed description of the verb morphology, which has not been previously studied through the examination of the implementation of previous proposals on Cypriot Greek verbal morphosyntax. By doing so, I assume the existence of word-internal structure in a derivational model of morphology like Distributed Morphology where individual morphemes represent terminal nodes in a syntactic structure and additional post-syntactic operations take place to generate the surface order (Halle and Marantz 1993; Harley 2010; Arregi and Nevins 2012; Embick and Noyer 2007).

I provide an analysis of the Cypriot Greek verbal morphosyntax by presenting and analyzing the exponents that appear as morphemes in the verb's functional projections and their interaction with the verb root. The functional projections that represent the inflectional verb morphology show the type of morphosyntactic features present in the clause. More generally, Greek verbal morphology marks Voice, Aspect, Tense and subject agreement (Warburton 1973; Joseph and Smirniotopoulos 1993; Philippaki-Warburton 1994; Merchant 2015 among others).

Verbalizers, or theme vowels, exist in the morphology of the verb, ranging from loan words to Greek verbs. By reviewing the analysis provided in Spyropoulos et al. (2015), I also discuss the possibility of them as theme vowels (Massuet 1999). Aspectual morphemes have always been a matter of debate among Greek scholars that disagree as to whether

certain morphemes definitely perform an aspectual role. Cypriot Greek allows at least two additional options compared to Standard Modern Greek, that makes the possible aspectual morphemes interesting for further discussion. Tense is expressed as a suffix and a prefix, known as the augment, and Cypriot Greek uses the augment productively, allowing it sometimes to appear in multiple positions. This observation is discussed in detail and an analysis is provided that supports post-syntactic repair mechanisms. An additional contribution is the separation of agreement and tense suffixes usually treated as portmanteaux suffixes despite their systematicity for a one-to-one correspondence of the exponents with the corresponding morphemes.

1.2.2 Syntax of the Cypriot Greek clause

While most work on the syntax of Cypriot Greek focuses on the placement of object clitics, little focus is given to the verb itself as the trigger of the result seen in the phenomenon. The goal of Chapter 3 is primarily to have an understanding of verb movement and the different surface positions that the verb typically occupies and secondarily to explore properties of clausal syntax, such as the left periphery of the clause.

Verb movement happens in some environments, but not in others, and the variation can be best explained with the assumption of features that drive head movement and different flavors of C where these features appear. The C in Cypriot Greek can remain empty even if nothing in the syntax can stop the verb from moving, supporting the analysis that C can attract heads or phrases or nothing at all.

The left periphery of Cypriot Greek is extremely rich and can host not only the verb, but also the subject whenever it surfaces preverbally. With different positions hosting DPs as topics, the remaining elements occupying the C heads are complementizers of different kinds. With a selection of different complementizers subject to the matrix predicate (Giannakidou 1998), it is possible to examine their restrictions and understand their

syntactic properties with respect to the verb position. The distribution of the verb with embedded complementizers shows that Cypriot Greek has CP-recursions in that it allows a low C and a high C position. Depending on where the complementizers surface, the verb is forced to stay low or can move higher up. This type of forced position of the verb creates a number of interesting questions with respect to its properties and the requirements of C. The last part of the chapter returns to morphology, and particularly special morphology which is realized only when the verb is in T. Within this context, imperative morphology is also approached as allomorphy from verb movement to C rather than a fully inflected imperative form of the verb. The empirical goals are satisfied with facts combining verb position, clausal projections and properties and their contribution in morphological realization.

CHAPTER 2

MORPHOSYNTACTIC DEPENDENCIES IN VERBAL MORPHOLOGY

2.1 Allomorphy

Variation in morphological form, also known as *allomorphy*, is found in cases of the existence of more than one morph for a single morpheme. More specifically, *grammatically conditioned allomorphy* is subject to specific constraints and these constraints are often discussed in work seeking cross-linguistic evidence that shows systematicity of the conditions where allomorphy is found in the different components of grammatical analysis and the reasons to explain why and how languages allow this type of variation to appear in the predictions of different grammar models. The answer to those questions provides an insight into the function of the different grammar components and informs our understanding of their interaction.

In morphological and syntactic theorizing, some of the most influential work on this topic (Carstairs 1984; Carstairs-McCarthy 2001; 2013; Bobaljik 2000a; Merchant 2015; Embick 2010 among others) has focused on the restrictions of allomorphy in the morphosyntactic environment, such as *locality* conditions and related to that, the direction in which allomorphy is triggered and the *sensitivity* to the conditioning environment. Discussion of these factors led to research in different languages, offering evidence in support and against some of these claims. In explaining the empirical facts of *grammatically conditioned* allomorphy, theories of morphology make different sets of assumptions, which yield correspondingly divergent predictions about the kind of variation in allomorphic patterns we expect to find in the world's languages. This work questions strict versions of conditions on allomorphy by exploring the Cypriot Greek verb morphology.

This chapter provides the background on previous work on allomorphy and presents a detailed examination of Cypriot Greek verb morphology. Alongside the description of the facts, I provide an analysis of the verbal morphosyntax of Cypriot Greek in Distributed Morphology (Halle and Marantz 1993; Harley and Noyer 1999; Embick and Noyer 2007; Arregi and Nevins 2012) and also discuss extant proposals about its closest relative, Standard Modern Greek, and the application of them to Cypriot Greek. With Cypriot Greek being an understudied variety of Greek, this work is a first attempt to my knowledge that gives a detailed analysis of its verbal morphosyntax providing access to a more accurate documentation of this Greek variety's morphology.

The first part gives a brief overview of the main conditions of allomorphy and summarizes previous work on verb morphology in Standard Modern Greek. The second part presents the decomposition of the verb in Cypriot Greek and gives an analysis of the verbal morphosyntax. Following the discussion of the facts, I discuss the problematic cases for strict versions of the conditions on allomorphy.

2.1.1 Allomorphy and Locality

The Distributed Morphology framework (Halle and Marantz 1993) is based on the Y-model of grammar, which assumes hierarchical relations in the syntactic component resulting in a structure that is interpreted by the modules of Logical Form (LF) and Phonetic Form (PF). The syntactic component consists of a set of rules that generate syntactic trees, and in this way, words are formed by syntactic operations and principles of morphology are principles of syntax (Embick and Noyer 2007). Features are distributed over nodes and are subject to Vocabulary Insertion (VI), which proceeds cyclically from the lowest element in the structure and moves outwards (Bobaljik 2000a). The *Spellout* process involves the modules from the conclusion of syntax through the post-syntactic component (Arregi and Nevins 2012).

In such a derivational view of grammar, the syntactic structure and relations present in the verbal domain define the morphological possibilities- for example, those responsible for allomorphy, in which the phonological forms of morphemes are constrained by grammatical organization. Embick (2010) develops the $\mathbb{C}_1$-LIN theory of allomorphy for allomorphic interactions that employs both linear and cyclic notions of locality. The theory is based on two hypotheses in (1).

(1) a. Contextual allomorphy is possible only with elements that are concatenated by ⌢

     b. Cyclic spell out domains define which nodes are present in a given cycle of PF computation, and thus potentially active (capable of being referred to) for the purposes of contextual allomorphy. Some outer nodes are not present when inner nodes are sent to PF. In addition, superficially adjacent nodes sometimes cannot influence each other allomorphically because in terms of cyclic spell out, they are not active in the same PF cycle.

<div align="right">(Embick 2010:35-36)</div>

On the basis of these two independent hypotheses, Embick predicts allomorphic interactions across a cyclic domain boundary only as long as the interacting elements are concatenated. Distinguishing between cyclic (category-defining) and non-cyclic heads, the first form phase heads and the latter "interphasal elements" (Embick 2010:37). When a category-defining head merges to a structure, it triggers spell-out. Category defining heads may be merged to structures that are already categorized. A verb like *break* which is a Root combined with v may be combined with an adjective head a to yield an adjective derived from a verb:

(2) [[BREAK v]a] (Embick 2010:9)

Interphasal elements, which are merged higher than x, are treated phonologically in the same cycle as the x head. In the tree below, x is a cyclic head triggering Spell-out of the root.

(3)

```
            W
          /   \
         Z     W
        / \
       x   X
      / \
  √root-  x
```
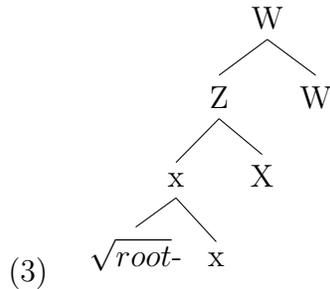
This system is based on the following assumptions:

(4) a. When cyclic head x is merged, cyclic domains in the complement of x are spelled out, i.e Chomsky's "weak" Phase Impenetrability Condition.

b. Merge of cyclic y triggers spell out of cyclic domains in the complement of y, by (3a) (4a here). For a cyclic domain headed by cyclic x in the complement of y, this means that the complement of x, the head x itself, and any edge+ material attached to x's domain undergoes VI.

c. Material in the complement of a phase head that has been spelled out is not active in subsequent PF cycles. That is, the complement of a cyclic head x is not present in the PF cycle in which the next higher cyclic head y is spelled out.

(Embick 2010:37-38)

These assumptions create a system which specifies the nodes for VI at the time of spell-out and the structural relation in which this takes place. With x being a phase head, the complement of the phase head is subject to VI (4a) and this spell-out system applies to the complements of any cyclic head in the structure (4b).

summary of these is given in what Embick calls the *Domain Corollary*, which posits that a cyclic head is not present in the cyclic domain of spell out that it induces, and the *Activity Corollary*, which states that in a structure with more than one head, nodes of a given cycle that are interphasal heads are potentially active with respect to one another.

(5)   a. DOMAIN COROLLARY: Cyclic head x is not present in the PF cycle of computation that is triggered by merge of x. Thus x is not subjected to Vocabulary Insertion (and thus cannot undergo any phonological processing) until the next cycle of spell out, when it is in the domain of another cyclic head.

       b. ACTIVITY COROLLARY: In [[.... x] y], x, y both cyclic, material in the complement of x is not active in the PF cycle in which y is spelled out.

<div align="right">(Embick 2010: 67)</div>

Earlier considerations of locality in allomorphy were provided in Siegel (1978) and Allen (1979) (cited in Carstairs 1984) and known as the *Adjacency Condition*:

(6) ADJACENCY CONDITION: No WFR [Word Formation Rule] can involve X and Y unless Y is uniquely contained in the cycle adjacent to X. (Carstairs 1984:196)

This means that for Y and X to be adjacent in the same cycle, Y must be separated by only one layer of embedding from X. For example, in the word 'undistinguished' [un[[distinguish]$_V$ed]$_A$]$_A$, *un-* is a cycle adjacent to *-ed*, but not to *distinguish*. Locality is involved when it comes to questions of allomorphy in other work as well; Bobaljik (2012) notes that a head or feature that conditions root allomorphy must be in the same morphological word (complex X^0) as the root, or in other words without a maximal projection intervening. Locality prevents a node β from serving as the context for allomorphy of a node α if a maximal projection intervenes between them.

(7)   a. $\alpha \ldots]_{X^0} \ldots \beta$

       b. $^*\alpha \ldots]_{XP} \ldots \beta$

This restriction ensures that allomorphs in comparatives, for examples, are not combined freely. Modern Greek has periphrastic and synthetic comparatives. For the suppletive adjective *kakos* 'bad' with a comparative root *chiro*, Bobaljik (2012) posits the following rules:

(8)   a. BAD → chiro/___] CMPR]

      b. BAD → kak-

      c. CMPR → -ter-/]ADJ ___]

      d. CMPR → pjo

When the comparative is realized as *pjo*, then head movement has not taken place and the comparative allomorphy of *bad* is not available since it is not within the same complex X^0 as the root.

(9)   kak-os   chiroter-os   o chiroter-os   'bad'

      kak-os   pjo kak-os   o pjo kak-os   'bad'

Insertion applies first at the most embedded node and the morphosyntactic identity of any peripheral nodes is known and may trigger allomorphy to the inner node. The notion of cyclicity in this respect is crucial in showing that morphological features are expressed by vocabulary items and those features are no longer part of the representation after certain points in the derivation. An *adjacency* component is also assumed here, as in the cases of portmanteau suppletion, where two sister nodes form a single node via Fusion.

2.1.2   Direction: Inwards and Outwards Sensitivity

Contextual allomorphy has not only been discussed in terms of locality, but also in terms of direction. Making explicit the fact that allomorphy is *sensitive* to directionality, Carstairs

(1984) proposed the *Peripherality Constraint* stated below:

(10)   Peripherality Constraint: The realization of a property P may be sensitive

         inwards, i.e. to a property realized more centrally in the word form

         (that is, closer in linear sequence to the root), but not outwards to an

         individual property realized more peripherally (further from the root).

         The realization of P may, however, be sensitive outwards consistently

         to *all the independently realized properties within a given category, that*

         is to all those properties within the category with which the realization

         of P is not entirely simultaneous. (Carstairs 1984: 193)

It follows then that any apparent instances of outward sensitivity will be inconsistent with this constraint. One possible solution discussed in Carstairs (1984) is that the exponence relationships will be reanalyzed in such a way that one or both of the alternants is no longer treated as separable from the more peripheral material to which it has apparently become sensitive.

Carstairs-McCarthy (2001) defined *closeness* and *direction* as conditions for the allomorphic dependencies that hold between a structure of 'Root+A+B+C'. Directionality is defined in terms of outward and inward conditioning [1] (also known as 'descendants' and 'ancestors'); the first predicts that an affix such as B can be sensitive to material that has already been added to the root, such as A, but not C. Inward conditioning is when an affix like B can be sensitive to a morphosyntactic feature whose exponence has not yet been inserted and can still influence the affix choice, as opposed to the exponent A which has already occurred and is no longer usable. Carstairs-McCarthy proposes that constraints on the direction of conditioning emerge as byproducts of constraints on 'ancestry':

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1. The term *grammatical conditioning* (Carstairs-McCarthy 2001) assumes that with respect to a morphosyntactic feature F, there is an affix A that realizes F and an affix B which realizes some property of F and is selected because of the affix A.

The Ancestry Constraint on inflectional sensitivity

The inflectional realization associated with a given word-structure node can be sensitive to inflectional characteristics associated with 'ancestors' and direct 'descendants' of that node, but not characteristics associated with collateral nodes ('sisters','aunts','nieces').   (Carstairs-McCarthy 2001:26)

This allows a single morphosyntactic property or combination of properties to be linked at a terminal node with a single affix, and of a less familiar kind, a nonterminal node is linked to a set of affixes. Grammatical conditioning of allomorphy under this constraint operates only in terms of direct ancestry ((grand)mother-(grand-)daughter relationships), not in terms of other relationships (between (great-)aunts and (great-)nieces).

The definition above expands to also include sensitivity to the location of morphosyntactic features in a given derivation. Bobaljik (2000a) distinguishes between outwards and inwards sensitivity in contextual allomorphy, by showing that outwards sensitivity is conditioned by peripheral morphemes and it is only sensitive to morpho-syntactic features, whereas inwards allomorphy is conditioned by morpho-phonological features that are not syntactically relevant. In this sense, inflection shows an asymmetry provided the systematic behavior of contextual allomorphy. Based on conditions beyond inflectional morphology, such as separation, cyclicity and rewriting, these generalizations are presented in a DM framework and on the basis of empirical evidence from Chukotko-Kamchatkan languages.

In the Chukotko-Kamchatkan verb, the agreement suffixes agree with the object of transitive verbs but are sensitive to features of the subject of an intransitive verb, i.e. showing ergativity. The prefix shows subject agreement ([A] in the diagram below), but its form is not sensitive to properties of the suffix. In addition, Itelmen verbs show that the choice of the class suffix depends on features expressed by the agreement suffix and prefix, but the choice of prefix and object agreement suffix never depends on the

feature expressed by the Class suffix. In other words, allomorphy of the Class marker is conditioned by features of the peripheral object agreement suffix. Both of them are then conditioned by agreement features of the prefix, which Bobaljik establishes as the most peripheral morpheme in the structure. In the tree diagram provided, the choice of the exponent in [B] depends on [A] and the choice of the Class II (C) exponent depends on both [A] and [B].

(11)

[A]

[B]

Verb [C]
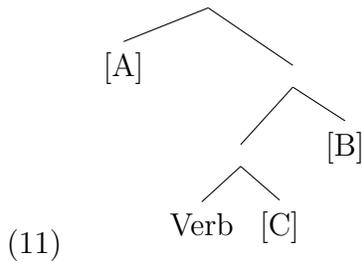
(Bobaljik 2000a:10)

The presentation of these facts leads to the generalization that in establishing the right dependencies, allomorphy for agreement features is outwards-sensitive. Bobaljik states the generalization: "First, allomorphy for agreement features is outwards-sensitive; second, such allomorphy is only outwards-sensitive; and third, inwards-sensitivity is restricted to morphophonological diacritic features." (Bobaljik 2000a:12)

This generalization is based on the assumption that allomorphic sensitivities are restricted to information that already exists in the structure with abstract morphosyntactic features accessible before Vocabulary Insertion. The concatenation of features is distinct from the realization of them in a way that abstract bundles of features are put together and the phonological content of the structures involved is given at a later component of the grammar. Assuming that insertion proceeds from the root outwards (Bobaljik 2000a), a verb stem can access morphosyntactic information and show allomorphy based on those.

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2.1.3 Allomorphy and Vocabulary Insertion

Exceptions that show outwards sensitive phonologically- conditioned allomorphy are found in Nez Perce (Deal and Wolf 2013), where it is argued that within a cyclic domain, if the domain contains multiple morphemes, these may be realized in a non-inside- out fashion; that is, either in parallel or outside-in. The *order* of insertion seems to be another condition that matters to allomorphy. The order of insertion may be constrained only by phonological conditioning requirements of particular Vocabulary Itemss: if Vocabulary Itemss competing for insertion at α reference the phonology of cycle-mate β, β will need to be inserted before α.

The process of mapping morphemes to phonological strings in DM (Vocabulary Insertion, VI) is also involved in the appearance of allomorphy. Deal and Wolf (2013) keep locality as a condition to allomorphy, but allow for a relaxed version of Vocabulary Insertion within each cycle. In their theory, cyclic domains are spelled out one at a time, proceeding from inner domains to outer ones. Within a cyclic domain, if the domain contains multiple morphemes, these may be realized in a non-inside-out fashion: either in parallel, or outside-in.

(12) a. ’e-ep-e’ni’-tx   siis!
        3OBJ-eat-μ-IMPER.PL soup
        ‘Eat her soup!’

    b. ’e-ep’-ey’-se-0   siis.
        3OBJ-eat-μ-IMPERF-PRES soup
        ‘I am eating her soup.’

The choice between *e’ni* and *ey’* represents outward-looking phonologically conditioned allomorphy. A second case shows allomorphy of the verb root meaning ‘go’, where phonological material within a local domain conditions the allomorphy observed. Deal and Wolf (2013) conclude on the basis of these cases that there is outwards- sensitivity within a cyclic domain, but not across domains.

(13)   a. kuu -se   -0
       go   IMPERF PRES
       'I am going.'

       b. ki -yu'
       go PROSP
       'I will go.'   (Deal and Wolf 2013:2)

Choice between *kuu* and *ki* is a case of outward-sensitive phonologically-conditioned allomorphy, which is otherwise unattested. They argue that there is outward sensitivity within a cyclic domain, but not across domains. These data shed light on a different dimension of allomorphy conditioning, that appears to be language-specific and challenge the notion that morphology operates only on an inside-out fashion. For any morphemes A and B, it is always the case that A is inserted before B or that B is inserted before A. The morpheme that is inserted second may depend phonologically on the morpheme that is inserted first.

2.1.4   Approaches to Allomorphy in Greek

In the study of Greek morphology, other work has approached the question of allomorphy and its importance with regard to understanding the interface of morphology and syntax. Joseph and Smirniotopoulos (1993) propose an approach to Greek verb morphosyntax as part of a morphological component that does not interact with syntax. In this approach, there is no one-to-one mapping of morphemes and categories and no inflectional category can be matched with a single morpheme [2]. This is supported by the claim that the inflectional markers that follow the root in Greek "are the exponents of a complex of the features for voice, aspect, tense, person and number. Clearly, then, no single element in this complex can be isolated as the exclusive marker for a given morphosyntactic category" (Joseph and Smirniotopoulos 1993:392). The arguments they provide are based

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2. Rivero (1990), for example, argues that Voice in Greek and Albanian heads its own maximal projection immediately above the VP.

on examples with a suppletive root depending on perfective/imperfective aspect and the treatment of inflectional markers as portmanteau morphemes. In the following example, Joseph and Smirniotopoulos (1993) explain that the suppletive root depends on aspect alternation as expressed in the inflectional marker.

(14) a. plen -onde
         wash NONACT.IMPER.NONPAST.3PL
         'They are washing themselves'

      b. pli -θ   -un
         wash NONACT NONACT.PER.NONPAST.3PL
         'They will be washed'

With regard to inflectional markers, the exponent *-ik* in the verb form *pliθikan* 'they were washed', according to them, is not a marker of aspect alone, but an exponent of past Tense and Voice. While *-ik* can be associated with both aspect and tense, it appears to be optional in Cypriot Greek, exactly suggesting that it only marks aspect.

(15) a. e-   pli -θ   -ik   -e   -s
         PAST wash NONACT PERF PAST 2SG
         'You were washed'

      b. e-   pli -θ   -i   -s
         PAST wash NONACT PAST 2SG

The context of this allomorphy will be further discussed in the morphological decomposition of the verb in the sections to follow. Similarly, the exponent *-θ* is analyzed as marking nonactive Voice and perfective Aspect and contrasts with other elements like *-s*.

(16) a. li   -θ   -ik   -a
         loose NONACT.PERF PERF.PAST 1SG
         'I was let loose'

      b. li   -s   -o
         loose PERF 1SG
         'That I let loosen'

With these examples, Joseph and Smirniotopoulos (1993) argue that the endings represent a portmanteau realization that cumulatively express voice, tense, aspect and

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person. In this proposal, the inflection of verbs in Greek is stem-based, where stem 1 "appears in the imperfective form of verbs, followed by members of one of four sets of person/number/tense endings", stem 2 appears "with active perfective verb forms, followed by members of one of two sets of person/number/tense endings" and stem 3 appears with "nonactive perfective verb forms, generally followed by -θ as well as -*ik*, and one of two sets of person/number/tense endings" (Joseph and Smirniotopoulos 1993:395).

Galani (2005) argues that the morphological decomposition of verbs in Standard Modern Greek is as in (17) root - aspect (theme vowel) - Voice (aspect, tense) and agreement/tense (voice). In her analysis, each morphological unit in (17), other than the root, consists of two sets of features; the primary and the secondary ones. The secondary features of the voice morpheme are aspectual. Voice and Aspect are also the secondary features appearing in the specification of the agreement/tense morpheme. Unless the secondary features match the primary ones, the derivation crashes.

(17) a. egd -ar -e
      skin PER SG.PST.PERF.ACT.3sg
      'She skinned'

   b. gd   -ar -θik   -e
      skin PER NACT.PER.PAST 3SG.PST
      'She was skinned.'   (Galani 2005:103)

In the example above, aspect in the voice morpheme is a secondary feature, conditioning the featural matching of the aspect morpheme following the root and the non-active voice morpheme following it. The agreement morpheme has tense as a secondary feature to provide the matching requirement following the non-active morpheme.

This approach suggests that morphemes are always defined by the selectional properties of their preceding morphological unit. In other words, it adds a strict adjacency component to the realization of the morphosyntactic features involved. In such a system then, it could be the case that different sets of moprhosyntactic features realize morphemes with the same phonological form in syncretic cases. By assuming a different set of morphosyntactic

features, the system predicts various syncretic forms. Free variation is blocked in a system where the phonological form of the aspectual morphemes defines the agreement allomorph in each case.

(18)   a. Pli   -n -isk   -ete.
               wash v IMPERF.PAST 2SG.PAST
               'You are washing.'

        b. * E-   pli   -n -isk   -ete.
               AUG wash v IMPERF.PAST 2SG.PAST
               'You were washing.'

Decomposing the verb in the example above as suggested in Galani (2005) would result in the realization of *-isk* as a morpheme with either [-PERF,+PAST] or [-PERF,-PAST], leading to a theory that predicts an unnecessarily expanded lexicon.

This system cannot predict allomorphy in the case below, where the forms *-es* and *-is* are conditioned by the form of the aspectual morpheme.

(19)   a. e-   mb -ik   -es
               AUG enter PERF.PAST 2SG.PAST

        b. e-   mb -∅   -is
               AUG enter PERF.PAST 2SG.PAST
               'You entered'

The two allomorphs representing the same morphosyntactic features in Galani's system cannot be predicted, but instead only a system that shows this allomorphy as the result of a morpheme in the conditioning environment can actually show the distribution of the two.

In a different approach to morphology, Ralli (2006) takes allomorphy to pattern like a schema, determining a paradigmatic behavior of a class of verbs. French adverbs in *-ment* are formed by referring to the stem of a paradigmatically related form, in this case the feminine one:

Adjective.MASCULINE	Adjective.FEMININE	Adverb
beau	belle	belle-mente
fou	folle	folle-mente
long	longue	longue-ment
bref	brève	brève-ment

Table 2.2: Schematic morphology: French adverbs

Allomorphy constrains paradigms, paradigm organization, and paradigm restructuring and certain regularities in the choice of particular allomorphs cannot be predicted by phonological rules, and cannot be explained in terms of syntactic constructions. Ralli (2006) assumes that the presence of systematic allomorphy signifies the way in which verbs are classified into inflection classes. Allomorphy patterns exist in paradigms and function like a schema for a class of verbs, the members of which share similar inflectional representations. In the example below, Ralli takes stem allomorphy to be the result of the verb 'love' belonging in this inflection class, while verbs in other inflection classes would have a different pattern.

	Present	Imperfect	Aorist
1SG	aɣapá-o	aɣápa-ɣ-a	aɣápi-s-a
2SG	aɣapá-s	aɣápa-j-e-s	aɣápi-s-es
3SG	aɣapá-i	aɣápa-j-e	aɣápi-s-e
1PL	aɣapá-me	aɣapí-ɣ-ame	aɣapí-s-ame
2PL	aɣapá-te	aɣapá-ɣ-ate	aɣapí-s-ate
3SG	aɣapá-ne	aɣápa-ɣ-an	aɣápi-s-an

Table 2.4: Stem allomorphy: An example

Allomorphy is therefore an inflection-class demarcator. In a DM approach, the allomorphy observed here can be analyzed even further into morphemes that indeed mark inflectional class, but are not necessarily part of the stem.

2.1.5 Further Questions

The conditions on allomorphy that have been identified in the relevant literature can be summarized as the following:

(a) *Cyclicity/Locality*: Insertion proceeds inside-out, cycle by cycle (Embick 2010; Bobaljik 2000a; Deal and Wolf 2013; Carstairs-McCarthy 2001)

(b) *Directionality*: A morpheme can show inwards sensitivity to form, and outwards sensitivity to morphosyntactic features (Bobaljik 2000a; Carstairs-McCarthy 2001)

(c) *Linearity*: The conditioning environment for allomorphy of a morpheme must be linearly adjacent to the morpheme (Embick 2010; Deal and Wolf 2013; Merchant 2015)

(d) *Order of Vocabulary Insertion*: In most cases, insertion is inside-out, but some analyses argue that within a cycle, VI does not have to be inside-out (Deal and Wolf 2013).

(e) *Feature type*: Realization of an allomorph can be based on categorial features (e.g. number) or features specifying the values of categories (e.g. singular) (Bonet and Harbour 2012; Adger 2010)

(f) *Rewriting*: As morphosyntactic features are expressed by vocabulary items, these features are used up and no longer are a part of the representation (Bobaljik 2000a).

A number of questions are addressed following previous work, such as how close or far the stem can appear to show allomorphy if conditioned by an inflectional marker, the directionality and the extent to which other morphemes can intervene or not. This chapter raises the following questions:

(a) What are the particular morphemes that act as allomorphy triggers in Cypriot Greek verbal morphology?

(b) Do the above conditions on allomorphy optionally hold, depending on the language? Can they all be true?

(c) Does the study of allomorphy give insight in theories of Vocabulary Insertion, i.e. the treatment of Greek inflectional morphology as portmanteau morphemes that cumulatively express all the different features (Joseph and Smirniotopoulos 1993)?

The following section provides a detailed decomposition of the verb morphemes in Cypriot Greek that will provide the empirical basis of the chapter to answer these questions. As will be seen the complexity of the (Cypriot) Greek verb shows that all different functional heads that appear as suffixes on the verbal stem can trigger inflectional allomorphy. That is, Cypriot Greek shows aspect-conditioned, voice-conditioned, tense-conditioned and agreement-conditioned inflectional allomorphy.

With respect to locality and directionality specifically, I will argue that restricting allomorphy to outwards morphosyntactic sensitivity (Bobaljik 2000a) is unnecessary in the local domain that can also show inwards morphosyntactic sensitivity. Instead, inflectional allomorphy can be either inward- or outward-sensitive with respect to morphosyntactic features provided that the morphemes are within the same cycle.

2.2 The morphosyntactic decomposition of the Cypriot Greek verb

In this section I provide an overview of Cypriot Greek verbal morphosyntax by presenting and analyzing the exponents that appear as morphemes in the verb's functional projections and their interaction with the verb root. The functional projections that represent the inflectional verb morphology show the type of morphosyntactic features present in the clause. More generally, Greek verbal morphology marks Voice, Aspect, Tense and subject agreement, as in (20) (Warburton 1973; Joseph and Smirniotopoulos 1993; Merchant 2015;

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Philippaki-Warburton 1994 among others).

(20) e-   sandano -θ   -ik   -e -s
      PAST confuse NONACTIVE PERF T 2SG
      'You are confused.'

The aspectual morpheme marks grammatical aspect (perfective or imperfective) and tense is past or non-past. Active Voice does not have any exponents, but nonactive Voice is expressed with an exponent representing the absence of an internal argument (with the exception of deponent verbs). The verb morphology shows subject-verb agreement, which depends both on person, number and tense.

The exponents are morphemes in terminal nodes of the syntactic structure of the verb, where bundles of features are realized with Vocabulary Insertion. Inflectional suffixes are exponents of functional projections, as those shown in the tree below. I assume for now that the combination of the root with inflectional suffixes is the result of head movement (see Embick and Noyer 2007).

(21)

```
                    Agr
                   /    \
                  T      -s
                 /  \
               Asp    -e
              /   \
          Voice    -ik
          /   \
         v    -θ
        /  \
   sandano-
```
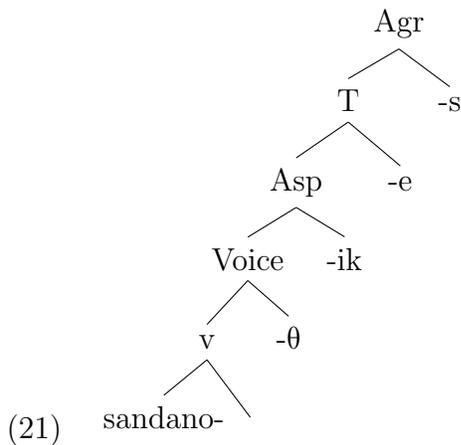
The following tables show the forms of the verbs in the two conjugation classes in Cypriot Greek. Even though different approaches to the decomposition of the verb from work on Standard Modern Greek will be explored, the morpheme decomposition as one-to-one mapping to a functional projection is what will be assumed here. A more detailed discussion of the distribution of each morpheme will be given later on.

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	xá-n-o	fakk-ó	pon-ó
2SG	xá-n-i -s	fakk-á-s	pon-í-s
3SG	xá-n-i -∅	fakk-á -∅	pon-í -∅
1PL	xá-n-u-men	fakk-ú-men	pon-ú-men
2PL	xá-n-e-te	fakk-á-te	pon-í-te
3PL	xá-n-u-sin	fakk-ú-sin	pon-ú-sin
3PL	xá-n-u-n	fakk-ú-n	pon-ú-n

Table 2.6: Non-Past Imperfective Active

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	xá-s-o	fatʃ-í-s-o	pon-í-s-o
2SG	xá-s-i-s	fatʃ-í-s-i-s	pon-í-s-i-s
3SG	xá-s-i-∅	fatʃ-í-s-i -∅	pon-í -s-i-∅
1PL	xá-s-u-men	fatʃ-í-s-u-men	pon-í-s-u-men
2PL	xá-s-e-te	fatʃ-í-s-e-te	pon-í-s-e-te
3PL	xá-s-u-sin	fatʃ-í-s-u-sin	pon-í-s-u-sin
3PL	xá-s-u-n	fatʃ-í-s-u-n	pon-í-s-u-n

Table 2.8: Non-Past Perfective Active

	1st	2nd-Class A	2nd-Class B
	VERB CONJUGATIONS		
	'to lose'	'to hit'	'to hurt'
1SG	é-xa-n-a	e-fakk-ú-s-a	e-pon-ú-s-a
2SG	é-xa-n-e-s	e-fakk-ú-s-e-s	e-pon-ú-s-e-s
3SG	é-xa-n-e-∅	e-fakk-ú-s-e-∅	e-pon-ú -s-e-∅
1PL	e-xá-n-a-men	e-fakk-ú-s-a-men	e-pon-ú-s-a-men
2PL	e-xá-n-e-te	e-fakk-ú-s-e-te	e-pon-ú-s-e-te
3PL	e-xá-n-a-sin	e-fakk-ú-s-a-sin	e-pon-ú-s-a-sin
3PL	e-xá-n-a-n	e-fakk-ú-s-a-n	e-pon-ú-s-a-n
	é-xa-n-a-n		

Table 2.10: Past Imperfective Active

	1st	2nd-Class A	2nd-Class B
	'to lose'	'to hit'	'to hurt'
1SG	é-xa-s-a	e-fátʃ-i-s-a	e-pón-i-s-a
2SG	é-xa-s-e-s	e-fátʃ-i-s-e-s	e-pón-i-s-e-s
3SG	é-xa-s-e-∅	e-fátʃ-i-s-e-∅	e-pón-i-s-e-∅
1PL	e-xá-s-a-men	e-fatʃ-í-s-a-men	e-pon-í-s-a-men
2PL	e-xá-s-e-te	e-fatʃ-í-s-e-te	e-pon-í-s-e-te
3PL	e-xá-s-a-sin	e-fatʃ-í-s-a-sin	e-pon-í-s-a-sin
3PL	e-xá-s-a-n	e-fatʃ-í-s-a-n	e-pon-í-s-a-n

Table 2.12: Past Perfective Active

Cypriot Greek has suppletive verbs and verbs that show irregularities (cf. Merchant 2015 for Standard Modern Greek).

Verb Conjugations			
Imperf stem	Active Perfective stem	Nonactive perfective stem	Meaning
tro-	fa-	fai-	'eat'
θor-	ð-	-	'see'
le-	p-	lex-/ipoθ-	'say'
ðern-	ðir-	ðert-	'beat'
fefk-	fi-	-	'leave'

Table 2.14: Suppletive stems in Cypriot Greek

Last, *exo* 'have' and *ime* 'be' also show phonologically conditioned irregularities on their stems. For example, /x/ changes to the alveolar ʃ before a front vowel.

	NONPAST.IMPERF 'to have'	PAST.IMPERF 'to have'	NONPAST.IMPERF 'to be'	PAST.IMPERF 'to be'
1SG	éx-o	íx-a	íme	ímun
2SG	éʃ-is	íʃ-es	íse	ísun
3SG	éʃ-i	íʃ-en	én	ítan
1PL	éxum-en	íxa-men	ímasten	ímastun
2PL	éʃe-te	íʃ-e-te	ísasten	ísastun
3PL	éx-usin	íx-a-sin		
3PL	éx-un	íx-a-n	en	ítan

Table 2.16: Exo 'have' and ime 'be'

Have appears to be a conditioned allomorph of *be* depending on the syntactic context, as discussed extensively in the literature (see Myler to appear and references within). *Have* and *be*, for example, can both appear in existential structures suggesting a suppletive allomorphy of V_{be}.

(22) a. Eʃi   enan xartaeton sto   armari.
          have.3SG a   kite   at-the closet
          'There is a kite in the closet.'

      b. En   enas xartaetos sto   armari.
          be.3SG a   kite   at-the closet

      c. O   xartaetos en   sto   armari.
          the kite   be.3SG at-the closet
          'The kite is in the closet.'

      d. * O   xartaetos eʃi   sto   armari.
            the kite   have.3SG at-the closet
          'The kite is at the closet.'

With an allomorphy approach to *have* in existential structures, (22) shows that there needs to be a differentiation from the possessive *have* which is not found in the same environments as *be*.

The goal of this overview is to provide a detailed description of the verb morphology, which has not been previously studied through the examination of the implementation of previous proposals to the Cypriot Greek verbal morphosyntax. By doing so, I assume the existence of word-internal structure in a derivational model of morphology like DM where individual morphemes represent terminal nodes in a syntactic structure and additional post-syntactic operations take place to generate the surface order (Halle and Marantz 1993; Harley 2010; Arregi and Nevins 2012; Embick and Noyer 2007). Syntactic and morphological structure are interrelated with inflectional and derivational morphology assembled in the syntactic component. In the sections to follow, I discuss the distribution of inflectional suffixes in Cypriot Greek from inwards to outwards: Verbalizers and Theme vowels, Voice, Aspect, Tense and Agreement.

2.2.1 Verbalizers

Verbalizers are not commonly expressed in the morphology of a verb, but any evidence of these is crucial to understanding the notion of a v^o as a syntactic head. As Harley (2009) shows, English verbalizing affixes include *-ify,-en,-ize and -ate* that combine with roots or stems to form verbs, usually with a causative reading (e.g. *horrify, sadden etc.*)[3]. There are different flavours of v expressing different meanings related to the verb event.

A more common case where verbalizers show morphological exponence is with loan words. Ralli (2012) documents a list of verbalizer suffixes in the Aivaliot verb, which when combined with a Greek or Turkish root form a transitive or intransitive verb.

Aivaliot verb	Verbalizer	Meaning
psar-evɣ-u	-evɣ-	'to fish'
zuɣraf-iz-u	-iz-	'to paint'
xazir-evɣ-u	-evɣ-	'to make ready'
xabar-iz-u	-iz-	'to be aware'

Table 2.18: Verbalizers in Aivaliot

In Modern Greek, Spyropoulos et al. (2015) argue that there is morphological exponence of a verbalizing head v different from Voice and that the root in this class of verbs is categorized by a verbalizer. They claim that a vowel that appears between the root and the bare agreement suffixes occupies a position in the morphosyntactic structure identified as the verbalizer. The verbalizer has an exponent only in 2nd Conjugation verbs, which are characterized by (a) non-root stress (23a), and (b) selection for the bare non-past agreement suffixes in non-past imperfective forms (Spyropoulos et al. 2015). Identified as an empty vocalic slot, the verbalizer surfaces as different vowels or root-defined exponents and holds the stress, as in *-á* below.

(23) a. aɣap -á -o
         love v NONPAST.1SG
         'I love'

---

3. Giannakidou and Merchant (1999) identify a similar set of affixes for Greek, such as *-izo,-ono,-eno,-evo,-pio* that relate to resultative morphology.

b. aɣap -∅ -ó
   love v NONPAST.1SG
   'I love'   [Standard Modern Greek]

In the absence of the verbalizer -*a* the stress shifts to the final syllable. On the other hand, when the verbalizer surfaces as null, then the stress falls on the last syllable of the root, as in the following example.

(24) ðjavá -∅ -z   -o
      read   v IMPERF NONPAST.1SG
      'I study'   [Standard Modern Greek]

The empty vocalic slot -$\square_v$, which may materialize with various vowels is the exponent of the v head, when the construction involves a second conjugation verb. The default exponent of the empty vocalic slot is the vowel /i/, which has a wider distribution than /e/ or /a/. For all other allomorphs, a list of the more specific vocabulary insertion rules as proposed in Spyropoulos et al. (2015) is given below:

(25) a. -$\square_v \rightarrow$ /a/ /[Class A]__[-perfective,(-past)]

         -$\square_v \rightarrow$ /a/ /[$\sqrt{antanakl-}$,...]__[+perfective]

     b. -$\square_v \rightarrow$ /e/ /[$\sqrt{for-}$,$\sqrt{afer-}$,...]__[+perfective]

     c. -$\square_v \rightarrow$ /u/ /__{-me[-past,1PL],-ne[-past,3PL]}

     d. -$\square_v \rightarrow$ -$\square_v$ /__{-*o*[-past,1SG], -*us*[-perfective,-past]}

     e. -$\square_v \rightarrow$ /i/ /elsewhere   (Spyropoulos et al. 2015:321)

As Spyropoulos et al. (2015) point out, verbalizers are specific to 2nd Conjugation verbs (Class A) which appear with the bare non-past agreement suffixes, i.e. the suffixes without the tense sensitive theme vowel. An example is given below in (26b), where in their analysis, -*s* only appears with the verb roots of this conjugation class (2nd Conjugation, Class A). In other words, insertion of the agreement suffix in this way would be lexically conditioned by these roots specifically.

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(26) a. iðrí   -is
     establish 2SG.NONPAST
     'You establish'

   b. aɣap -á -s
     love TV 2SG.NONPAST
     'You love'

With this approach, (26) violates (27) since it suggests that these agreement suffixes are lexically defined by these roots; this would be problematic in a theory of allomorphic locality where the non-cyclic head, in this case the agreement suffixes, can see a Root only if intervening heads are non-overt.

(27)   " A non-cyclic (i.e. non-category-defining) head X can see a Root in
         spite of intervening cyclic x, but this seems to happen only when x
         is non-overt. This is the situation in the English past tense, where
         the phonologically null v head does not prevent the T[past] head from
         having its allomorphy conditioned by the Root."   (Embick 2010: 34)

Built on a cyclic derivational approach, category defining heads that define the phases for spell-out are *n*, *v* and *a*. The forms in the perfective non-past below show the overt verbalizer being an intervening head for second conjugation verb roots that "opt for the bare non-past agreement suffixes" (Spyropoulos et al. 2015: 304).

(28) a. aɣap -í -s   -o
     love v PERF NONPAST.1SG
     'that I love'

   b. pin   -á -s   -o
     get.hungry v PERF NONPAST.1SG
     'that I get hungry'

For a complex head, a category defining *v* would trigger spell-out and the root information would be inaccessible to outer domains.

(29)

a.
```
          W
         / \
        Z   W
       / \
      x   X
     / \
  √root  x
```

b.
```
          T
         / \
       Asp  -o
       / \
      v   -s
     / \
  agap-  -i
```

Embick's (2010) theory stumbles on these data. First of all, second conjugation verbs are defined in Spyropoulos et al. (2015) as selecting 'bare agreement suffixes'. These agreement suffixes are structurally higher than the verbalizer position, which can intervene when an exponent is inserted. This already creates a problem of an intervening cyclic overt x, if we think of the agreement suffixes as allomorphs defined in a conditioning environment of a root specified for second conjugation.

(30)   v ↔ -$\square_v$/[second conjugation] ___   (Spyropoulos et al. 2015: 314)

The exponence of the verbalizer is the problem here, and not the terminal node itself, given (27). A non-cyclic Y may have Root-determined allomorphy if it is concatenated when Vocabulary Insertion occurs (Embick 2010:34). With the application of Pruning, which results in deletion of null heads, the intermediate terminal node of v will be deleted and the cases where the verbalizer is not realized are not problematic.

One way to keep the locality constraints as defined in Embick (2010) is to posit that the appearance of this vowel does not mark the presence of a verbalizer, and thus a separate head, but that these verb roots are irregular in the perfective, nonpast.

(31)   *aɣapi* ↔ ___/[+PERF]

If the vowels seen in the verb morphology are truly verbalizers as argued in Spyropoulos et al. (2015), the locality restrictions in Embick (2010) should not allow any conditioning environments over an exponent. It would therefore be unnecessary to keep the notion of a particular set of suffixes conditioned by the second conjugation verb roots. Instead, there

is need to develop a different system of deriving the exponents that appear as suffixes on the verb.

The different vowels that realize the verbalizer position do not create a problem for a locality-based system like the one in Embick (2010). As he notes: "Root attached cyclic x can see the Root", establishing that at least some terminal in the outer domains of the root can access the information on it. This correctly predicts the difference between the vowels, as in the example below:

(32) a. aɣap -í -s   -ume
         love v PERF 1PL
         'that we will love'

      b. aɣap -á -me
         love v 1PL
         'We love'

However, the optionality noted in Spyropoulos et al. (2015) for the second conjugation (Class A) verb forms *aɣap-a-me* and *aɣap-u-me* 'we love' exactly suggests that the conjugation class on the root is not relevant to the allomorphy of the verbalizer. It is worth noting that the optionality of the two forms *aɣap -a -me* and *aɣap -u -me* 'we love' in Standard Modern Greek does not exist in Cypriot Greek. Instead, the inflectional morphology that follows a first conjugation verb like *iðri-* 'establish' and a second conjugation verb like *aɣap-* in 1st person plural is the same: *iðrí-u-me* 'we establish' and *aɣap-ú-me* 'we love' (compare to Standard Modern Greek *iðri-u-me* and *aɣap-á-me/ aɣap-ú-me*).

A first conjugation Cypriot Greek verb like *tró-o* 'eat', stressed on the root and a second conjugation verb with non-root stress like *aɣap-ó* 'love' show the same verbalizer, *-i* in the nonactive form of the verb.

(33) a. É-   fa -e(n)
         PAST eat 3SG.PAST
         'He ate.'

b. E-   fa -í -θ   -ik   -e(n)
   PAST eat v NONACT PERF PAST
   'It was eaten.'

c. Aɣáp -i -s   -e(n)
   love   v PERF PAST
   'He loved.'

d. Aɣap -í -θ   -ik   -e(n)
   love   v NONACT PERF PAST
   'He was loved.'

Given such examples *-i* appears sensitive to the nonactive *-θ*, rather than the root information.

Examples like *efaiθiken* are interesting if *-i* is truly a verbalizer because insertion of the suppletive root *fa-* is conditioned by the outer morphosyntactic features (Merchant 2015). It is then a locality violation following Embick (2010), for the root to be able to access the outer terminal nodes in the presence of an exponent, such as *-i*. This would suggest that insertion of suppletive roots such as *fa-* is conditioned by an environment that includes the verbalizer position as well.

The discussion here raises three questions: (a) are agreement suffixes really dependent on conjugation information of roots or is there an alternative analysis of their distribution related to the morphological decomposition of the verb? (b) if allomorphy of the verbalizers is not dependent on root information, how is it otherwise conditioned? and (c) does a strictly local theory of allomorphy, as in (1), make the right predictions?

In the following section, I explore a different approach to verbalizers as theme vowels.

2.2.2   Theme vowels

The idea that roots do not necessarily carry the information about the conjugation class they belong to is also proposed in Massuet (1999) for Catalan. First conjugation verbs, seen as the default class, differ from second and third conjugation verbs; the latter two

35

classes include the relevant information on their roots. When no information is specified on the root, a default *theme vowel* is inserted.

Theme vowels have the property of classifying the conjugation class a verb root belongs in. In Massuet (1999), they are seen as primitive binary features, as in any other morphosyntactic category. The choice of the theme vowels depends on the availability of contextual information and the information specified on the root. In the absence of any information, a default theme feature is inserted, but if a root provides the structure with such information, the morphological feature of the root is copied onto the theme position. In Catalan, this appears, with verbs of different conjugation classes, like *cantar*, *témer* and *unir*. Each of these verbs shows a different theme vowel, namely *-a*, *-e* and *-i*, depending on the root specification for the different conjugation classes in Catalan.

A similar observation can be made for the Greek 'verbalizers' (Spyropoulos et al. 2015), that is the vowels that appear adjacent to the root in the 2nd conjugation class.

2ND CONJUGATION VERBS

CLASS A	CLASS B
'to love'	'to hurt'
aɣap -í -s -o	pon -í -s -o
aɣap -í -s -i -s	pon -í -s -i -s
aɣap -í -s -i -∅	pon -í -s -i -∅
aɣap -í -s -u -men	pon -í -s -u -men
aɣap -í -s -e -te	pon -í -s -e -te
aɣap -í -s -u -sin	pon -í -s -u -sin

Table 2.19: Vowels in Perfective Nonpast

Spyropoulos et al. (2015), as discussed in the previous section, argued that these vowels are overt verbalizers specific to this conjugation. I will pursue here a different analysis, where these vowels are analyzed as theme vowels. I adopt the system proposed in Massuet (1999) for conjugation classes, which is presented modified for Cypriot Greek below. The distribution of the vowels, namely *-i, -e, -a* depends on the feature specification of the

root, as schematically shown below. Following the division to two verb conjugations according to stress placement, $-\alpha$ and $+\alpha$ represent:

theme-vowel

(34)

$-\alpha(\emptyset)$ $+\alpha(\text{-i})$

$-\beta(\text{-a})$ $+\beta(\text{-e})$
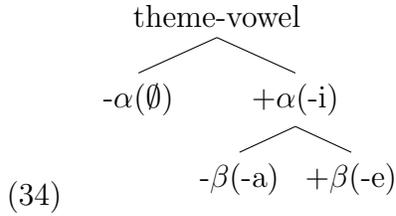
(35)   a.   TV $\rightarrow \emptyset/\sqrt{root}_{[-a]}$___

      b.   TV $\rightarrow$ -i$/\sqrt{root}_{[+a]}$___

      c.   TV $\rightarrow$-a$/\sqrt{root}_{[-\beta]}$___

      d.   TV $\rightarrow$ -e$/\sqrt{root}_{[+\beta]}$___

Verbs in the first conjugation are specified as $[-\alpha]$, while verbs in the second conjugation are specified as either $[+\alpha]$, $[+\alpha, -\beta]$ or $[+\alpha, +\beta]$.

(36)   a.   xa   {-∅/*e/*a} -s   -i   -s
          lose TV   PERF NONPAST 2SG
          'You will lose'

      b.   andanakl {-a/*e/*i} -s   -i   -s
          reflect   TV   -PERF NONPAST 2SG
          'You will reflect'

      c.   pon {-i/*e/*a} -s   -i   -s
          hurt TV   PERF NONPAST 2SG
          'You will hurt'

      d.   afer -e/*i/*a -s   -i   -s
          hurt TV   PERF NONPAST 2SG
          'You will subtract'

In the first conjugation, the exponent is $-\emptyset$. A mere stipulation at this point is that there is no realization after a root final vowel, as in *xa*- 'to lose'.

(37) $[TV] \rightarrow \emptyset/\text{V}$___

The basic reason for claiming that these vowels should be treated as theme vowels, and not actual verbalizers, is the different distribution between the two. Compare the difference between some possible verbalizers like *-ef* and *-n*; the latter can appear with deadjectival verbs, with the use of the theme vowels. For example, *past-i-n-isk-o* shows both exponents. True verbalizers are not subjects to tense and aspect combinations.

NONPAST.IMPERF.2SG	PAST.IMPERF.2SG	Translation
past-i-n-ísk-i-s	e-past-í-n-isk-e-s	'to become thinner'
ðiskol-éfk-i-s	e-ðiskól-efk-e-s	'to become harder'
aɣap-á-s	aɣap-ú-s-e-s	'to love'
afer-í-s	afer-ú-s-e-s	'to subtract'

Table 2.20: Verbalizers and Theme Vowels-Imperfective

(38)

NONPAST.PERF.2SG	PAST.PERF.2SSG	Translation
past-í-n-i-s	e-pást-i-n-e-s	'to become thinner'
ðiskol-ép-s-i-s	e-ðiskól-ep-s-e-s	'to become harder'
aɣap-í-s-i-s	aɣáp-i-s-e-s	'to love'
afer-é-s-i-s	afér-e-s-e-s	'to subtract'

Table 2.21: Verbalizers & Theme vowels- Perfective

Some examples with these verbalizers are given below:

-efk

(39)   a.   maz   -efk -o
           collect v   1SG
           'I collect.'

       b.   pal   -efk -o
           fight v   1SG
           'I fight'

(40) a. poyat -iz -o

　　　paint v 1SG

　　　'I paint.'

　　b. sar　　 -iz -o
　　　sweep v　1SG
　　　'I sweep.'

-on

(41) a. sulup　　　 -on -o
　　　put.together v　1SG
　　　'I put together.'

　　b. klið -on -o
　　　lock v　1SG
　　　'I lock.'

These pieces of verbal morphology, also known as verbal derivational suffixes, exist in addition to Voice, Aspect, Tense and Agreement. The fact that they cannot be ommitted shows their importance to the verbal derivation, and more specifically their combination with adjectival roots. A major difference between verbalizers and theme vowels is that the verbalizers appear in all tenses and aspect, while theme vowels only appear overtly with verbs of particular classes. So, while the suffix *-ef* and *-n* appear in both tables, the theme vowels do not.

The theme vowels show outward sensitivity to Aspect, something also noted for Serbian and Russian theme vowels (Svenonius 2005). Svenonius notes that the theme vowel in the perfective below is *-i* and in the imperfective *-a*.

(42) a. bacati

　　　throw.IMPERF

　　b. baciti

throw.PERF

'to throw' (Serbian, Svenonius 2005: 183)

(43) a. brosatj

throw.IMPERF

b. brositj

throw.PERF

'to throw' (Russian, Svenonius 2005: 183)

This observation requires a revision of the rules above to include Aspect in the conditioning environment (In (44), *-s* is syncretic between perfective and imperfective aspect. This is not the case with all verbs, as in *eksitíma-z-e-s* 'you were swearing' and *eksitíma-s-e-s* 'you swore').

(44) a. e-   pón **-i** -s   -e   -s
         PAST hurt th PERF PAST 2SG
         'You hurt'

b. e-   pon **-ú** -s   -e   -s
         PAST hurt th IMPERF PAST 2SG
         'You were hurting'

In (44b), *-us* cannot be a morpheme realizing aspect, since the *-s* appears in other verb forms and preceded by other vowels (e.g. *poniso* 'I will hurt', *eponise* 'it hurt').

(45) a. th → ∅/V___

b. th → -i/$\sqrt{root}_{[+a]}$___[+PERF]

c. th →-a/$\sqrt{root}_{[+a-\beta]}$___[+PERF]

d. th → -e/$\sqrt{root}_{[+a+\beta]}$___[+PERF]

e. th → -u/$\sqrt{root}_{[+a]}$___[-PERF]

The -PERF sensitivity triggers insertion of *-u* in both classes of the 2nd conjugation.

The importance of thinking these root-adjacent vowels as theme vowels, and not verbalizers, lies in similar claims about the nature of theme vowels and their interaction with root specification (Massuet 1999). We do not need to assume that the verbalizer position never surfaces with an exponent. In fact, we can draw a distinction between derivational suffixes as exponents of v discussed in Spyropoulos et al. (2015) and theme vowels that depend on root information.

The proposal discussed here for theme vowels in Cypriot Greek suggests that the grammar has the principles to insert these vowels based on contextual information. This contradicts the idea that these vowels are part of the verb stem and stored in the lexicon (see Bermúdez-Otero 2013 for a relevant discussion) as such providing 'lexically' the information on the division of verb conjugations. We can therefore avoid the assumptions that "the selection of allomorphic variants must be a matter of the lexicon or morphology" or "the stem variation can be handled at the level of the lexical entry, by a lexical redundancy rule" (Ralli 2006:5). Müller (2004) concludes that "inflection class features are of no use in syntax; they are not interpretable in this component" (p.218), which cannot be the case for verb class features as discussed here. The presence of features on roots is crucial to the insertion of a verbalizer or a theme vowel given the distinction suggested here. The context of the conditioning environment leads to the assumption that syntactic terminal nodes that follow the root should be able to access it. This kind of relation is syntactic in nature, as drawing contextual information to complete the derivation (for example, a Probe-Goal relation in agreement) involves the assumption of hierarchical structure.

2.2.3   Voice

Voice in Cypriot Greek is conditioned by perfective aspect, as in its relative Standard Modern Greek and has the exponents -θ, -t and ∅ (*i.e* ka -∅ -ik -a 'I was burned') that

mark nonactive Voice (Rivero 1990), as in the examples below (for a list of the same verbs in Standard Modern Greek, see Merchant 2015). Voice does not show exponence with imperfective aspect e.g. *e-vrisk-a* 'I was finding'.

Active Imperfective	Active Perfective	Nonactive perfective	Meaning
prosvall-	prosval-	prosvl-i -θ-	'to offend'
vrisk-	vr-	vre -θ-	'to find'
epenði-	epenði-	epenði -θ-	'to invest'
ðinn-	ði-	ði -θ-	'to tie'
krin-	krin-	kri -θ-	'to judge'
enθarin-	enθarin-	enθari -θ-	'to encourage'
apand-	apand-i	apandi -θ-	'to answer'

Table 2.22: Stem forms

Active Imperfective	Active Perfective	Nonactive perfective	Meaning
xtern-	xtar-	extar -t-	'to scratch'
anaptiss-	anaptiks-	anaptix -t-	'to develop'
eksetaz-	eksetas-	eksetas -t-	'to examine'
plaθ-	plaθ-	eplas -t-	'to knead'
kli-	klis-	eklis -t-	'to close'
embne-	embnefs-	embnefs -t-	'to inspire'
stell-	stil-	estal -t-	'to send'
vall-	val-	eval -t-	'to put'
vkall-	vkal-	efkal -t-	'to take out'

Table 2.23: The nonactive *-t*

The alternation between the different allomorphs is phonologically conditioned with insertion of *-θ* conditioned by a vowel, while insertion of *-t* is the elsewhere.

2.2.4   Aspect

Cypriot Greek grammatical aspect is marked on the verb with *-ik* that marks perfective aspect and *-isk* that marks imperfective aspect, but only in a particular set of verbs.

The perfective *-ik* appears to be 'optional'[4] in the non-active forms of 2nd & 3rd SING. This clearly shows that *θik-* is not a single morpheme in Cypriot Greek (see Joseph and Smirniotopoulos 1993; Roussou 2009; Warburton 1973; Ralli 2005 for Standard Modern Greek). The tables below show a few cases with the verb form optionally surfacing with *-ik* in 2nd and 3rd person singular.

Cypriot Greek perfective *-ik*, 2ND PERSON SINGULAR			
Root	PAST, NONACTIVE	PAST, NONACTIVE	Meaning
skoto-	e- skotó -θ **-ik** -e -s	e- skotó-θ **-∅** -i -s	'you were killed'
fakk-	e- fatʃí -θ **-ik** -e -s	e- fatʃí-θ **-∅** -i -s	'you were hit'
sandano-	e- sandanó -θ **-ik** -e -s	e- sandanó -θ **-∅** -i -s	'you were confused'
aɣap	aɣap -í -θ **-ik** -e -s	aɣapí -θ **-∅** -i -s	'you were loved'
psi-	e- psí -θ **-ik** -e -s	e- psí -θ **-∅** -i -s	'you were cooked'
vaf-	e- váf -t **-ik** -e -s	e- váf -t **-∅** -i -s	'you were painted'
pandrev-	e- pandréf-t **-ik** -e -s	e- pandréf-t **-∅** -i -s	'you were married'
pe-	e- péx-t **-ik** -e -s	e-péx-t **-∅** -i -s	'you shot yourself'
mbe-	é- mb **-ik** -e -s	é-mb **-∅** -i -s	'you entered'
su-	e- sús-t **-ik** -e -s	e- sús-t **-∅** -i -s	'you were shaken'
ksev-	e- ksév **-ik** -e -s[a]	e- ksév **-∅** -i -s	'you got up on something'

Table 2.24: The perfective *-ik* in 2nd Person Singular

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a. Following Merchant (2015) a null version of *θ-* with a diacritic on the stem can be assumed for *athetic* verbs.

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4. This is a marked option for Standard Modern Greek only for certain verbs that also show an unstressed past *e-* similar to Cypriot Greek, such as *e-θeáθ-i* 'was seen', *e-vréθ-i* 'was found', *e-ɣenníθ-i* 'was born', *e-kláp-i* 'was stolen', *i-kús-θ-i* 'was heard', *e-léx-θ-i* 'was said' etc. (Leivada, pc). All these belong to a very different register: consciously archaizing, katharevousa, modeled on Attic.

Cypriot Greek perfective nonactive **-ik**, 3RD PERSON SINGULAR *he/she/it*			
Root	PAST, NONACTIVE	PAST,NONACTIVE	Meaning
skoto-	e- skotó-θ **-ik** -e -(n)	e- skotó-θ **-∅** -i -(n)	'he was killed'
fakk-	e- fatʃí -θ **-ik** -e -(n)	e- fatʃí-θ **-∅** -i -(n)	'he was hit'
sandano-	e- sandanó -θ **-ik** -e -(n)	e- sandanó -θ **-∅** -i -(n)	'he was confused'
aɣap-	aɣapí -θ **-ik**-e -(n)	aɣapí -θ **-∅** -i -(n)	'he was loved'
psi-	e- psí-θ **-ik** -e -(n)	e- psí-θ **-∅** -i -(n)	'he was cooked'
vaf-	e- váf -t **-ik** -e -(n)	e- váf -t **-∅** -i -(n)	'he was painted'
pandrev-	e- pandré -ft **-ik** -e -(n)	e- pandré -ft **-∅** -i -(n)	'he was married'
pe-	e- péxt **-ik** -e -(n)	e- péxt **-∅** -i -(n)	'it was played'
mbe-	é- mb **-ik** -e -(n)	é- mb **-∅** -i -(n)	'he entered'
su-	e- súst **-ik** -e -(n)	e- súst **-∅** -i -(n)	'he was shaken'
ksev-	e- ksév **-ik** -e -(n)	e- ksév **-∅** -i -(n)	'he got up on something'

Table 2.25: The perfective *-ik* in 3rd Person Singular

This optionality seems to be the result of outward sensitivity conditioned by the 2SG/3SG agreement morpheme. In the cases where aspect surfaces as null, the tense morphemes appear as *-i*; when it surfaces as *-ik*, then it surfaces as *-e*. In this way, exponence of T depends on the aspectual exponent.

In addition to the perfective *-ik*, Cypriot Greek also has an imperfective morpheme, namely *-isk*. This morpheme only appears with change-of-state verbs, as in *mara-n-isk-* 'to wither' and it only appears in the imperfective form of the verb.

(46) a. Ta fcora   mara -n -isk -u   -sin/-n
         the flowers wither v IMPF NONPAST 3PL
         'Flowers wither'.

    b. Ta fcora   e-   mara -n -isk -a   -sin/-n
         the flowers PAST wither v IMPF PAST 3PL
         'The flowers were withering'.

When comparing (46) with the perfective form of the verb, it becomes clear that *-isk* realizes imperfective aspect.

(47) a. Ta fcora   en na mara   -n -u   -sin/-n
         the flowers be to wither v NONPAST 3PL
         'The flowers will wither.'

b. Ta fcora e-   mara -n -a   -sin/-n
the flowers PAST wither v PAST 3PL
'The flowers withered.'

In addition, *-isk*, which realizes imperfective aspect, can never appear with the nonactive

Voice morpheme -θ which is conditioned by perfective aspect.

(48)   a. To fcoro e   -mara -θ   -ik   -en
the flower PAST wither NONACT PERF 3SG
'The flower withered.'

b. * To fcoro e-   mara -n -θ   -isk   -en.
the flower PAST wither v NONACT IMPERF 3SG

c. * To fcoro e-   mara n -isk   -θ   -en.
the flower PAST wither v IMPERF NONACT 3SG

In (48) above, 'the flowers' is not the causer of the change-of-state (a.k.a. *move* and

change verbs (Jespersen 1927)) of the verb. This interpretation, however, is not only

related to *-isk*, but more generally to change-of-state verbs. A list of similar verbs is given

in the table below.

Cypriot Greeek change-of-state verbs with *-nisk*			
CG verb	Meaning	CG verb	Meaning
aðri-n-isk-	'to thicken'	paʃi-n-isk-	'to become fat'
alafri-n-isk-	'to become lighter'	pasti-n-isk-	'to become thinner'
ɣlika-n-isk-	'to become sweeter'	payi-n-isk-	'to become older'
efkoli-n-isk-	'to become easier'	peθa-n-isk-	'to die'
ftani-n-isk-	'to become thinner'	pella-n-isk-	'to become crazy'
kondi-n-isk-	'to become shorter'	pikra-n-isk-	'to become bitter'
kria-n-isk-	'to become colder'	plati-n-isk-	'to become wider'
ksi-θima-n-isk-	'to become less angry'	polli-n-isk-	'to increase'
ksira-n-isk-	'to become dry'	skleri-n-isk-	'to become harder'
kufa-n-isk-	'to become deaf'	steni-n-isk-	'to become narrower'
lepti-nisk-	'to become thinner'	vari-n-isk-	'to become heavier'
llia-n-isk-	'to become less'	xamni-n-isk-	'to become looser'
makri-n-isk-	'to become longer'	xlomja-n-isk-	'to become pale'
mara-n-isk-	'to wither'	xondri-n-isk-	'to become fatter'
mitʃa-n-isk-	'to become smaller'	ya-n-isk-	'to become healthier'
mnjali-n-isk-	'to grow older'	yi-n-isk-u-me	'to become'

Table 2.26: Change-of-state verbs

It is often the case that by assuming the presence of v in transitive and intransitive alternations, the difference between passives, transitives, reflexives and unaccusatives is analyzed in terms of the feature specification on v itself and the presence/absence of an external argument. According to Alexiadou and Anagnostopoulou (2004) , there are three configurations that are involved in the formation of unaccussatives with VoiceP being in only one of them.

(49) a.

vP
- v_{become}
- AP

b.

vP
- RESULT
- VoiceP
  - Voice'
  - VP

c.

vP
- BECOME
- XP
  - the shirt
  - HAVE a wrinkle
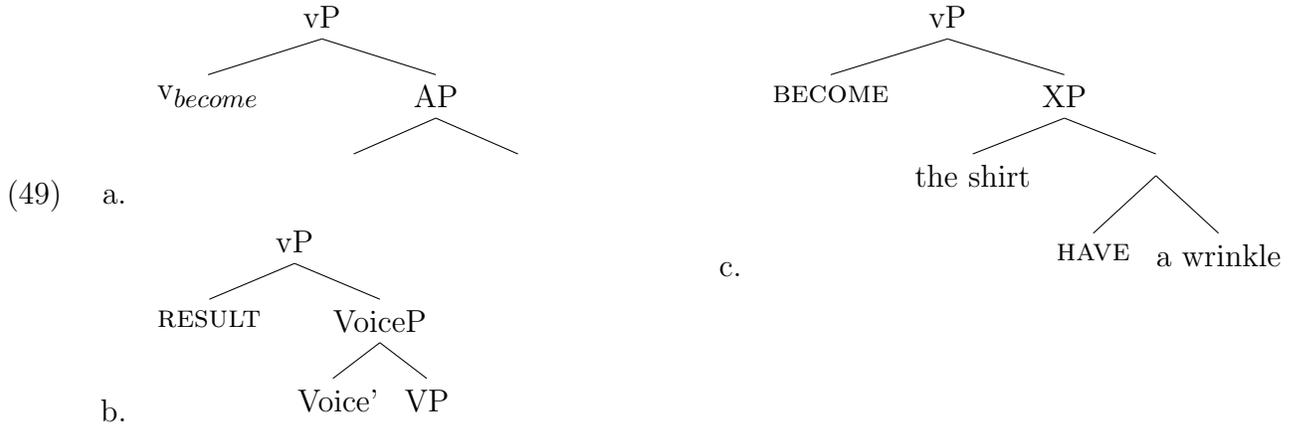
Anticausative verbs project a VoiceP and it can carry either agentivity or manner features. With anticausative morphology, an intransitive verb can show either active or non-active Voice morphology.

(50) a. I   kuverta eksimaristiken.
         the blanket get.dirty
         'The blanket got dirty.'

      b. I   kuverta eksimarisen.
         the blanket get.dirty

Given this, a possible question is whether *-nisk* is the actual exponent of an anticausative v head, that is, whether the analysis in (52) is correct.

(51) Ta fcora   mara -nisk -u   -sin/-n
      the flowers wither CAUS NONPAST 3PL
      'Flowers wither'.

(52) a.

- 3PL
  - -PAST
    - √WITHER vCAUS

b.

- -SIN
  - -U
    - mara -nisk
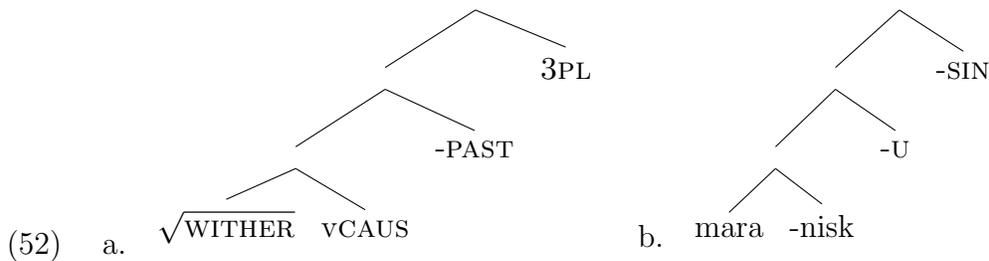
However, change-of state verbs have an anticausative reading which cannot be associated

only with the morpheme *-isk* and overt exponence of an anticausative head. In the absence of *-isk*, the anticausative reading is still present.

(53) a. Ta fcora   mara- n -isk- u   -sin
         the flowers wither v IMPF NONPAST 3PL
         'Flowers wither'.

      b. Ta fcora   e   -mara -n -a   -sin
         the flowers PAST wither v PAST 3PL
         'The flowers withered.'

      c. Ta filla   ksira -n -isk -u   -sin.
         the leaves dry   v IMPF NONPAST 3PL
         'Leaves dry.'

      d. Ta filla e   -ksira -n -a   -sin
         the leave PAST dry   v PAST 3PL
         'The leaves dried.'

These verbs, in their intransitive (a.k.a *anticausative*) version denote an event in which the theme undergoes a change-of-state (i.e. become dry), while the transitive variant (a.k.a as (lexical) *causative* verb) includes the causer of this event (Alexiadou et al. 2015).

(54) a. Ta filla   ksira -n -isk -u   -sin/-n.
         the leaves dry   v IMPF NONPAST 3PL
         'Leaves dry.'

      b. O   Kostis ksira -n -isk   -i   ta filla.
         the Kostis dry   v IMPF NONPAST the leaves
         'Kostis is drying the leaves'

A lexicalist account of these cases would need to assume that the two verbs form independent lexical entries and this led work on causative-anticausative alternations to argue for structural differences between the two. The distributional classes of anticausatives in Standard Modern Greek show that anticausatives can appear with both nonactive and active morphology (Alexiadou and Doron 2012; Alexiadou and Anagnostopoulou 2009; 2004).

(55)   Class A: Non-active morphology in unaccussative use (b)

    a. O   Yannis katestrepse to xiroɣrafo.
       the John   destroy.ACT the document
       'John destroyed the document.'

    b. To xiroɣrafo katastrafike   me ti ðinati fotja.
       the document destroy.NONACT with the strong fire
       'The document was destroyed by the strong fire.'

    c. To xiroɣrafo katastrafike   apo ton Yanni.
       the document destroy.NONACT by   the John
       'The document was destroyed by John.'

(56)   Class B: Active morphology in unaccussative use (b)

    a. O   Yannis aðjase   ti sakula.
       the John   empty.ACT the trash-bag
       'John emptied the trash bag.'

    b. I   sakula   aðjase.
       the transh-bag empty.ACT
       'The trash bag emptied.'

    c. I   sakula   aðjastike   apo to Yanni.
       The trash-bag clean.NONACT from the John
       'The trash bag was emptied by John.'

Some tests to identify an anticausative verb relate to the notion of the absence of any agentivity from that particular use. If a Voice head introduces an agent, then phrases that adjoin to a VoiceP will not be possible. For example, licensing of *by*-phrases that appear in passive structures are ungrammatical in anticausatives (e.g. *The window broke by John) but these are grammatical in passives. Other tests are the use of agentive adverbs (e.g. deliberately), which again are only possible with passives (e.g. #The boat sank deliberately) and licensing of *by itself* is only possible with anticausatives. Third, instrumental PPs appear to be disallowed in anticausatives (e.g. *The window broke with a hammer). Two of these tests can be also tested with the cases discussed here.

Use of an agentive adverb like *ksepitiðes* 'deliberately' should be ungrammatical with anticausative verbs which lack agent since it is possible with passives that have an agent; this prediction is indeed confirmed.

(57)   a.   # Ta fcora   maraniskusin ksepitides
            the flowers wither   deliberately
            'The flowers wither deliberately.'

       b.   # Ta filla   ksiraniskusin ksepitides
            the leaves dry   deliberately
            'The leaves were dried deliberately'

The use of *by itself* phrase is possible with anticausative verbs, but not with passive verbs where an agent is involved in the event. If an agent performs the event, the internal argument cannot be the actor binding the *itself* phrase, as in the case of anticausatives.

(58)   a.   Ta fcora   maranisku-sin/-n (pu) mona tus
            the flowers wither   by   alone them
            'Flowers wither by themselves'.

       b.   ?? Ta fcora   emaraθikasin (pu) mona tus.
            the flowers whither   by   alone them

       c.   Ta filla   ksiraniskusin (pu) mona tus
            the leaves dry   by   alone them
            'Leave dry by themselves'

       d.   ?? Ta filla   eksiraθikasin (pu) mona tus
            the leaves dry   by   alone them
            'The leaves were dried.'

These diagnostics though do not focus on *-isk* specifically, but the selectional properties of the roots of these verbs. The possibility of analyzing *-isk* as participating in causative/anticausative alternations is ruled out. Instead, I will assume that the limited use of *-isk* is triggered by the presence of an overt verbalizer in the morphosyntactic structure of the verb and its exponence is conditioned by perfective/imperfective aspect. The *-isk* morpheme does not only appear with change-of-state verbs, but also borrowed verbs. The

common property of the two sets of groups is the presence of a verbalizer *-n* in the first case and the presence of a verbalizer *-ar* in the second case. Below I illustrate some examples of the use of *-isk* with the verbalizer *-ar*.

(59) a. kkansel -ar -isk   -o
          cancel   v   IMPERF 1SG
          'I am canceling'

      b. e-   kkansel -ar -a
          PAST cancel   v   1SG
          'I cancelled'

      c. park -ar -isk   -o
          park v   IMPERF 1SG
          'I am parking'

      d. e-   park -ar -a
          PAST park v   1SG
          'I parked'

      e. ʃutt   -ar -isk   -o
          shoot v   IMPERF 1SG
          'I am passing the ball'

      f. e   -ʃut   -ar -a
          PAST shoot v   1SG
          'I passed the ball'

      g. tʃekk -ar -isk   -o
          check v   IMPERF 1SG
          'I am checking'

      h. e-   tʃekk -ar -a
          PAST check v   1SG
          'I checked'

The VI rule for *-isk* is as follows:

(60) [+IMPERF] → *-isk*/$v_{-ar/-n}$___

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(61)

a.

```
              Agr
             /    \
         T_low    [+2sg]
        /    \
      Asp   [-PAST]
     /   \
    v   [-PERF]
   /  \
 √PARK  v
```

b.

```
              Agr
             /    \
         T_low    -s
        /    \
      Asp    -i
     /   \
    v   -isk
   /  \
 park  -ar
```

(62)

a.

```
              Agr
             /    \
         T_low    [+2sg]
        /    \
      Asp   [-PAST]
     /   \
    v   [-PERF]
   /   \
 √WITHER  v
```

b.

```
              Agr
             /    \
         T_low    -s
        /    \
      Asp    -i
     /   \
    v   -isk
   /   \
 mara  -n
```
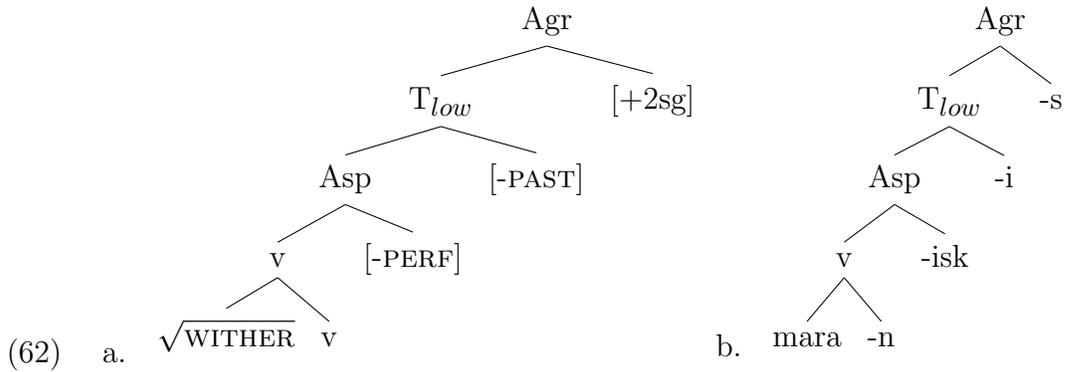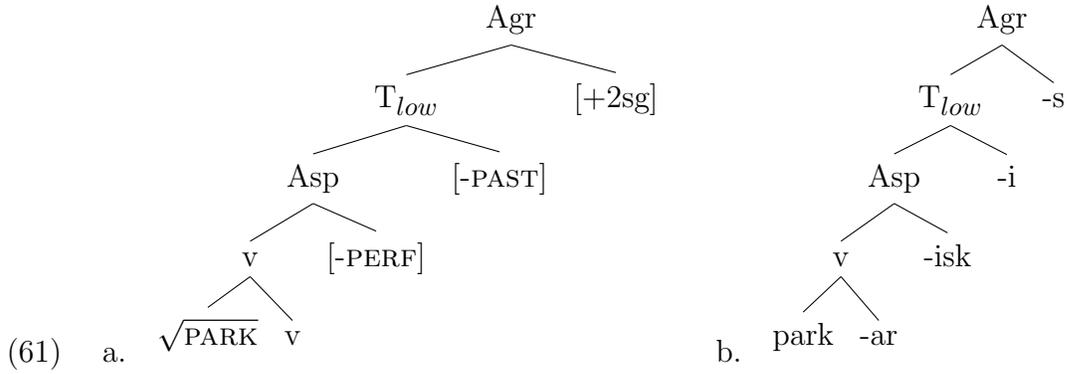
The discussion so far contributes to the understanding of the function and distribution of an aspectual morpheme not previously discussed to my knowledge in the literature of Greek, whose appearance is contingent upon the exponence of a verbalizer in the structure.

Last, perfective/imperfective alternations appear in the Cypriot Greek verb morphology with other consonantal exponents. These exponents are lexically conditioned, but they can appear as -s, when preceded by a vowel. As discussed in a previous section, theme vowels adjacent to roots have an exponence of -i which is the least specified morpheme for class specification. Second conjugation verbs that use this special vowel realize their aspectual morpheme for perfective aspect as -s. The first table below shows consonantal perfective/imperfective alternations and the second table shows the consistent apperance of -s in the context of a vowel.

1st CONJUGATION VERBS + CONSONANTAL ALTERNATIONS

NONPAST.IMPERF	NONPAST.PERF	Meaning
xá -n -o	xá -s -o	'lose'
mí -n -o	mí -n -o	'stay'
ká -mn -o	ká -m -o	'do'
ɣrá -f -o	ɣrá -ps -o	'write'
θkjavá -z -o	θkjavá -s -o	'read'
pé -z -o	pé -ks -o	'play'
z -ó	zí -s -o	'live'

Table 2.27: 1st Conjugation: Consonant alternations

2nd CONJUGATION VERBS + CONSONANTAL ALTERNATIONS

NONPAST.IMPERF.1SG	NONPAST.PERF.1SG	Meaning
pat -ó	pat -í -s -o	'step on'
aɣap -ó	aɣap -í -s -o	'love'
parakal -ó	parakal -é -s -o	'ask for'
prospaθ-ó	prospaθ -í -s -o	'try'
mbor- ó	mbor -í -s- o	'can'
sinxor -ó	sinxor í -s -o	'forgive'
lipoθim -ó	lipoθim -í -s -o	'faint'
akoluθ -ó	akoluθ -í -s -o	'follow'
simbaθ -ó	simbaθ -í -s -o	'like'
proxor -ó	proxor -í -s -o	'move forward, proceed'
xor ó	xor -í -s -o	'fit into'
kiklofor -ó	kiklofor -í -s -o	'go out, circulate'
tilefon -ó	tilefon -í -s -o	'call'
sizit -ó	sizit -í -s -o	'talk, discuss'

Table 2.28: 2nd Conjugation: Consonant alternations

This section discussed the existence of morphemes marking grammatical aspect in the Cypriot Greek verb's morphology: namely *-ik* in the nonactive Voice, *-isk* with overt verbalizers, *-s* when preceded by a vowel and last a number of different exponents lexically conditioned by the root.

2.2.5 Tense

Tense is registered in three ways: through the presence of a prefixal vowel known as the augment, through the stress and through allomorphic suffixes. Traditionally, the Greek verb system has been divided to two conjugation classes (verb classes) according to the position of the stress and the form of the agreement suffixes [5] (see Holton et al. 1997). Tense and Agreement have been treated as a portmanteau suffix (Spyropoulos et al. 2015; Spyropoulos and Revithiadou 2009; Merchant 2015 among many others). Instead of adopting this view, I propose to divide the morphemes of tense and agreement and to provide an account for their distribution.

VERB CONJUGATIONS

1ST	2ND-CLASS A	2ND-CLASS B
xá -n -o	fakk -ó	pon -ó
xá -n -i -s	fakk -á -s	pon -í -s
xá -n -i -∅	fakk -á -∅	pon -í -∅
xá -n -u -men	fakk -ú -men	pon -ú -men
xá -n -e -te	fakk -á -te	pon -í -te
xá -n -u -sin	fakk -ú -sin	pon -ú -sin

Table 2.29: Non-Past Imperfective

VERB CONJUGATIONS

1ST	2ND-CLASS A	2ND-CLASS B
xá -s -o	fatʃ -í -s -o	pon -í -s -o
xá -s -i -s	fatʃ -í -s -i -s	pon -í -s -i -s
xá -s -i -∅	fatʃ -í -s -i -∅	pon -í -s -i -∅
xá -s -u -men	fatʃ -í -s -u -men	pon -í -s -u -men
xá -s -e -te	fatʃ -í -s -e -te	pon -í -s -e -te
xá -s -u -sin	fatʃ -í -s -u -sin	pon -í -s -u -sin

Table 2.30: Non-Past Perfective

---

5. Spyropoulos et al. (2015) provide a 3rd conjugation class for contracted verbs; these do not appear in Cypriot Greek. For example, the verb 'hear' in the 2nd person singular is *akú-s* in Standard Modern Greek, but *akú-is in Cypriot Greek*.

1st	2nd-Class A	2nd-Class B
é- xa -n -a	e- fakk -ú -s -a	e- pon -ú -s -a
é- xa -n -e -s	e- fakk -ú -s -e -s	e- pon -ú -s -e -s
é- xa -n -e -∅	e- fakk -ú -s -e-∅	e- pon -ú -s -e -∅
e- xá -n -a -men	e- fakk -ú -s -a -men	e- pon -ú -s -a -men
e- xá -n -e -te	e- fakk -ú -s -e -te	e- pon -ú -s -e -te
e- xá -n -a -sin	e- fakk -ú -s -a -sin	e- pon -ú -s -á -sin

Table 2.31: Past Imperfective

1st	2nd-Class A	2nd-Class B
é- xa -s -a	e- fátʃ -i -s -a	e- pón -i -s -a
é- xa -s -e -s	e- fátʃ -i -s -e -s	e- pón -i -s -e -s
é- xa -s -e -∅	e- fátʃ -i -s -e- ∅	e- pón -i -s -e -∅
e- xá -s -a -men	e- fatʃ -í -s -a -men	e- pon -í -s -a -men
e- xá -s -e -te	e- fatʃ -í -s -e -te	e- pon -í -s -e -te
e- xá -s -a -sin	e- fatʃ -í -s -a -sin	e- pon -í -s -a -sin

Table 2.32: Past Perfective

The forms of what are identified here as the tense morphemes that seem to differ according to the conjucation class the verbs belong in are not accidental. To start with the Non-Past exponents, for both perfective and imperfective, it is clear that the most widespread forms involve the forms *-i.(*2sg*)*, *-i.(*3s*)*, *-u.(*1pl*)*, *-e.(*2pl*)*, *-u.*3pl. These appear in the first conjugation verbs in non-past imperfective and in all forms in non-past perfective. On the other hand, when the tense position shows stress, a set of other exponents appears (e.g. *-á.*2sg,*-á.*3sg,*-ú.*1pl,*-á.*2pl,*-ú.*3pl) for 2nd conjugation Class A verbs[6]. Of course, the tense morphemes show outward sensitivity to the person morphemes specified in the environment that triggers VI. For example, the Tense exponent between Class A and Class B verbs of the second conjugation is different, *aɣap**as*** and *pon**is***.

---

6. This could potentially be explained as phonologically conditioned allomorphy (Anderson 2008; i Alsina et al. 2015)

(63) a. aɣap -á   -s
          love NONPAST 2SG
          'You love.'

      b. pon -í   -s
          hurt NONPAST 2SG
          'You hurt.'

(64) a. T↔ -e/__[+2SG]

      b. T↔ -a/__[+2SG]

      c. T↔ -i/__[+2SG]

To differentiate between the vowels inserted in (64b) and (64c), we need to assume that specification of the Class on the Root is part of the conditioning environment.

CLASS A	CLASS B
-ó	-ó
-á-s	-í-s
-á	-í
-ú -me	-ú -me
-á -te	-í -te
-ú -sin	-ú -sin

Table 2.33: Non-Past Imperfective forms

Allomorphy in a cyclic derivational system (Embick 2010) predicts that a non-cyclic head, such as the tense head, can show allomorphy based on the Root if they are concatenated, as defined in his words below.

(65)   "Non-Cyclic Y may show allomorphy determined by Root or non-cyclic
          head α" in cyclic x's complement in ...α]x]Y provided that α and Y are
          concatenated when VI occurs.   (Embick 2010: 47)

What is noticeable is that this allomorphy is not present when the tense morpheme is not concatenated with the root.

(66) a. aɣap -í -s   -i   -s
          love V PERF NONPAST 2SG
          'You will love'

      b. * aɣap -í -s   -a   -s
            love V PERF NONPAST 2SG
          'You will love'

Exponence of tense morphemes in Cypriot Greek is conditioned by the person (agreement) suffix that follows.

Separating the agreement suffix from tense is a matter neglected in previous work that alway assumes the two to be realized as portmanteaux (Spyropoulos and Revithiadou 2009; Merchant 2015 among others). The absence of these tense vowels from Class A and Class B despite the appearance of the agreement suffixes supports the idea that the two should be assumed to be realized by different exponents.

2.2.6   The augment

The Past Tense augment *e-* always appears as a prefix and it can occur in two positions in a verbal complex. It always appears in a word-initial position, preceding any adverbs, verbs and nouns as first constituents in a verbal complex, and can also optionally surface as left adjacent to the verb root.

(67) a. E-   psi -s   -a.
          PAST cook PERF AGR
          'I cooked'.

      b. E_1- ksana- (e_2-) psi -s   -a.
          PAST again   PAST cook PERF AGR
          'I cooked again.'

The optionality with respect to e_2- is surprising for the simple fact that the augment in Greek is typically found adjacent to the verb stem; not surfacing in that position with a verbal form in the past tense is a non-predictable form in other cases (i.e. *psisa*). I

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will propose here an analysis that explains this optionality and the obligatory appearance of the augment word-initially. The appearance of the augment in a non-adjacent position to the verb stem is also only attested in these cases. The distribution of the augment depends on an *Initiality* constraint (see Arregi and Nevins 2012 for similar constraints) that requires a verbal complex to always have a word-initial augment.

(68) *Initiality constraint*: For any [+PAST] verb stem, spell-out the augment at the leftmost edge.

Past Tense in Standard Modern Greek is marked morphologically on the verb with the appearance of the augment *e-*[7], which appears in some verbs in Standard Modern Greek, conditioned by the number of syllables and the position of the stress (akso known as the antepenultimate stress). Stress in Standard Modern Greek is traditionally described as "dynamic stress" and it is acoustically manifested as longer duration or higher amplitude of the stressed syllable compared to the unstressed syllable(s) (Arvaniti 1999). Primary stress is always marked on one of the last three syllables, but its position is sometimes affected by specific morphemes (i.e. genitive suffix *u-*, past etc.). The Past Tense augment *e-* is found in two-syllable verbs that are stressed on the penult in the NonPast Tense (as in examples in Spyropoulos and Revithiadou 2009; Merchant 2015; van Oostendorp 2012; Ralli 2003). In these cases, the augment surfaces to hold the stress that retracts leftwards to the antepenultimate syllable in the past (69b). If the verb already has an antepenultimate syllable, then the stress shifts to it and the augment *e-* does not surface, as in (69d).

(69) *Standard Modern Greek*

    a. Psí -n   -i   -s.
        cook IMPERF NONPAST 2SG
        'You are cooking.'

---

7. The morphological marking of Past Tense on the verb also involves specific suffixes, which co-occur with the augment.

b. *(É)- psi -n -e -s.
   PAST cook IMPERF PAST 2SG

   'You were cooking.'

c. ðjavá -z -i -s.
   read IMPERF NONPAST 2SG

   'You are reading.'

d. (*E-) ðjáva -z -e -s.
   PAST read IMPERF PAST 2SG

   'You were reading.'

A simple description of this shows that the augment appears when there is no syllable on the verb stem which can bear the antepenultimate stress:

(70) a. Underlying phonological form: /psina/$_{+past}$ 'cook'

b. Antepenultimate past tense stress: [´ + psina]

c. Phonological augment epenthesis: [é + psina]

In a similar way, the Cypriot Greek augment *e-* appears as the antepenultimate syllable in two-syllable verbs (71b) and seems at a fist glance to serve again stress-related purposes. Surprisingly, it also appears in three-syllable verbs where the antepenultimate is stressed and the augment remains unstressed, as in (71d).

(71) *Cypriot Greek*

a. psí -n -i -s.
   cook IMPERF NONPAST 2SG

   'You were cooking.'

b. *(é-) psi -n -e -s.
   PAST cook IMPERF PAST 2SG

c. θcavá -z -i -s .
   read IMPERF NONPAST 2SG

   'You are reading.'

d. *(e-) θcáva -z -e -s .
   PAST read IMPERF PAST 2SG

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Under an analysis of the occurrence of this prefix in Standard Modern Greek as a completely phonologically determined element, the generalization that requires its appearance only when it is stressed does not hold. The difference observed here is based on a basic understanding of the augment as either a phonological phenomenon or an exponent of Past Tense that depends on a particular morphosyntactic structure. Similarly, the use of the augment in Ancient Greek was conceptualized in a different way than the corresponding Standard Modern Greek use. As Joseph and Janda (1988) mention "the augment, therefore, must be considered to be present in the underlying morphological structure of Ancient Greek past tense forms; furthermore, its occurrence there is not linked to any phonological feature(s)."(Joseph and Janda 1988: 198). This point emphasizes exactly that augments in languages that have them should not necessarily be seen as a phonological phenomenon provided the existence of the augment throughout the paradigm and not only under certain phonological conditions. Joseph and Janda (1988), for example, add that in a similar way the German participial *ge-*, as in (72), "has remained a morphological rule, albeit one with greater phonological conditioning"(Joseph and Janda 1988:201).

(72)   a. Ich komme mit dem Bus.
          I   come   with the bus
          'I am coming with the bus.'

       b. Ich bin mit dem Bus ge-   kommen.
          I   am with the   bus AUG- come
          'I have come with the bus.'

In this sense, the Cypriot Greek augment is especially interesting in documenting its use as based on morphosyntactic structure. In Table 1, I provide the full paradigm for *psín-* 'to cook' belongs in the first conjugation and *fil-* 'to kiss' belongs in the second conjugation (first class). The augment appears in both Active and NonActive Voice[8].

_____

8. The underscore in the table marks the syllables that can be stressed.

Person	PAST, PERF	Meaning	PAST, PERF	Meaning
1sg	é-psi-s-a	'I cooked'	e-fíli-s-a	'I kissed'
2sg	é-psi-s-e-s	'you cooked'	e-fíli-s-e-s	'you kissed'
3sg	é-psi-s-e-n	'he/she cooked'	e-fíli-s-e-n	'he/she kissed'
1pl	e-psí-s-a-men	'we cooked'	e-filí-s-a-men	'we kissed'
2pl	e-psí-s-e-te	'you cooked'	e-filí-s-e-te	'you kissed'
3pl	e-psi-s-a-n[9]	'they cooked'	e-fíli-s-a-n	'they kissed'
3pl	e-psí-s-a-sin	'they cooked'	e-filí-s-a-sin	'they kissed'

Person	PAST, IMPERF	Meaning	PAST, IMPERF	Meaning
1sg	é-psi-n-a	'I was cooking'	e-fil-ú-s-a	'I was kissing'
2sg	é-psi-n-e-s	'you were cooking'	e-fil-ú-s-e-s	'you were kissing'
3sg	é-psi-n-e-n	'he/she was cooking'	e-fil-ú-s-e-n	'he/she was kissing'
1pl	e-psí-n-a-men	'we were cooking'	e-fil-ú-s-a-men	'we were kissing'
2pl	e-psí-n-e-te	'you were cooking'	e-fil-ú-s-e-te	'you were kissing'
3pl	e-psí-n-a-n	'they were cooking'	e-fil-ú-s-a-n	'they were kissing'
3pl	e-psí-n-a-sin	'they were cooking'	e-fil-ú-s-a-sin	'they were kissing'

Table 2.34: Cypriot Greek verbal morphology in Active Voice

The augment *e-* appears consistently, regardless of the number of syllables, in both two-syllable and three-syllable verbs or in other words, those that have an already existing antepenultimate syllable or not. This contradicts the idea that the augment develops for the antepenultimate stress to be attained or that the antepenultimate stress is an exponent of the PAST or that the augment is a segmentally empty prefix with lexically encoded stress (Spyropoulos and Revithiadou 2009). Spyropoulos and Revithiadou (2009) argue that the empty vocalic slot of the prefix materializes under certain conditions providing a phonological form of this default exponent of PAST. This analysis is built on the assumption that agreement and tense form a fused terminal node (*i.e.* a portmanteau morpheme), which is subject to fission and that the empty prefix discharges this specification, which is the [+past] information. Instead, I propose an analysis that does not follow those assumptions and instead keeps tense and agreement as separate terminal nodes, realized by different exponents in the morphological decomposition of the verb.

The distribution of the augment in Cypriot Greek shows morphosyntactic differences

Cypriot Greek Past Tense- NonActive Voice		
Person	PAST, PERF	Meaning
1sg	e-plí-θ-ik-a	'I was washed'
2sg	e-plí-θ-ik-e-s	'you were washed'
3sg	e-plí-θ-ik-en	'he/she was washed'
1pl	e-pli-θ-ík-a-men	'we were washed'
2pl	e-pli-θ-ík-e-te	'you were washed'
3pl	e-pli̱-θ-ík-a-n	'they were washed '
3pl	e-pli-θ-ík-a-sin	'they were washed '
Person	PAST, IMPERF	Meaning
1sg	e-plin-ísk-u-mun	'I was being washed'
2sg	e-plin-ísk-e-sun	'you were being washed'
3sg	e-plin-ísk-e-tun	's/he was being washed'
1pl	e-plin-isk-ú-mastan	'we were being washed'
2pl	e-plin-ísk-e-stun	'you were being washed'
3pl	e-plin-ísk-u-ndan	'they were being washed'

Table 2.35: Cypriot Greek verbal morphology in NonActive

with its close relative, Standard Modern Greek, in ways that the already existing analyses of the Greek augment cannot explain. Even more, the distribution of the Cypriot Greek augment in complex items seems to also differ in cases of verbs preceded by preverbs, verbs or nouns, as will be discussed further below. Most importantly though, changes in the linear order of morphemes are affected by derivational operations that are insensitive from the phonological exponence of the morphemes.

Cypriot Greek shows a different distribution of the augment compared to its use in Standard Modern Greek in that the Cypriot Greek augment is a Past Tense exponent which surfaces independently of stress. It depends on both the root and the suffixes, and not the root alone. This cannot be seen in Cypriot Greek given the augment's obligatory presence, but the restrictions in Standard Modern Greek show the pattern in the following example. Example (73) shows a one-syllable root and example (74) a two-syllable root.

(73)   a. stél -o
          send -NONPAST.1SG
          'I am sending.'

       b. é-   stil -a
          PAST- send -PAST.1SG
          'I sent.'

       c. stíl -a   -me
          send -PAST -1SG
          'We sent.'

(74)   a. kaθar -i -z   -o
          clean -v -IMPERF -NONPAST.1SG
          'I am cleaning.'

       b. kaθar -i -s   -a
          clean -v -PERF -PAST.1SG
          'I cleaned.'

       c. kaθar -i -s   -a   -me
          clean -v -PERF -PAST -1PL
          'We cleaned.'

In (73b), the suffix that follows the root is one syllable, but in (73c) the suffixes that follow the root form two syllables. The augment appears only in (73b), but it does not when the suffixes that follow the root form more than one syllable. This clearly shows that the augment *e-* in Standard Modern Greek is conditioned by the count of syllables of the stem, and not the root. On the other hand, (74) shows a two-syllable root and given the number of syllables as suffixes, the augment does not appear in any of these.

As I have shown this generalization is irrelevant to Cypriot Greek which instead follows the following set of rules[10] :

10.
These rules are of course language-specific with respect to the distribution of the augment in Cypriot Greek. Ofitika Pontic, for example, does not have a more specified rule for consonant-initial verbs where epenthesis of the augment seems to result in coalescence of a front vowel with /-e/ (Revithiadou and Spyropoulos 2012).

   (1)   a. aɣapúme > **e-** ɣapésame 'we loved'
         b. akúame > **e-** kúame 'we heard'

(75)   a. T[+PAST] →e/__C

        b. T→∅

By the Elsewhere principle, Cypriot Greek vowel-initial verbs will not show *e-*, as in the following example:

(76)   a. aɣap -á   -s.
            love -NONPAST -2SG
            'You love.'

        b. (*e)- aɣáp -i -s   -e   -s.
            PAST- love -v -PERF -PAST -2SG
            'You loved.'

The following trees illustrate the appearance of the augment *e-* in Cypriot Greek after head movement has applied. Given the two different tense morphemes, there are two T projections, which are labeled a T_{low} and T_{high}. T_{high} realizes an exponent only in Past Tense, similarly to particular allomorphs appearing in a T_{high} position in the analysis of the verb in Irish (Ostrove 2015).

(77)   é-   psi -s   -e   -s
        PAST- cook -PERF -PAST -AGR
        'You cooked (it).'

(78) a.

```
                    T_high                                    T_high
          ┌───────────┴──────────┐                ┌────────────┴─────────┐
       [+PAST]                   Agr             e-                      Agr
                          ┌───────┴──────┐                        ┌───────┴──────┐
                        T_low          [+2sg]                   T_low           -s
                    ┌─────┴─────┐                           ┌─────┴─────┐
                  Asp        [+PAST]                       Asp          -e
               ┌───┴───┐                                ┌───┴───┐
              v      [+PERF]                            v        -s
          ┌───┴───┐                                 ┌───┴───┐
        √PSI      v                               psi-      v
```

b.
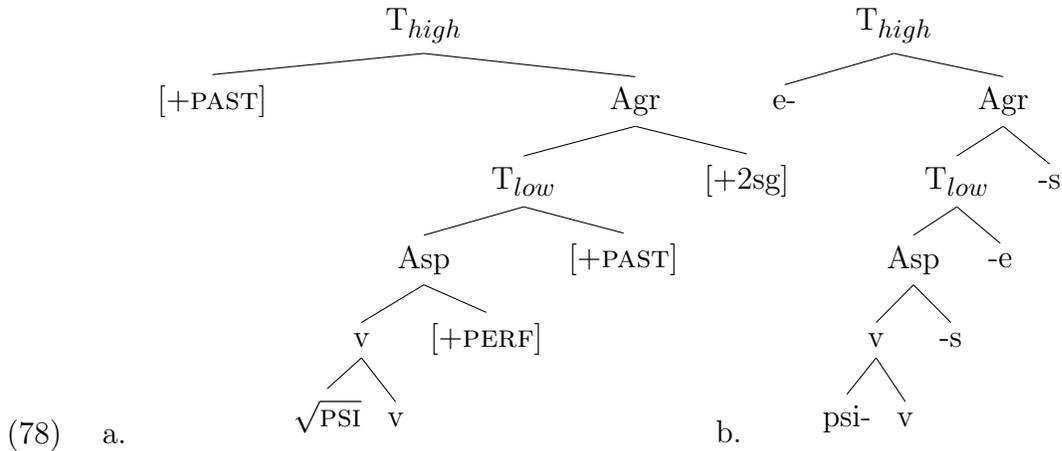
The main claim here is that the Cypriot Greek augment *e-* is an exponent of [+PAST], and not an empty prefix (Spyropoulos and Revithiadou 2009) in a feature hierarchy where T and Agr do not form a fused terminal node. Given the clear morphological, rather than morphophonological, status of the augment in Cypriot Greek, a different distribution should also be expected in verbal complexes that make use of it. More specifically, the morphological nature of the Cypriot Greek augment is also seen in cases of Doubling and Metathesis, where abstract morphemes are subject to the relevant operation that generate a particular linear order.

In previous work, Spyropoulos and Revithiadou (2009) have argued that the augment is derived via fission targeting the fused terminal node of T marking [agreement, (+past)]. When the [+past] feature is not discharged, fision realizes this feature on another T position, surfacing as the augment. Provided this proposal, it follows that the assumption that fission targets the fused agreeement-tense node in the derivation of the past tense morphology cannot be implemented since the two nodes involved are no longer adjacent. Spyropoulos and Revithiadou (2009) also argue that the empty vocalic slot of the augment materializes under certain conditions providing a phonological form of this default exponent of PAST. These conditions are built on the assumption that agreement and tense form a fused terminal node, which is subject to fission and that the empty prefix discharges this specification, which is the [+past] information. This does not clearly predict the

restrictions of the prosodic structure, which only allow the augment e- to appear as a stressed antepenultimate syllable in Standard Modern Greek. Secondly, this analysis would not explain the facts, if agreement and tense were indeed separate projections, as argued here.

More specifically, the morphological nature of the Cypriot Greek augment is also seen in cases of Doubling and Metathesis, where abstract morphemes are subject to the relevant operation that generate a particular linear order. The view of the augment as part of the morphosyntactic structure that precedes exponence or Vocabulary Insertion is clearly seen with the absence of any changes based on prosodic conditions in the examples above. Furthermore, double exponence of the augment, and more specifically cases of Metathesis and Doubling as will be discussed for the examples to follow, support the proposal that in a derivational view of morphology, the operations that affect the augment apply before Vocabulary Insertion and phonological exponence.

The data here are cases of verbal complexes in Cypriot Greek, which previous work classifies in different categories according to the properties of the preverb. Some of the preverbs discussed below are first constituents of compounds, which is not the case with prefixes that do not have this phrasal status. This classification is relevant here with respect to the appearance of the augment in some of these categories, but not others: adverbs, verbs and nouns serving as first constituents in the verbal complexes allow double appearance of the augment. On the other hand, prefixes only allow the augment word-initially. Several studies have pointed out the importance of this classification with terms like affixoids being assigned to show a mixed category between derivation and compounding. The distribution of the augment partly confirms the need for this classification to exist with one group of preverbs allowing post-syntactic operations to take place and the other group disallowing them. I argue that the cases described here have different syntax in terms of the position of the preverb and the prefix in the structure.

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An example of augment reduplication is given below:

(79) e-   ksana- e-   kam -a.
      PAST again   PAST do   1SG
      'I did something again.'

Following Arregi and Nevins (2012), morphological Metathesis and Doubling are ordering phenomena of Generalized Reduplication that apply to the output of Linearization in the postsyntactic component. Generalized Reduplication, is defined in Harris and Halle (2005) as:

> "reduplication is a process of word formation whereby a designated contiguous subsequence of elements in a base form is repeated that is, appears twice in its entirety ("full reduplication") or in part ("partial reduplication") in a derived form" and it is believed that "not only phonological segments but syntactic and morphological elements as well can be both triggers and targets of reduplication" (Harris and Halle 2005 :198).

Doubling (copying) and Metathesis (displacement) of linear sequences are operations that change the linear order of particular morphological contexts to satisfy certain constraints and they take place at the Linear Operations module before Vocabulary Insertion (VI).

Reduplication[11], as discussed in Harris and Halle (2005), is a process of word formation whereby a designated contiguous subsequence of elements in a base form is repeated; that is, it appears twice in its entirety or in part in a derived form. This process of repeating particular elements is driven by a condition specific to the language where the phenomenon appears. Importantly, the string reduplicated is a contiguous subsequence in the word.

---

11. Reduplication lies on identity based on a large degree on the interaction of faithfulness demanding identity. As a morphological process, it relates a base form of a morpheme or stem to a derived form that may be analyzed as being constructed from the base form via the affixation (or infixation) of phonemic material which is necessarily identical in whole or in part to the phonemic content of the base form (Marantz 1982; McCarthy and Prince 1993; 1995), see Broselow and McCarthy (1983) for infixing reduplication.

(80)   XWYZ

       X[[WY]]Z

       XWYWYZ

The brackets used here are unpronouncable elements and must be eliminated before the phonological realization. They are part of readjustment rules that specify the relevant morphological conditions driving the changes. In addition to the brackets, partial reduplication is the result of partial deletion indicated by unpaired angle brackets inside a sequence delimited by paired square brackets.

(81)   XWYZ

       X[[W⟩Y]]Z

       XWYWYZ

       XYWYZ

The angled bracket indicates deletion of the element to its left, resulting in what appears on the surface as partial reduplication. For example, the formalism applies in Madurese as follows:

(82)   [[es⟩tre]]an → estre-estre-an=tre-estre-an   (Harris and Halle 2005)

The augment e- can appear in two positions[12] when the verb combines with an adverb[13]. In these cases, e_2- can be omitted, but when it is present and serves as the antepenultimate syllable, it holds the stress. The preverbs *psil-, mis-, poll-* are also free morphemes used

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12. When referring to the e- on the immediate left of the first member of the compound, it is indicated with e_1, while e_2 refers to the augment to the immediate left of the root. The underscore signifies the possible positions of the stress based on which one of the two positions acts as the antepenult.

13. *-o-* is glossed as a *compound marker*, which is a linking vowel commonly found in compounds (Ralli and Karasimos 2009). The compound marker is inserted as *-o-* in most cases, as in *nix-o-kóptis* 'nail cutter' and *pay-ó-tsenda* 'old/useless bag'. When 'old' acts as an adjective to the noun, then the feminine suffix appears on both the adjective and the noun *paya tsenda* 'old bag'. Cases like these have been argued to be adverb incorporation cases in the VP (Rivero 1994).

as adjectives (e.g. *psilo xtirio* 'tall building') and *kal-, siɣ-, prot-* can be used as adverbs (e.g. *parpato siɣa* 'I walk slowly').

(83) a. E$_1$- psil- <u>o</u>- (e$_2$-) psi -s -a to.
       PAST little CM PAST cook PERF PAST it
       'I barely cooked it.'

    b. E$_1$- mis- <u>o</u>- (e$_2$-) psi -s -a to.
       PAST half CM PAST cook PERF PAST.1SG it
       'I half cooked it.'

    c. E$_1$- kal- <u>o</u>- (e$_2$-) psi -s -a to.
       PAST good CM PAST cook PERF PAST.1SG it
       'I cooked it well.'

    d. E$_1$- poll- <u>o</u>- (e$_2$-) psi -s -a to.
       PAST much CM PAST cook PERF -PAST.1SG it
       'I cooked it a lot.'

    e. E$_1$- par<u>a</u>- (e$_2$-) psi -s -a to.
       PAST over PAST cook PERF PAST.1SG it
       'I overcooked it.'

    f. E$_1$- siɣ- <u>o</u>- (e$_2$-) psi -s -a to.
       PAST slow CM PAST cook PERF PAST.1SG it
       'I slow-cooked it.'

In (83), the stress surfaces on the augment since the verb *psín-* 'to cook' belongs in the first conjugation where stress is found on the root. In fact, when the stress is on the final syllable then stress shifts to the penultimate syllable showing 'stress retraction' as in *ksana-pon-ó > e$_1$-ksana-(e$_2$-)pón-u-n* 'I was in pain again'. So, stress always retracts a syllable to the left in the past. As seen in (84), the augment does not appear in non-past. The future expressed with *en na* is syntactically periphrastic in Cypriot Greek, characterized by the copula and a subordinating element (Merchant and Pavlou 2016, Terzi 1999) and uses a different set of suffixes compared to the Past Tense (i.e. *o-* for 1ST PERSON).

(84) a. En na to psil- o- psí -s -o.
be C it little CM cook PERF NONPAST.1SG
'I will barely cook it.'

b. En na to mis- o- psí -s -o.
be C it half CM cook PERF NONPAST.1SG
'I will half cook it.'

There are is no interaction between the augment and the stress in these cases in three syllable verbs, as is already predicted by the basic distribution seen in the previous section.

(85) a. E_1- psil- o- (e_2-) θkjáva -s -a.
PAST little CM PAST read PERF PAST
'I studied a little.'

b. E_1- mis- o- (e_2-) θkjáva -s -a.
PAST half CM PAST read PERF PAST
'I studied enough, but not everything.' [lit. I half studied.]

c. E_1- ksana- (e_2-) θkjáva -s -a.
PAST again PAST read PERF PAST
'I studied again.'

As seen in (73), omitting the first augment is not allowed.

(86) a. * Siɣ- o- (e_2-) psi -s -a to.
slow CM PAST cook PERF PAST it
'I cooked it slowly.'

b. * Mis- o- (e_2-) psi -s -a to.
half CM PAST cook PERF PAST it
'I half cooked it.'

c. * Mis- o- (e_2-) θkjáva -s -a.
half CM PAST read PERF PAST
'I studied enough, but not everything.' [lit. I half studied.]

Another case where the PAST can surface in two positions is with the use of *ksana* 'again', which also forms a compound with the verb. Unlike the cases seen above, the compound marker *o*- does not show up with the use of *ksana*, since the vowel *a*- is part of the root of *ksana* and a vowel does not need to be inserted between the two members

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of the compound. Unlike *ksana*, *a-* is not always part of the root and this can be seen by the appearance of the e_2-, as in *met-á-* 'after', e_1-*met-é$_2$-lav-a* 'to receive communion' and in *par-a-*, e_1-*par-é$_2$-lav-a* 'to receive'.

(87) a. En na ksana- psí   -s   -o.
          be to again   cook PERF NONPAST
          'I will cook again.'

      b. E$_1$- ksan<u>a</u>- (e$_2$-) psi   -s   -a.
          PAST again   PAST cook PERF PAST
          'I cooked again.'

      c. En na ksana- pé   -ps   -o.
          be to again   send PERF NONPAST
          'I will send again.'

      d. E$_1$- ksan<u>a</u>- (e$_2$-) pe   -ps   -a.
          PAST again   PAST send PERF PAST
          'I sent again.'

As in the examples given before, e_1- is obligatory with the use of *ksana*.

(88) a. * Ksan<u>a</u>- (e$_2$-) psi   -s   -a   to.
            again   PAST cook PERF PAST it
            'I cooked it again.'

      b. * Ksan<u>a</u>- (e$_2$-) pe   -ps   -a   to.
            again   PAST send PERF PAST it
            'I sent it again.'

Double augments also appear in compounds[14] which show once again that the e_2- does not have to be stressed. In the following example, the stress is on the final syllable in the NonPast and retracts one syllable to the left in the Past. When e_2- is present, it is unstressed.

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14. In Modern Greek, these combinations are phonologically and morphologically true compounds since they have a single stress and a single inflection site, on the right edge of the second member. Further, the appearance of the linking vowel *-o* is exactly what is found in other modern compounds (Nicholas and Joseph 2009). Some examples are *psar-o-kaiko* 'fish boat', *kukl-o-spito* 'doll house' (Ralli 2008).

(89) a. I   Patu tʃiy-   o- pon -í   kaθi mera.
          the Patu abdomen- CM- hurt- -NONPAST every day
          'Patu has a stomachache every day.'

      b. I   Patu e_1-   tʃiy-   o- (e_2-) pón -e   -n   extes.
          the Patu PAST- abdomen- CM- PAST- hurt- -PAST -AGR yesterday
          'Patu had a stomachache yesterday.'

The following tables show more examples with two-syllable & three-syllable verb stems,
irregular and suppletive verbs that are part of N-V and V-V verbal complexes.

NON-PAST, PERF	PAST,PERF	PAST,PERF, $+e_2$	Meaning
tsul-o-káts-o	e_1-tsul-ó-kats-a	e_1-tsul-o-é$_2$-kats-a	'to sit with knees bent'
ɣaur-o-mnjá-z-o	e_1- ɣaur-ó-mnja-s-a	e_1- ɣaur-o-é$_2$-mnja-s-a	'to look like a donkey'
anav-o-sví-n-o	anav-ó-svi-s-a	anav-o-é$_2$-svi-s-a	'to flicker'
tʃiy-o-pon-ó	e_1-tʃiy-o-pón-i-s-a	e_1-tʃiy-o-e$_2$-pón-i-s-a	'to have a stomachache'
xask-o-ɣel-ó	e_1-xask-o-ɣél-a-s-a	e_1-xasko-o-e$_2$-ɣél-a-s-a	'to gape and laugh'

Table 2.36: Verbal complexes with two-syllable verb stems, (1SG, PERF).

NON-PAST, IMPERF	PAST,IMPERF	PAST,PERF, $+e_2$	Meaning
tsul-o-káts-o	e_1-tsul-ó-kaθ-umun	e_1-tsul-o-é$_2$-kaθ-umun	'to sit with knees bent'
ɣaur-o-mnjá-z-o	e_1- ɣaur-ó-mnja-z-a	e_1- ɣaur-o-é$_2$-mnja-z-a	'to look like a donkey'
anav-o-sví-n-o	anav-ó-svi-n-a	anav-o-é$_2$-svi-n-a	'to flicker'
tʃiy-o-pon-ó	e_1-tʃiy-o-pón-u-n	e_1-tʃiy-o-e$_2$-pón-u-n	'to have a stomachache'
xask-o-ɣel-ó	e_1-xask-o-ɣél-un	e_1-xasko-o-e$_2$-ɣél-u-n	'to gape and laugh'

Table 2.37: Verbal complexes with two-syllable verb stems, (1SG, PERF).

Unlike preverbs, verbs, and nouns, prefixes do not show the same distribution with the
augment. More specifically, they do not allow the augment to appear to the immediate
left of the verb root, but only allow it word-initially (i.e. e_1-). This is the case with *ksi-*,
po- and *andi-* in the examples below.

(90) a. E$_1$- ksí- (*e_2-) va   -ps   -a   to.
          PAST de   PAST color PERF PAST it
          'I decolored it.'

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NON-PAST, PERF	PAST,PERF	PAST,PERF, $+e_2$	Meaning
xar-o-palé-fk-o	e_1-xar-o-pále-ps-a	e_1- xar-o-(e_2-)pále-ps-a	'to be at death's door'
ɣlik-o-kitá-z-o	e_1-ɣlik-o-kíta-ks-a	e_1- ɣlik-o-(e_2-)kíta-ks-a	'to have a sweet gaze'
strif-o-ɣirí-z-o	e_1-strif-o-ɣíri-z-a	e_1- strif-o-(e_2-)ɣíri-s-a	'to whirl around'
kli-o-stomnjá-z-o	e_1-kli-o-stómnja-s-a	e_1-klio-o-(e_2-)stómnja-s-a	'to stop talking'

Table 2.38: Verbal complexes with three-syllable verb stems, 1st sg.

    b. E_1- ksí- (*e_2-) θa -ps -a ton.
        PAST un PAST bury PERF PAST him
        'I unburied him.'[15]

(91) a. E_1- ksi- (*e_2-) mbérte -ps -a to.
        PAST ksi PAST unravel PERF PAST it
        'I unraveled it.'

    b. E_1- ksi- (*e_2-) kúmbo -s -a to.
        PAST ksi PAST button PERF PAST it
        'I unbuttoned it.'

With *po-*:[16]

(92) a. E_1- pó- (*e_2)- fkal -e -s ton.
        PAST *po* PAST take.out PAST AGR him
        'You exhausted him.'

    b. E_1- pó- (*e_2)- spa -s -e -s ton.
        PAST *po* PAST break PERF PAST AGR him
        'You beat him.'

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15. A possible exception here is *e₁-ksi̱-(e₂)-kam-a* 'undo'.

16. The meaning of *po* can vary and it is therefore glossed as *po*. A mere speculation would be a case of borrowing from the Standard Modern Greek *apo*, even though it is not found with these examples. A brief list shows that it can mark the end of an action, as in *po-θelo* 'stop wanting', *po-θerizo* 'stop mowing', *po-θimeno* 'stop being angry', *po-lalo* 'stop talking', *po-nistazo* 'stop being sleepy', *po-galefko* 'stop milking the cow', *po-muthkjazo* 'stop the numbness', *po-sarandono* 'complete 40 days'. It can also mark change of state, as in *po-θijazume* 'loose the noose', *po-krianisko* 'become cold', *po-ginome* 'get destroyed', *po-kliono* 'unlock', *po-laxanjazo* 'become green as a vegetable', *po-lefteronume* 'give birth', *po-methkjo* 'get sober'. Other uses are *po-varo* 'put my weight on one side', *po-dakkano* 'bite my lips to show regret', *po-kumbizo* 'find protection in someone', *po-lipo* 'being missed', *po-plinisko* 'rinse' (see also Yagoulis 1994)

c. E$_1$- po- (*e$_2$-) kúppi -s   -a   to.
   PAST po PAST flip   PERF PAST it
   'I flipped it.'

Even though the Past tense morpheme e_1- does not appear when there is a word-initial
vowel, the following shows that e_2- is also not possible with *andi-*:

(93) Andi- (*e$_2$-) mili -s   -a   .
      against PAST talk PERF PAST
      'I talked back.'

The two categories, preverbs and prefixes, show a different syntax for the linear
sequences given below.

(94) a. Aug Prefix root Asp T Agr

      b. Aug Preverb Aug root Asp T +Agr

A similar case to this is with the preverbs and conjunct particles in the verbal complexes
of Old Irish discussed in Adger (2006), where they share the same linear morphotactic
property but do not have the same syntax. The preverb in Old Irish occupies the leftmost
position of the verbal complex. When a complementizer-like morpheme, like the negative
morpheme, takes that position the preverb surfaces in a different position.

(95) a. Imm -us -(n)dich.
          PV   3PL protect[3S.C.PRES]
          'He protects them.'

      b. Ní -s   -(n)im -dich.
          NEG 3PL PV   protect[3S.C.PRES]
          'He does not protect them.'   (Adger 2006: 219)

Similarly to these data, the crucial aspect of the cases discussed here is the time of the
Merge of the verb root with the preverb (or prefix) (hence, PV below), that is whether
the verb root and the prefix have merged before verb raising to T. If the verb root and
the preverb form a verbal complex before V raised to T, then the complex can only be

merged with an augment linearly preceding both the preverb and the verb. On the other hand, if the verb root raised to T before the preverb and the verb merge together, then the root (along with all other functional exponents) can merge with the augment.

Prefixes that are merged lower in the structure will only appear to allow the augment in the first position as they have already formed a verbal complex when the augment is merged to the structure, as in the example repeated below.

(96) E$_1$- ksí- (*e$_2$-) va- -ps -a to.
      PAST de PAST color PERF PAST it
      'I decolored it.'

As the verb raises, the prefix and the verb form a verbal complex before the verb gets to T.

(97)

$$
\begin{array}{c}
\text{T}_{high} \\
\diagdown \\
\text{+PAST} \quad \text{Agr} \\
\text{T}_{low} \quad \text{+1SG} \\
\text{Asp} \quad \text{+PAST} \\
\text{PV} \quad \text{+PERF} \\
\text{v} \quad \text{pr} \\
\text{t}_V \quad \text{v}
\end{array}
$$
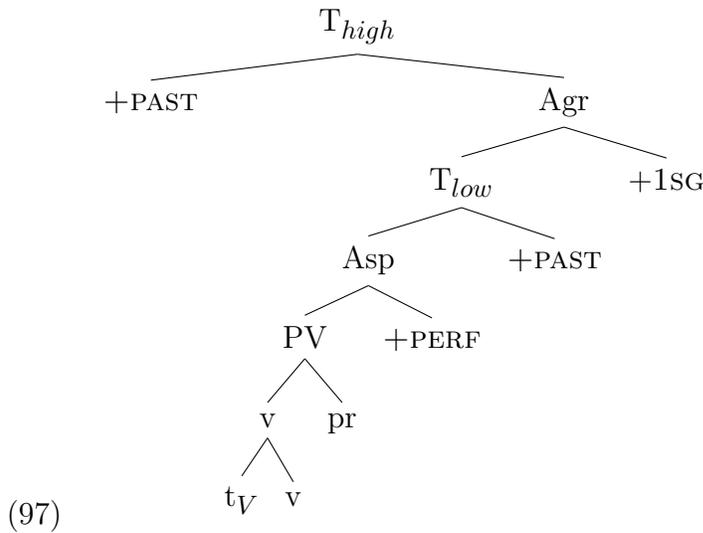
In the cases where the augment is allowed both to the left of the root and also at the first position, the verb root and the preverb do not form a verbal complex before the verb raises to T, since the preverb is merged higher than the T position in the structure.

(98) E$_1$- ksana̱- (e$_2$)- pe- -ps -a to.
      PAST again PAST send PERF PAST it
      'I sent it again.'

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(99)
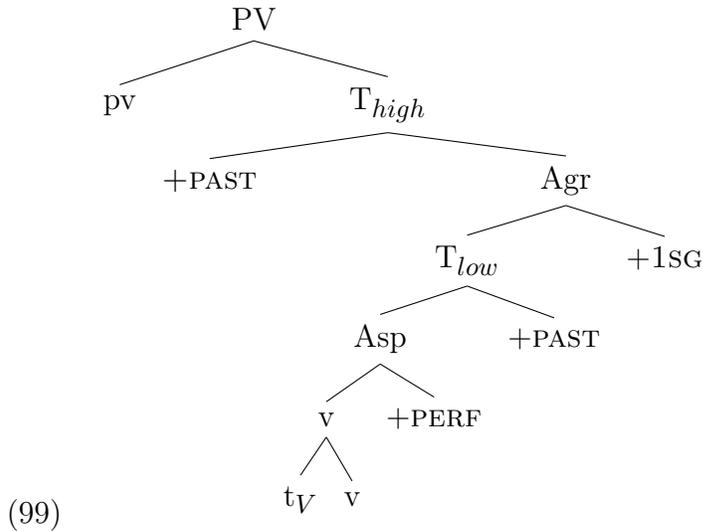
The latter case reminds the case of German particle verbs where the particle can be separated from the verb or be part of the verbal complex. When it is part of the verbal complex, the augment appears to the left of the verb root and preceded by the particle, as in (100a). This is not a first position restriction, since the verb particle can be separated from the verb allowing *ge-* to be word-initial (100b).

(100)   a. Sie hat ihn nicht rangelassen /*ranlassen
            she has him not   at.it.let
            'She didn't let him touch her/him/it or

            She didn't let him get at her/him/it.'   (Müller 2002: 263)

        b. An   haben wir damit   gefangen, daß...
            PART(on) have   we there.with caught   that
            'We got started on this by talking about...'   (Müller 2002: 277)

However, this is not the case with every particle in German, possibly suggesting a different syntax for these cases that do not allow the particle to be separated from the verb[17] (see Nevins 2016 for more arguments on the position of *ge-*).

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17. Müller (2002) provides many examples were the separation of the particle from the verb does not appear to be a matter of syntax as different semantic specifications also play a role.

(101) a. eintrat   der Studienrat
           in.stepped the teacher
           'The teacher came in.'

        b. * Ein war der Studienrat getreten.
            in   was the teacher   stepped
           Intended: 'The teacher had entered.'   (Müller 2002: 278)

In a similar way to the German particles that act as free morphemes, the preverbs that allow the double augment can also be used as free morphemes in a clause.

(102) a. E_1- kal- <u>o</u>- (e_2-) psi- -s   -a   to.
           PAST good CM PAST cook PERF PAST it
           'I cooked it well.'

        b. E-   psisa to kala.
           PAST cook it well
           'I cooked it well.'

(103) a. E_1- ksí- (*e_2-) va- -ps   -a   to.
           PAST de   PAST color PERF PAST it
           'I decolored it.'

        b. * E-   va- -ps   -a   to ksi.
            PAST color PERF PAST it de
           (Intended.'I decolored it.')

This suggests that even if the *kal-* type of preverbs can surface as part of a verbal complex with the root, their underlying syntax should allow for the separation of the preverb from a verbal complex in the way argued above. The distribution of the augment in verbal complexes acts as a diagnostic on the status of the preverb with regard to its syntactic position in the structure. In this way, these cases do not affect the previous conclusions about the morphosyntactic behavior of the augment in Cypriot Greek.

Following Arregi and Nevins (2012) (also Arregi 2015), morphological Metathesis and Doubling are ordering rules of Generalized Reduplication that apply to the output of Linearization in the postsyntactic component. Generalized Reduplication is defined in Harris and Halle (2005) as:

"reduplication is a process of word formation whereby a designated contiguous subsequence of elements in a base form is repeated, that is, appears twice in its entirety ("full reduplication") or in part ("partial reduplication") in a derived form" and it is believed that "not only phonological segments but syntactic and morphological elements as well can be both triggers and targets of reduplication" (Harris and Halle 2005 :198).

Doubling (copying) and Metathesis (displacement) of linear sequences are operations that change the linear order of particular morphemes to satisfy certain constraints and they take place in the Linear Operations module before Vocabulary Insertion (VI), as shown in the diagram below.
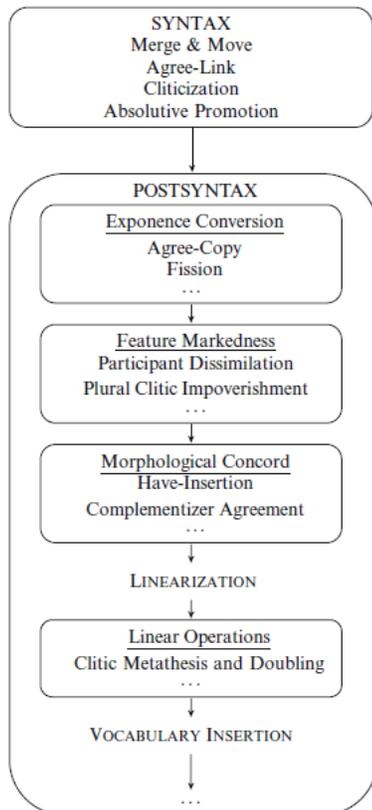
(104)

Here I argue that the distribution of the augment in verbal complexes involves both doubling and metathesis and supports the idea that these are operations taking place before VI. A well-known example for the reduplication facts is the case of the Spanish double exponents *n-*, which mark the plural.

(105) a. Venda -∅   -lo.
           sell   IMP.2.SG CL.ACC.M.SG
           'Sell(Sg) it (imperative).'

       b. Venda -n   -lo.
           sell   IMPR.2.PL CL.ACC.M.SG
           'Sell (Pl) it.'   (Arregi and Nevins 2012: 244)

The plural inflectional exponent *-n* can also appear to the right of the postverbal clitic (106a) or appear twice, as in (106b).

(106) a. Venda -lo -n.

       b. Venda -n -lo -n.   (Harris and Halle 2005: 196)

The formalism in Arregi and Nevins (2012) encodes Doubling (Partial Reduplication) and Metathesis (Local Dislocation) with the presence or absence of certain symbols that mark the changes to take place. These processes take place after Linearization and before Vocabulary Insertion, applying to abstract terminal nodes as opposed to phonological elements. The use of '⟩' marks deletion before the first copy and use of '⟨' deletion after the second copy and use of '[[ ]]' marks the subsequence that undergoes these changes. Examples from abstract linearized sequences, where these symbols are used, are given below:

(107)   a. ABCD → A[[B⟩C]]D → A-BC-BC-D → A-C-BC-D

(Leftward Doubling (Copying): Delete before ⟩ in 1st copy.)

b. ABCD → A[[B⟨C]]D → A-BC-B~~C~~-D → A-BC-B-D

(Rightward Doubling (Copying): Delete after ⟨ in 2nd copy.)

c. ABCD → A[[B⟩⟨C]]D → A-B~~C~~-B~~C~~-D → ACBD

(*Metathesis (Displacement)*: Delete the leftmost part of the first copy and the rightmost part of the second copy.)

In a similar manner, the two cases observed with the linear positioning of the augment in verbal complexes are cases of Metathesis and Dislocation. In Doubling, the e_2- surfaces to the left of the verb stem and the e_1- surfaces to the left of the verb root.

(108)   E$_1$- ksana- (e$_2$-) psi   -s   -a   to.
        PAST again   PAST cook PERF NONPAST.1SG it
        'I cooked it again.'

The double appearance of *e-* is a result of doubling, a post-syntactic operation of copying. The rule for Doubling of the Cypriot Greek Past Tense augment in compounds is the following:

(109)   a. Structural description: Y e$_{past}$ X

b. Structural change:

i. Insert [[to the immediate left of Y, and]] to the immediate right of e$_{past}$.

ii. Insert ⟩ to the immediate left of e$_{past}$.

In the application of this rule, the special symbols will mark the subsequences to be copied and then deleted producing the surface linear order. The linear representation with the morphemes is given in (110), which corresponds to the exponents in (111).

(110)　a.　ADV T$_{+\text{PAST}}$ √V Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR →

　　　b.　[[ADV T$_{+\text{PAST}}$]] √V Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR →

　　　c.　[[ADV ⟩ T$_{+\text{PAST}}$]] √V Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR →

　　　d.　ADV T$_{+\text{PAST}}$ ADV T$_{+\text{PAST}}$ √V Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR →

　　　e.　~~ADV~~ T$_{+\text{PAST}}$ ADV T$_{+\text{PAST}}$ √V Asp$_{\text{PRF}}$ T$_{+\text{PAST}}$ AGR →

　　　f.　T$_{+\text{PAST}}$ ADV T$_{+\text{PAST}}$ √V Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR

(111)　ksana- e$_2$- psi -s -a →

　　　[[ksana- e$_2$-]] psi -s -a →

　　　[[ksana- ⟩ e$_2$-]] psi -s -a →

　　　ksana- e- ksana- e$_2$- psi -s -a →

　　　~~ksana-~~ e- ksana- e$_2$- psi -s -a →

　　　e$_1$- ksana- e$_2$- psi -s -a →

　　　eksanaépsisa

The other case discussed here is when the augment closer to the root is omitted, but the augment to the immediate left of the preverb is not. When the *e-* only appears to the left of the preverb, then it is a case of Metathesis (Displacement), following the rule defined below.

(112)　a.　Structural description: Y e$_{past}$ X

　　　b.　Structural change:

　　　　　i.　Insert [[to the immediate left of Y, and]] to the immediate right of e$_{past}$.

　　　　　ii.　Insert ⟩⟨ to the immediate left of e$_{past}$.

With the application of the rule, insertion of the appropriate symbols will mark the subsequence targeted for copying and deletion producing the surface order of *eksanapsisa* 'I cooked again'.

(113) a. ADV T$_{+\text{PAST}}$ $\sqrt{V}$ Asp$_{+\text{PRF}}$ T$_{+\text{PAST}}$ AGR $\rightarrow$

     b. [[ADV$\rangle\langle$T$_{+\text{PAST}}$]] $\sqrt{V}$ Asp$_{\text{PRF}}$ T$_{+\text{PAST}}$ AGR $\rightarrow$

     c. T$_{+\text{PAST}}$ ADV $\sqrt{V}$ Asp$_{\text{PRF}}$ T$_{+\text{PAST}}$ AGR

(114) ksana- $\underline{e_2}$- psi- -s -a $\rightarrow$

     [[ksana- $\underline{e_2}$]]- psi- -s -a $\rightarrow$

     [[ksana-$\rangle\langle\underline{e_2}$]]- psi- -s -a $\rightarrow$

     ksana- e- ksana- e- psi- -s -a $\rightarrow$

     ~~ksana~~ e- ksana- ~~e~~- psi- -s -a $\rightarrow$

     e_1- ksana- psi- -s -a $\rightarrow$

     eksanapsisa

Doubling and Metathesis phenomena reorder particular subsequences that result from Linearization before Vocabulary Insertion. It is therefore predicted that any VI rules that are subject to a particular phonological context will not be affected by these ordering changes. This is exactly the case with the irregular augment *i-*, which appears with certain verbs in the position where *e-* would normally appear. Merchant (2015) notes that these verbs in Standard Modern Greek conditioned by perfect aspect show the irregular form (Holton et al. 1997). Some of these verbs are *θelo > i-θela* 'want', *ksero>i-ksera* 'to know', *pino>i-pja* 'to drink', *vlepo>i-ða*, *leo>i-pa* (Merchant 2015: 277). Verbs that show the irregular *i-*, instead of *e-* in Cypriot Greek, are given in Table 7.

The irregular augment is only conditioned by the root, and not the suffixes that follow.

(115) [+PAST]$\rightarrow$i/___$\sqrt{see}$, $\sqrt{drink}$, $\sqrt{say}$, $\sqrt{come}$, $\sqrt{want}$, $\sqrt{know}$

As predicted, when the verbs with the irregular *i-* appear in compounds similar to those discussed before, the irregular augment only appears to the immediate left of the root, but not the immediate left of the preverb.

(116) a. E-   psil- $\underline{o}$- (i-) pkj -a   to.
           PAST little CM PAST drink PAST it

NON-PAST, PERF	Regular	Irregular	Meaning
θor-	-	í-ð-a	'I saw'
pín-	-	í-pkj-a	'I drank'
lal-	-	í-p-a	'I said'
érk-	-	í-rt-a	'I came'
θél-	é-θel-a	í-θel-a	'I wanted'
ksér-	é-kser-a	í-kser-a	'I knew'

Table 2.39: Verbs with the irregular augment *i-*

'I drank some of it.'

b. E-   mis- o̲- (i̲-)   pkj   -a   to.
   PAST half CM PAST drink PAST it
   'I drank half of it.'

c. E-   ksana̲- (i̲-)   pkj   -a   to.
   PAST again   PAST drink PAST it
   'I drank it again.'

For verbs that show the regular e_2 and the irregular *i-*, both options are available.

(117)   a. E$_1$- psil- o̲- ($\{$e̲$_2$,i̲$_2\}$-) θel -a   to.
            PAST little CM PAST   want PAST it
            'I wanted it a bit.'

        b. E$_1$- poll- o̲- ($\{$e̲$_2$,i̲$_2\}$-) θel -a   to.
            PAST much CM PAST   want PAST it
            'I wanted it a lot.'

        c. E$_1$- ksana̲- ($\{$e̲$_2$,i̲$_2\}$-) θel- -a   to.
            PAST again   PAST   want PAST it
            'I wanted it again.'

The full list[18] is given below with *ksana* 'again' (with the exception of 'to know', where

psilo- is used instead), along with verbal complexes formed with nouns and verbs.

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18. In some cases, the Standard Modern Greek verb is used for certain compounds instead of the Cypriot Greek verb, although this does not appear to be a case of code-switching since the Cypriot Greek verb is not an option at all: *para-vlép-o> e-para̲-(e̲-)vle-ps-a* 'to overlook' (instead of **para-θor-ó> para̲-i̲-ð-a* (int.'to overlook')), *para-lé-o > para̲-i̲-p-a* 'to exaggerate' (instead of **para-lal-ó>para̲-ip-a*). In addition,

NON-PAST, PERF	PAST,PERF	PAST,PERF, (+ irreg.)	Meaning
ksana-θor-ó	-	e-ksan<u>a</u>-(<u>i</u>-)ð-a	'to see again'
ksana-pín-o	-	e-ksan<u>a</u>-(<u>i</u>-)pkj-a	'to drink again'
ksana-lal-ó	-	e-ksan<u>a</u>-(<u>i</u>-)p-a	'to say again'
ksana-(é)rk-ume	-	e-ksan<u>a</u>-(<u>i</u>-)rt-a	'to come again'
ksana-θél-o	e-ksan<u>a</u>-(<u>e</u>-)θel-a	e-ksan<u>a</u>-(<u>i</u>-)θel-a	'to want again'
psilo-ksér-o	e-psil<u>o</u>-(<u>e</u>-)kser-a	e-psil<u>o</u>-(<u>i</u>-)kser-a	'to know a little'
kuts-o-pín-o	-	e$_1$-kuts-o-í$_2$-pkj-a	'to drink very little'
kras-o-pín-o	-	e$_1$-kras-o-í$_2$-pkj-a	'to drink wine'
ɣlik-o-θor-ó	-	e$_1$- ɣlik-o-í$_2$-ð-a	'to have a sweet gaze'
kamm-o-θor-ó	-	e$_1$-kamm-o-í$_2$-ð-a	'not being able to see well'

Table 2.40: Verbal complexes with irregular i-

Given the table above, it is not surprising that the irregular i- does not appear to the immediate left of the adverb.

(118) a. * I$_1$-   ksan<u>a</u>- ({<u>e$_2$</u>,<u>i$_2$</u>}-) θel   -a   to.
              PAST again   PAST   want PAST it
           'I wanted it again.'

       b. * I$_1$-   ksan<u>a</u>- (<u>i$_2$</u>-) pkj   -a   to.
              PAST again   PAST drink PAST it
           'I drank it again.'

       c. * I$_1$-   psil<u>o</u>- (<u>i$_2$</u>-) kser -a   to.
              PAST little PAST know PAST it
           'I knew it a little.'

As expected by the theory adopted here and the irregular augment VI rule, copying of the augment that marks the past takes place before VI. As a result, the augment is copied in the first position, before (115) applies.

Following the same reasoning, copying of the augment takes place before any specific

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some verbal complexes with suppletive verbs do not use the suppletive or irregular stems (Merchant 2015): *θkja-lé-o > e-θkjá-le-ks-a* 'to choose' (instead of **e-θkj<u>a</u>-<u>i</u>-p-a*) , *ek-lé-ɣ-o > ék-(*e)-le-ks-a* 'to elect' (instead of **ek-i-p-a*). Others show the *e$_2$-* as in *epi-lé-ɣ-o > ep-é-le-ks-a* 'to choose' (instead of **epi-i-p-a*), *epi-vlé-p-o > ep-é-vle-ps-a* 'to supervise' (instead of **epi-i-ð-a*), *pro-vlé-p-o > e-pr<u>o</u>-(<u>e</u>)-vle-ps-a* 'to predict' (instead of **pro-i-ð-a*).

rules that disallow the appearance of the augment as in the case of vowel-initial roots.

(119) e-   ksana- (*e)- aɣapi -s   -e   -s.
       PAST again   PAST love   ASP PAST AGR
       'I loved again.'

The appearance of the augment in the first position, even if its appearance adjacent to the root is not allowed, is precisely the reason we must conclude that copying takes place before VI. When VI takes place, *e-* appears in the first position as expected, but the VI rule repeated in (120) will only insert a null exponent when there is no consonant-initial root like in *aɣap-*.

(120)   a. T[+PAST] →e/__C

         b. T→∅

The main advantages of using the Generalized Reduplcation formalism for Doubling and Metathesis as discussed in Arregi and Nevins (2012) are that first it provides a unified way to explain the variation in the linear order of verbal complexes as discussed here and second, shows the dialectal variation as observed between two proximal varieties, Cypriot Greek and Standard Modern Greek. In this framework, variation in the grammatical model is identified at a particular stage of the derivation and more specifically one that does not simply correspond to the surface form, but the underlying structure of it.

In contrast to the Cypriot Greek data presented here, Standard Modern Greek does not show Doubling or Metathesis. It only allows the augment to the immediate left of the two-syllable stems and the left of the root in a verbal complex for the purpose of holding the stress[19].

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(121)   a. To (*e-) psil- o- (é-) psi -s -a.
          it PAST little CM PAST cook PERF PAST.1SG
          'I barely cooked it.'

       b. To (*e-) para- (é-) psi -s -a.
          it PAST over PAST cook PERF PAST.1SG
          'I overcooked it.'

       c. To (*e-) ksana- (é-) psi -s -a.
          it PAST again PAST cook PERF PAST.1SG
          'I cooked it again.'   [Standard Modern Greek]

The same applies for verbal complexes with nouns and verbs and those with the irregular augment, which also surfaces to the immediate left of the root.

(122)   a. avɣó- (e-) kop -s -a.
          egg   PAST cut PERF PAST.1SG
          'I beat the egg.'

       b. Anavó- (e)- svi   -s   -e.
          turn.on PAST turn.off PERF PAST.3SG
          'It flickered.'

       c. kraso- í- pj   -a.
          wine   PAST drink PAST.1SG
          'I drank wine.'   [Standard Modern Greek]

As predicted by the Trisyllabic stress rule that restricts the stress from shifting higher than the antepenultimate syllable, and the fact that the Standard Modern Greek augment only surfaces to hold the stress, it is not surprising that the augment does not appear when the verbal root plus endings already contains three or more syllables.

(123)   a. ɣlik- o- (*e-) kítak -s -a.
          sweet CM PAST look PERF PAST.1SG
          'I had a sweet gaze.'

       b. strif- o- (*e-) ɣíri -s -a.
          twirl CM PAST turn PERF PAST.1SG
          'I twirled.'

c. kont- o- (*e-) stá -θ   -ik   -a.
   close CM PAST stand NONACT PERF PAST.1SG
   'I took a pause from walking.'

Standard Modern Greek and Cypriot Greek are similar to a great extent in the structure of the verb's morphology, but the morphological operations of Doubling and Metathesis appear only in the latter. To the extent that the post-syntactic mechanism adopted here is morphological and not syntactic, it provides a locus of variation in the grammatical model that informs our understanding of these phenomena.

More than one exponent of the rules given above can be present in languages that allow them. Arregi (2015) argues that Metathesis (Displacement) and Doubling (Copying) apply cyclically to account for the following cases of the *-n* exponence. Spanish allows *-n* to surface in all the different combinations presented below, pointing out the fact that these rules can apply more than once in a cyclic fashion.

(124) a. vénda-me-n-lo

       b. vénda-me -lo-n

       c. vénda-me-n-lo-n

       d. vénda-n-me-n-lo

       e. vénda-n-me -lo-n

       f. vénda-n-me-n-lo-n

In a similar manner, the following examples from Cypriot Greek show multiple exponents of the augment *e-*, suggesting successive cyclic application of displacement and copying.

(125) a. **e-**   ksana- para- psi -s   -e   -s   to.
          PAST again over cook PERF PAST AGR it.
          'You overcooked it again.'   [Displacement, Displacement]

       b. **e-**   ksana- **e-**   para- psi -s   -e   -s   to.
          PAST again PAST over cook PERF PAST -AGR it.
                                                          [Copying, Displacement]

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c. **e-** ksana- para- **e-** psi -s -e -s to.
PAST again over PAST cook PERF PAST AGR it.

<div align="right">[Displacement, Copying]</div>

d. **e-** ksana- **e-** para- **e-** psi -s -e -s to.
PAST again PAST over PAST cook PERF PAST AGR it.

<div align="right">[Copying, Copying]</div>

e. * ksana- **e-** para- **e-** psi -s -e -s to.
again PAST over PAST cook PERF PAST AGR it.

The application of Displacement and Copying are repair strategies that can apply cyclically to satisfy the requirement of the augment to appear in the first position in a verbal complex. In this sense, the augment in Cypriot Greek appears as a category with a leftmost edge-related constraint of the word internal domain, suggesting that other morphological phenomena could potentially show a similar constraint. These post-syntactic changes follow an *Initiality* constraint:

(126) Initiality constraint: Pronounce +PAST at the leftmost edge.

I analyze examples of verbal complexes with multiple exponence of *e-* as cases of post-syntactic copying and displacement, which are operations related to the morphological component (post-syntax) that take place after Linearization and before Vocabulary Insertion. These repairs follow an *Initiality* constraint in verbal complexes, where the augment always surfaces word-initially. The post-syntactic mechanism of Generalized Reduplication (Arregi and Nevins to appear) can be extended to the placement of augments and give an analysis characterized by grammatical constraints, and not mere optionality.

2.2.7   Agreement

Agreement suffixes, as defined here, realize person and number. Agreement features are generally not conditioned by any other morphosyntactic feature or morpho-phonological form with the exception of the imperfective of the nonactive form, and the past/nonpast -a/-o in the 1st person singular.

NONPAST.PERF	PAST.PERF	NONPAST.IMPERF	PAST.IMPERF
	ACTIVE	VOICE	
-o	-a	-o	-a
-s	-s	-s	-s
-∅	∅	∅	∅
-men	-men	-men	-men
-te	-te	-te	-te
-sin/n	-sin/n	-sin/n	-sin/n

Table 2.41: Agreement suffixes

NONPAST.PERF	PAST.PERF	NONPAST.IMPERF	PAST.IMPERF
	NONACTIVE	VOICE	
-o	-a	-me	-mun
-s	-s	-se	-sun
-∅	∅	-te	-tun
-men	-men	-maste	-mastan
-te	-te	-saste/-ste	-saste/-sastan
-sin/n	-sin/n	-nde	-ndan

Table 2.42: Agreement suffixes

One interesting question is exactly this alternation between nonactive agreement and active agreement morphology depending on imperfective aspect. As also seen in the examples below, in the imperfective form the agreement suffix is specific to mediopassive voice, while in the perfective form, the same agreement suffixes that are used in active voice appear.

(127)   a. Eɣo pli   -n -isk -u   -me.
            I   wash v IMP NONPAST 1SG
            'I wash myself.'

        b. Eɣo e-   pli -n -isk -u   -mun.
            I   PAST wash v IMP PAST 1SG
            'I was washing myself.'

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c. Eɣo e-   pli -θ   -ik -a.
   I   PAST WASH NONACT PERF 1SG
   'I washed myself.'

d. * Eɣo e-   pli -θ   -ik -u   -me.
     I   PAST wash NONACT PERF PAST 1SG
   (Int. 'I washed myself'.)

e. Eɣo en na pli -θ   -o.
   I   be to wash NONACT 1SG
   'I will wash myself.'

f. * Eɣo en na pli -θ   -u   -me.
     I   be to wash NONACT PAST 1SG
   'I will wash myself.'

The morphological marking of Active and NonActive voice in Standard Modern Greek has been associated with changes in argument structure. Roussou (2009) argues that the inflectional suffix conditioned by imperfective aspect, typically analyzed as a portmanteau morpheme marking number and person, marks a thematic relation in mediopassives with the direct object in Standard Modern Greek. That is, the direct object which serves as the syntactic subject is an internal argument of the verb in the following cases (128). The Active voice agreement suffix, on the other hand, can be asssociated with any argument, such as external, internal and expletive subjects (Roussou 2009).

(128) a. Ta pedja   plenonde.
          the children wash.NONACT.3PL
          'The children are being washed.'

       b. I   zaxari kejete.
          the sugar burn.NONACT.3SG
          'The sugar is being burnt.'

This 'object-for-subject' thematic sensitivity that targets the association of a verbal morpheme with the verb argument fails with the following cases in Cypriot Greek. Cypriot Greek allows genitive or accusative, or both, with particular verbs. Setting aside the question of case assignment for now, the following examples that show mediopassive (a.k.a.

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non-active) morphology is followed by a direct object in genitive case. These verbs do not have forms in Active voice, they are deponent verbs (see Zombolou and Alexiadou (2012) for a discussion on Standard Modern Greek).

(129) a. Kronete   tis   Marias.
           listen.NONACT.IMPERF.3SG.NONPAST the.GEN Maria.GEN
           'She takes Maria's advice.

       b. Klonete   tu   Yanni.
           flirt.NONACT.IMPERF.3SG.NONPAST the.GEN Yanni.GEN
           'She flirts with Yannis.'

       c. * Kroni tis Marias
             listen to Maria
           (Int. 'She takes Maria's advice.')

       d. * Kloni tu Yanni
             flirt   the John
           (Int. 'She flirts with John.')

Psych verbs also have mediopassive morphology in the presence of an object with accusative case.

(130) a. Varkume   se.
           be.bored.1SG you.ACC
           'I am bored of you.'

       b. Foume   se.
           be.fear.1SG you.ACC
           'I am afraid of you.'

       c. Lipume   se.
           be.sorry.1SG you.ACC
           'I feel sorry for you.'

       d. ʃerume   se.
           be-happy.1SG you.ACC
           'I am happy for you.'

In these cases, a system that defines agreement suffixes conditioned by nonactive voice to promote an internal argument to the subject position cannot work since they can appear with an internal argument in their argument structure. This also applies for Standard Modern Greek with deponent verbs like *erhome* below:

(131) I   Maria ðexete   tin protasi.
       the Maria accept.NONACT.IMPERF.3SG the proposal
       'Maria accepts the proposal.'

In perfective aspect, the mediopassive is expressed with -θ, but agreement morphology remains active. In Roussou (2009), -θ expresses the internal argument, while the agreement specified for active morphology lexicalizes an EPP slot. The split between the morphosyntactic realization of the mediopassive is conditioned by aspect. This approach basically argues that particular inflection (i.e. mediopassive) is the morphological realization of intransitivity in the syntactic structure, while -θ is the morphological counterpart of an object clitic that signals the presence of transitive morphosyntax. Mediopassive and -θ cannot co-occur if they are associated with different environments, one that predicts transitivity and another that does not. Therefore, forms like *pliθikume* are not possible.

In Cypriot Greek, the syntactic object remains present in the structure in the perfective form. The -θ surfaces as *-t* (for phonological reasons, such as after a continuant (see Merchant 2015 for more examples or alternatively, see earlier discussions here).

(132) a. En na klosti tu Yanni.
          be to flirt   the John
          'She will flirt with John.'

       b. En na krosti   tis Marias.
          be to listen.ACT.PERF.3SG to Maria
          'She will take Marias advice.

Roussou (2009) argues that the underlying structures that distinguish the active form *plen-o* 'wash' from the mediopassive *plen-ome* 'wash myself' are the following:

(133)   a.

$$\begin{array}{c} \text{I} \\ \diagup\diagdown \\ \text{plen} \quad \text{o}_x \end{array}$$

b.

$$\begin{array}{c} \text{I} \\ \diagup\diagdown \\ \text{plen} \quad \text{(o)me}_{(y)} \end{array}$$

As she explains the difference lies on the 'association' of the agreement suffix with either the external or the internal argument:

> "If active inflection realizes the EPP argument (slot), then in a transitive predicate like *pleno* 'wash', the D morpheme becomes associated with the external argument x. The internal argument y, on the other hand, is realized at the syntactic level either as a full DP or an object (accusative) clitic (e.g. *ton pleno* 'I wash him'). With this particular verb, the internal argument, may also remain unassigned, receiving the interpretation of an implicit argument. The mediopassive inflection, on the other hand, associates with the internal argument y, leaving the external one x unassigned. The latter essentially remains a free variable."   (Roussou 2009:415)

By assuming that the verb's structure only involves terminal nodes with phonological exponence, this posits no structural difference in active vs. nonactive forms. Ellipsis facts show that a Voice head external to the ellipsis site can explain the distribution of voice mismatches (Merchant 2013; 2001 for discussion). As shown in Merchant (2013), Greek disallows voice mismatches under sluicing, and so does Cypriot Greek:

(134)   a. * O   Yannis eskotoθike,   alla en   iksero pcos.
            the Yannis kill.NONACT.PERF.3SG, but NEG know who.NOM
            [Lit. 'Yannis was killed, but I don't know who.']

   b. O   Yannis eskotoθiken,   alla en   iksero pcos   ton
       the Yannis kill.NONACT.PERF.3SG, but NEG know who.NOM CLI.ACC
       eskotosen.
       kill.ACT.PERF.3SG
       'Yannis was killed, but I don't know who killed him.'

The Voice head, sometimes realized with an exponent, must not be included in the target of the ellipsis for mismatches to be allowed (Merchant 2013). In (134a), what is elided is a clausal node that contains the VoiceP and the elided structure which is subject to the identity constraint rules out Voice mismatches. Voice mismatches are allowed in nonelliptical cases, as in (134b), where the VoiceP is defined as nonactive in the first clause and active in the second clause and the identity constraint is not in any way involved. English allows voice mismatches provided that the head bearing the syntactic feature that determines the voice morphology on the verb is external to the verbal projection in the ellipsis site. The assumption of a VoiceP should not rely on phonological exponence, but presence of particular syntactic features, such as Active and NonActive Voice.

Here I will not assume a change in the argument structure as transitive or intransitive, but the existence of morphosyntactic features on the verbal structure that condition the appearance of particular exponents. In this approach, $-\theta$ is only conditioned by the perfective $-ik$, as in Merchant (2015); the absence of $-ik$ in the imperfective form results in the surface of a $-\emptyset$ exponent. The choice between the mediopassive and active agreement suffix is a matter of contextual allomorphy, as also pointed out in Merchant (2015); sensitive to aspect, the agreement terminal node will be realized with mediopassive when the aspect is imperfective and the elsewhere morphemes are the realization of that node when the aspect is perfective.

(135)   a. Voice[-Act] $\rightarrow$ -θ/ ____ Aspect[+perf]

b. Aspect[+perf] $\rightarrow$ -ik/Voice[-act] ____ T[+past]   (Merchant 2015:279)

In this view, the morphology on the verb is the realization of particular morphosyntactic environments involved and does not necessarily relate to the argument structure or the presence and absence of an internal argument. This explains the cases where verbs with NonActive morphology have an overt internal argument and builds on the argument that a Voice projection is present in the verbal structure.

The alternation between 1ST PERSON SINGULAR *-mun* in past imperfective and *-me* in nonpast imperfective should also be discussed here. In the current work, I pursue an analysis of tense and agreement morphemes as separate projections, instead of the two forming a fused terminal node and a portmanteau morpheme (as in Spyropoulos and Revithiadou 2009; Joseph and Smirniotopoulos 1993, among others). The different exponence of the agreement morphemes suggests that both the Aspect and the Tense heads are involved in the conditioning environment. In both cases, *-u* is the realization of tense, both nonpast and past. Tense has to be in the conditioning environment of the agreement suffix exponence, otherwise it would be acceptable to use either *-me* or *-mun* for any tense given that aspect is imperfective in both.

(136) a. Pli   -n -isk -u   -me
          wash v IMP NONPAST 1SG
          'I wash myself.'

       b. E-   pli   -n -isk -u   -mun
          PAST wash v IMP PAST 1SG
          'I was washing myself.'

In imperfective aspect, the only difference that defines the allomorphy seen in *-me* and *-mun* for 1SG PERSON SINGULAR is the morphosyntactic feature off the tense as +/- PAST, which happens to be syncretic and realized as *-u*.

(137) a. Agr[+1sg] → -me/Asp[-perf] T[-past] ___

       b. Agr[+1sg] → -mun/Asp[-perf] T[+past] ___

Aspect is part of the conditioning environment for the insertion of *-me* and *-mun* since forms that use the perfective aspect in either past or nonpast tense do not allow these morphemes.

(138) a. Eɣo en na pli   -θ   -∅   -o
          I   be to wash NONACT PERF 1SG
          'I will wash myself.'

b. * Eɣo en na pli -θ -∅ -u -me.
   I   be to wash NONACT PERF NONPAST 1SG
   (Int. I will wash myself')

c. Ego e- pli -θ -ik -a.
   I   PAST wash NONACT PERF 1SG
   'I washed myself.'

d. * Ego e- pli -θ -ik -u -me
   I   PAST wash NONACT PERF PAST 1SG
   (Int. 'I washed myself')

To summarize, this section proposes an analysis based on the contextual conditioning environment for the allomorphy observed in some of the agreement suffixes in Cypriot Greek.

2.3   Adjectival Participles

Previous work on past participles in English, namely adjectival and verbal passives, focuses on their different distribution that relies on the idea that the former are in the lexicon while the latter are formed in the syntax (Bruening 2014). He identifies some properties of adjectival passives as not including applied arguments, while verbal passives do, and adjectival passives cannot be built from unaccusative verb bases, but verbal passives can. Other work (Embick 2004) distinguishes two types of participles: resultatives and statives (see Kratzer 2000), with the former referring to "a state that is the result of a grammatically represented event, while the latter type is a simple state, much like a simple adjective". Building on Embick's work, Bruening proposes that the first type of participle is building from transitive verbs and has a Voice category that projects the external argument, and the second type is built from unaccusative verbs but the Voice does not project a specifier.

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(139)

```
          VoiceP
         /      \
       NP       Voice
              /      \
         Voice_tr     vP
                    /    \
                   v    RootP
                       /    \
                    Root    NP
```

(140)

```
          VoiceP
         /      \
   Voice_intr    vP
               /    \
              v    RootP
                  /    \
               Root    NP
```
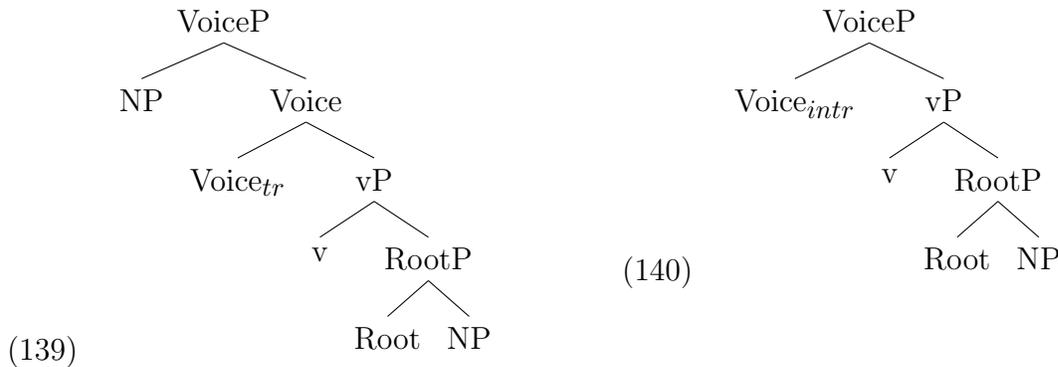
The idea behind Voice being present in both structures is that all verb phrases are built from a root, a verbalizing head v, and a functional head Voice that is involved in case assignment and agreement. Last, adjectival passives are derived from merging a stativizing adjective head.

(141)

```
           AdjP
          /    \
        Adj    VoiceP
              /      \
            NP       Voice
                   /      \
              Voice_tr     vP
                         /    \
                        v    RootP
                            /    \
                         Root    NP
```

(142)

```
           AdjP
          /    \
        Adj    VoiceP
              /      \
       Voice_intr     vP
                    /    \
                   v    RootP
                       /    \
                    Root    NP
```
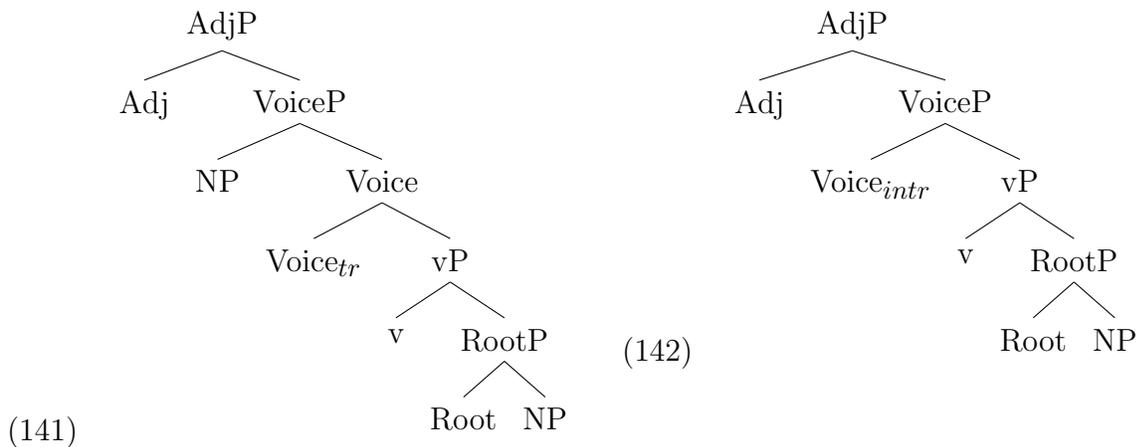
Clearly, adjectival participles involve verbal projections that we have identified as being present in the Cypriot Greek verb morphology. In this section, I examine the distribution of participles to investigate the dependency between particular morphemes that appear in these cases and restrictions on the negative morphemes. The aspectual allomorphs are not only restricted to *-ik* and *-isk* as seen in the verbal structures, but also show other allomorphs, as with the case of adjectival participles. Adjectival participles in Standard Modern Greek can have two suffixes: *-t* and *-men*, although not all verbs allow for both suffixes. The two forms differ in interpretation, as *-t* expresses a state, while *-men* marks

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a resultative structure (Anagnostopoulou 2003; Alexiadou and Anagnostopoulou 2008; Embick 2004).

Verb	*-men*	*-t*	Meaning
vrázo	vras-mén-os	vras-t-ós	'boiled'
psíno	psi-mén-os	psi-t-ós	'grilled'
aníɣo	aniɣ-mén-os	anix-t-ós	'opened'
fuskóno	fusko-mén-os	fusko-t-ós	'inflated'

Table 2.43: Anagnostopoulou 2003: Participles in Modern Greek

Cypriot Greek uses the same suffixes for participles preserving the difference in meaning. The following example illustrates the difference clearly:

(143) a. # To fain en psimenon alla en to epsisen akoma
the food be cook.PART but not it.CLI cook.PAST.PERF.3SG yet
kanenas.
nobody
'The food is cooked, but nobody cooked it yet.'

b. To fain en psiton alla en to epsisen akoma kanenas.
the food be cook.PART but not it.CLI cook.PAST.PERF.3SG yet nobody

Since *-men* denotes a result of the verb event, negating this event results in a contradiction. On the contrary, *-t* expresses a state, so it does not entail the existence of a previous event. Moreover, use of participles with a state verb, such as *become*, allows one form but not the other.

(144) a. To kotopulon eɣiniken tianito.
the chicken become.PAST.PERF.3SG fried.PART
'The chicken became fried.'

b. # To kotopulon eɣiniken tianismeno.
the chicken become.PAST.PERF.3SG fried.PART

(145) a. Tuti i porta ektistiken anixti.
this the door build.PAST.PERF.3SG opened.PART
'This door was built open'

b. * Tuti i   porta ektistiken   animmeni.
   this the door   build.PAST.PERF.3SG opened.PART

The use of *become* with *-men* participles is a contradiction since the participle itself denotes a state from an event, therefore a process of becoming that state. A third test that differentiates between the two is the use of instrumental PPs with *-men*, but not with *-t*.

(146)   a. # To kotopulo en   tianito   me laðin kalo.
           the chicken   be.NONPAST.IMPERF.3SG fried.PART with oil   good
           'The chicken is fried with olive oil.'

       b. To kotopulon en   tianismeno me   laðin kalo.
           the chicken   be.NONPAST.IMPERF.3SG fried.PART with oil   good

Last, *apo*-PPs are found with *-men*, but not *-t* participles.

(147)   a. # To kotopulo en   tianiton   pu tin Maria.
           the chicken   be.NONPAST.IMPERF.3SG fried.PART by the Maria
           'The chicken became fried by Maria.'

       b. To kotopulon en   tianismenon pu tin Maria.
           the chicken   be.NONPAST.IMPERF.3SG fried.PART   by the Maria

Adjectival passives, also known as statives, involve an implied external argument that can be spelled out by a *by*-phrase, suggesting that there is a VoiceP in the structure.

(148)

```
        AdjP
       /    \
     Adj   VoiceP
          /      \
      Voice_tr    vP
                /    \
               v    RootP
                    /   \
                 Root   NP
```
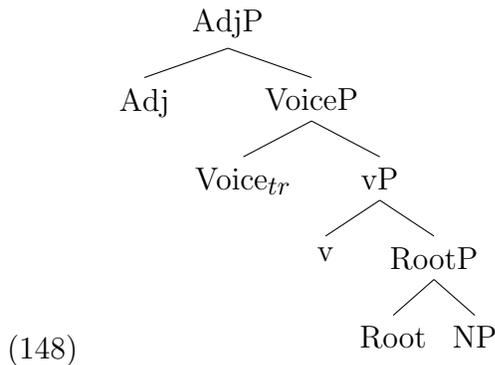
Another difference between the two participles is adverbial modification; *-men* participles allow modification by manner adverbs.

(149)   a.   To prosektika animmeno   ðoro
             the carefully   opened.PART present
             'The present carefully opened'

       b.   * To prosektika anixto   ðoro.
              the carefully   opened.PART present

Cypriot Greek also employs a third suffix, when *-t* is not an option for that adjectival stem; this is invariant to person agreement.

(150)   a.   O   sakkos su   eɣiniken   muʃ-in.
             the jacket   your become.PAST.PERF.3SG wet.PART
             'Your jacket became wet'

       b.   O   sakkos su   en   muʃe-men-os.
             the jacket   your be.NONPAST.IMPERF.3SG wet.PART
             'Your jacket is wet.'

This is found in the environments where a stative is found, namely *become*-verbs and disallows instrumental PPs, *by*-phrases and adverbials.

(151)   a.   To pukamison eɣiniken   muʃin.
             the shirt   become.PAST.PERF.3SG wet.PART
             'The shirt became wet'

       b.   * To pukamison eɣiniken   muʃemenon.
             the shirt   become.PAST.PERF.3SG wet.PART

       c.   * To teja   muʃin   pukamison ekatastrafiken.
             the completely wet.PART shirt   destroy.PAST.PERF.3SG
             'The shirt that is completely wet is destroyed.'

       d.   To teja   muʃemenon pukamison ekatastrafiken.
             the completely wet.PART   shirt   destroy.PAST.PERF.3SG

Another difference in English is that most statives cannot be negated by *un-* (e.g. unopened, *unopen). Negated participles in Standard Modern Greek and Cypriot Greek only allow *-t* compared to their non-negated counterparts.

Instead, the *-men* participles are only negated with lexical negation:

(152)   a.   Ta mi eksipiretumena ðania esvistikan.
             the non payable.PART   loans erase.PAST.PERF.3PL

Participle	Negated participle with *-men*	Negated participle	Meaning
ɣra-mén-os	*a-ɣra-mén-os	á-ɣraf-t-os	'written'
pli-mén-os	*a-pli-mén-os	á-pli-t-os	'washed'
ðjavas-mén-os	*a-ðjavas-mén-os	a-ðjávas-t-os	'read'
faɣo-mén-os	*a-faɣo-mén-os	a-fáɣo-t-os	'eaten'

Table 2.44: Anagnostopoulou 2003: Negated Participles

'Loans that could not be paid were erased.'

b. Ta mi maɣiremena faya epetaxtikan.
the not cooked.PART food tossed.PAST.PERF.3PL
'The foot not cooked was tossed.'

Mi and *a-* are in complementary distribution and can never co-occur.

(153) a. Ta amairefta   faya epetaxtikan.
the uncooked.PART food tossed.PAST.PERF.3PL

b. * Ta mi amairefta   faya epetaxtikan.
the not uncooked.PART food tossed.PAST.PERF.3PL
'The food not cooked was tossed.'

c. * Ta a- mi mairefta   faya epetaxtikan.
the not not cooked.PART food tossed.PAST.PERF.3PL
'The food not cooked was tossed.'

In suppletive verbs, both the suppletive and the non-suppletive forms are possible with *-men*, even though there is a small difference in meaning. For example, *ipomena* means 'what is said', while *leɣomena* means 'the aforementioned'. In all cases of *-men* participles, the suppletive form is the unmarked one. Negation with *-t* only allows the suppletive form of the verb in the three verbs in Greek that show suppletion.

These cases then suggest that *-t* triggers suppletion of the stem in ways that *-men* does not. In their analysis of participles in Greek, Alexiadou and Anagnostopoulou (2008) argue that *-t* is a realization of ASP that is adjacent to the root. The case of *-men* is different as they argue for the existence of a *v* that merges with the root. The

Verb	Suppletive+-*men*	Nonsuppletive+-*men*	Neg + -*men*	-*t*	Neg + -*t*	Meaning
le-	ipomena	leɣomena	*anipomena	*ipota	anipota	'said'
θor-	iðomena	vlepomena	*aniðomena	*iðota	aniðota	'seen'
tro-	faimena	troɣomena	*afaimena	*faita	afaita	'eaten'

Table 2.45: Participles of suppletive verbs in Cypriot Greek

different structures are shown below (see also discussion in Embick 2004 on eventivity and agentivity of the Aspect head):

(154)   a.   b.
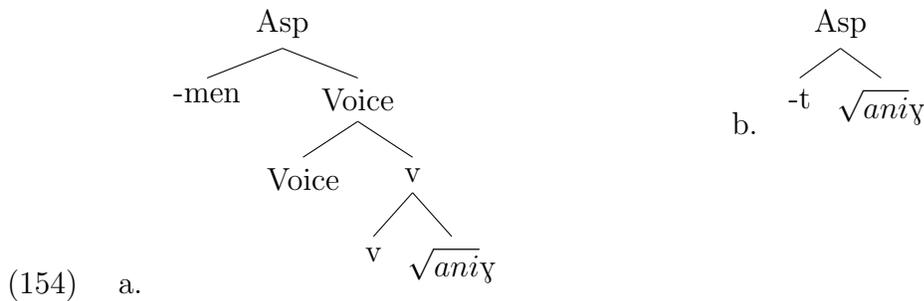
If aspect is adjacent to a categoryless root, then allomorphy can easily result in suppletion. The optionality through between the suppletive and the nonsuppletive stem with -*men* suggests that these representations are not enough to capture the differences observed. With the assumption that -*men* is the exponent of aspect, we would need to assume that perfective and imperfective aspect show syncretism given that the suppletive verb stem marks the former and the nonsuppletive the latter. A difference in meaning can be tested with adverbials like *kinos* 'as accustomed', which can modify the non-suppletive stem only.

(155)   a. ɣnorizi ta kinos   leɣomena.
            know   the commonly said.PART
            'He knows the things commonly said.'

        b. * ɣnorizi ta kinos   ipomena.
              know   the commonly said.PART

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In the example above, *legomena* has the meaning *known*, whereas *ipomena* keeps the meaning *said*. Since *kinos* describes an ongoing action, it creates a contradiction when modifying a stative.

The case of allomorphy observed here is not only between *-men* and *-t*, when marking perfective aspect, but also between the different negative suffixes examined so far. The most straightforward representation is one where the two negators take scope over the entire participle. Shifting from the structure in Alexiadou and Anagnostopoulou (2008), I propose that there is an Adj head that selects Agr following Bruening (2014).

(156)   a.

```
            Neg
          /     \
        mi      AdjP
               /    \
            ADJ     Agr
                   /    \
                 -a     AspP
                       /    \
                    -men    vP
                           /   \
                          v    √vras
```

b.

```
            Neg
          /     \
         a-     AdjP
               /    \
            ADJ     Agr
                   /    \
                 -a     Asp
                       /    \
                     -t    √vras
```
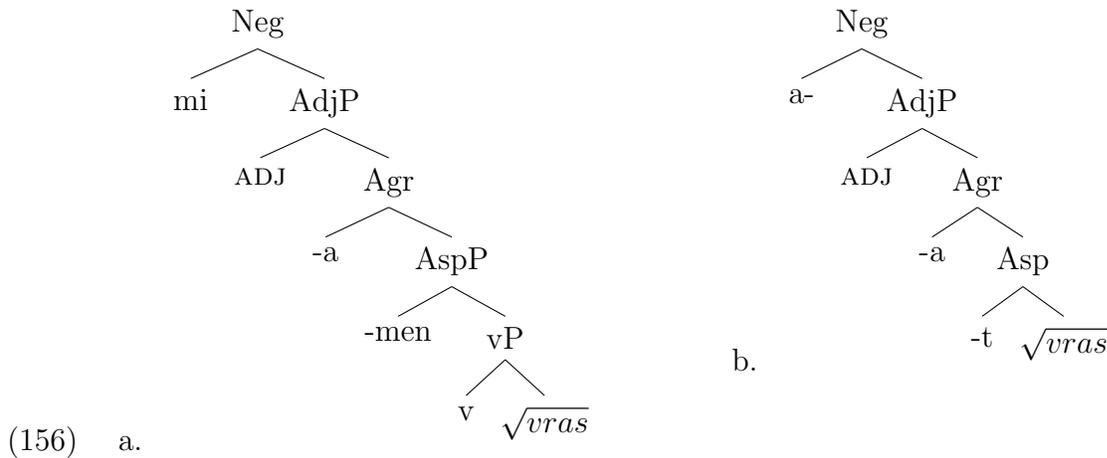
Given the intervening Agr head between the Adj head and the Asp, it is clear that the morphemes *-men* and *-t* are lower in the structure. So, unlike Bruening's analysis for English, there is no exponent on the Adj head in these cases.

The interesting pair of allomorphs though is *-men* and *-t*, when they both mark perfective aspect. The latter only appears with perfective aspect in fact, so the form **aleɣota* still needs to be ruled out, allowing only the suppletive stem with *-t*. For this, another head needs to trigger the [+PERF] aspect. Here I propose a modification of the analysis in Anagnostopoulou (2003), to include a v_{stat} in *-t* participles.

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(157)

a. Resultative

```
                    NegP
                   /    \
                 mi     AdjP
                        /   \
                     ADJ    AgrP
                            /   \
                          -a    AspP
                                /   \
                             -men  VoiceP
                                     \
                                    Voice'
                                    /    \
                                 Voice    vP
                                         /  \
                                  V_become  √vras
```

b. Stative

```
                 NegP
                /    \
              a-     AdjP
                     /   \
                  ADJ    AgrP
                         /   \
                       -a    AspP
                             /   \
                           -t    vP
                                /  \
                           V_stat  √vras
```
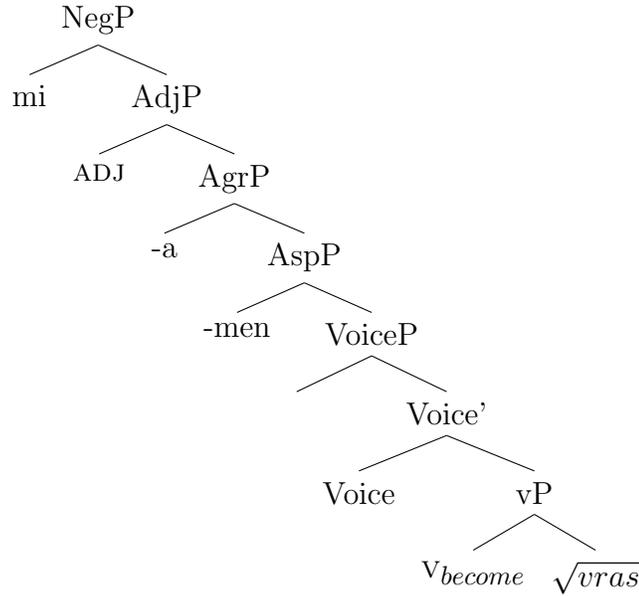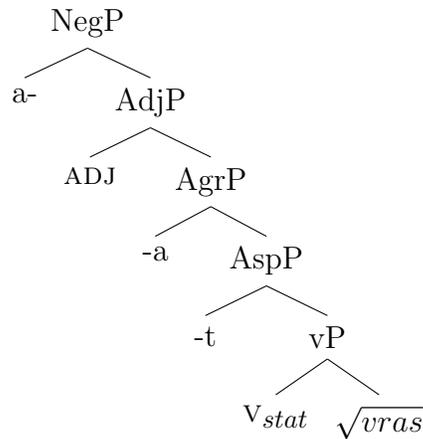
With v_{stat}, aspect can only be [+PERF] and can only be realized by *-t*. Given that the suppletive stem is conditioned by perfective aspect (Merchant 2015), the form that uses the non-suppletive stem does not appear here. The existence of that v_{become} head is evidenced by the exponence of the vowel *-i*, also found in other overt realizations of the v head (Spyropoulos and Revithiadou 2009).

(158) fa- i -men -os
       eat V ASP AGR
       'eaten'

It also explains the difference in disallowing verbs of change of state with *-men*

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participles that already have that incorporated.

(159) a. To kotopulon eɣiniken   tianito.
           the chicken   become.PAST.PERF.3SG fried.PART
           'The chicken became fried.'

       b. # To kotopulon eɣiniken   tianismeno.
             the chicken   become.PAST.PERF.3SG fried.PART

In addition, exponents of v_{become}, like *-iz* are found with *-men* and not *-t*.

(160) a. aspr   -iz -o
           white v   1SG
           'I become white.'

       b. aspr   -iz -men -os
           white v   ASP   1SG
           'He has be come white.'

       c. * aspr   -is -t   -os
             white v   +PERF 1SG

With other overt verbalizers, like *-ef*, the verbalizer appears in both participial forms,

providing evidence for the existence of *v* in state participles as well.

(161) a. mair -e -men -o.
           cook V PERF AGR
           'cooked'

       b. mair -ef -t   -o.
           cook V   PERF AGR

Last, change of state verbs in Cypriot Greek always show an exponent *-n* with [-IMPERF]

aspect, confirming exactly that imperfective aspect is allowed with v_{become}.

(162) paʃi -n -isk   -o.
       fat   -v -PERF -1SG
       'I became fatter'

This suggests that stative participles are not built from roots, but from verbs, just

like the *-men* cases. By changing part of the proposal in Anagnostopoulou (2003), I

propose that there is more structure in stative participles, including a vP. However, just

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like v_{become}, this v_{stat} defines the stative participle and conditions aspect to only be perfective, realized only by -t in these cases. Whether this brief suggestion is on the right track or not, with a more careful look at the morphemes, we can argue for more underlying structure.

2.4 Revisiting Conditions on Allomorphy

The goal above was to present a detailed analysis of the verbal morphosyntax in Cypriot Greek, which allows for different allomorphs to appear in the different positions identified. As a reminder before going back to the questions this chapter is focusing on, the conditions on allomorphy that have been identified in the relevant literature are given below.

(a) *Cyclicity/Locality*: Insertion proceeds inside-out, cycle by cycle (Embick 2010; Bobaljik 2000a; Deal and Wolf 2013; Carstairs-McCarthy 2001)

'(b) *Directionality*: A morpheme can be inwards sensitive to form, and outwards sensitive to morphosyntactic features (Bobaljik 2000a; Carstairs-McCarthy 2001)

(c) *Linearity*: The conditioning environment for allomorphy of a morpheme must be linearly adjacent to the morpheme (Embick 2010; Deal and Wolf 2013)

(d) *Order of Vocabulary Insertion*: Within a cycle, VI does not have to be inside-out (Deal and Wolf 2013).

(e) *Feature type*: Categorial features are different from features specifying the values of these categories (Bonet and Harbour 2012)

(f) *Rewriting*: As morphosyntactic features are expressed by vocabulary items, these features are used up and are no longer a part of the representation (Bobaljik 2000a).

The discussion so far has focused on the configurations in which one morpheme may serve as the context that triggers allomorphy on another morpheme. As introduced

earlier, Bobaljik (2000a) argues that a given morpheme may be sensitive either inwards or outwards, but that the different direction reflects sensitivity to different types of morphological features. Allomorphy for morphosyntactic features is outwards sensitive, while inwards sensitivity is restricted to morphophonological diacritic features.

In Cypriot Greek, the asymmetry between outwards and inwards sensitivity in allomorphy observed is different than the one argued for Itelmen in Bobaljik (2000a). Instead, what we find is that morphosyntactic features are accessible both in the outward peripheral morphemes, but also inwards. Allomorphy based on morphophonological features appears to always be inwards, but allomorphy conditioned by morphosyntactic features can be either outwards or inwards.

By reviewing the empirical facts presented in earlier sections, the summary in the following tables shows the sensitivity of allomorphy in Cypriot Greek.

Inwards Allomorphy, sensitive to form				
Position	Exponent of	Allomorphy environment	Example	Meaning
Voice	-ACT	root/lexical	epenði-θ-ik-/ anaptix-t̠-ik-	'to invest/' 'to develop'
Aspect	+/-PERF	root/lexical	xá-n̠-o/xá-s̠-o	'to lose'
	+/-PERF	root/lexical	ká-m̠n̠-o/ka-m̠-o etc.	'to do'
	+/-PERF	/-i/	aɣapi-s̠o	'I will love'
Tense	+PAST	-ik/-∅	aɣapí-θ-ik-e̠-s/ aɣapí-θ-∅-i̠-s	'you were loved'
Tense	-PAST	-s/-∅	pon-∅-∅-i-te/ e-pon-u-s-e-te	'you are hurting' 'you were hurting'
Augment	+PAST	root/lexical	kamn-/e̠-kam-	'to do'
	+PAST	root/lexical	vr-/ i̠- vr-	'to find'

Table 2.46: Inwards Allomorphy

As summarized in the table above, Voice, Aspect, Tense and the Past Tense Augment show cases of inwards sensitive allomorphy with respect to the form of the trigger in the environment. The nonactive Voice exponent appears as -θ or -t, depending on the root.

Consonant alternations in perfective/imperfective marking are also lexically specified. The form of the past tense as *-e* or *-i* in 2SG/3SG depends on the exponence of the perfective morpheme *-ik*. Last, the augment can surface as *e-* or *i-* depending on the root.

In the application of the general principle on contextual allomorphy and inwards sensitivity to morpho-phonological forms, we find cases where allomorphy in particular positions of the Cypriot Greek verbal morphosyntax depends on the form of an inwards located exponent. This exponent, or vocabulary item, defined the conditioning environment for allomorphy to be triggered. Given the hypothesis of cyclicity (Bobaljik 2000a), sensitivity to a specific vocabulary item must be inwards because sensitivity is restricted to information that is already present in the morphological representation.
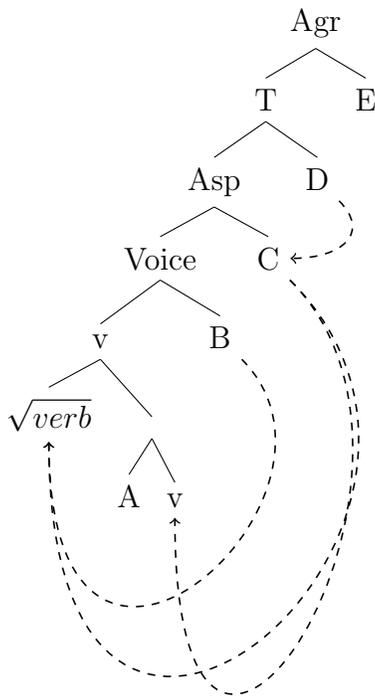
(163)

On the other hand, outwards sensitivity should be possible, but only conditioned by

those features that are relevant to the syntactic computation. Given the cyclic nature of VI, this principle refers to information not being available in the next cycle and information in the peripheral positions may not trigger allomorphy for exponents that are located inwards.

Outwards allomorphy, sensitive to morphosyntactic features				
Position	Exponent of	Allomorphy environment	Example	Meaning
Theme	2nd conj	+/- PERF	aɣap-u̱-sa/aɣap-i̱-sa	'I loved'
Voice	-ACT	+PERF	pli-θ̱-ika/plin-∅-iskumun	'I washed'
Aspect	+PERF	+2SG	epliθ-i̱kes/epliθ-∅is	'you washed'
Tense	+PAST	1SG,2SG, etc.	exas-e̱-te/exas-a̱-men	'you lost'
Tense	-PAST	1SG,2SG, etc.	xan-u̱-men/xan-e̱-te	'you are losing'

Table 2.47: Outwards Allomorphy: morphosyntactic features

Theme vowels are sensitive to the outward morpheme of aspect, which is realized here as *-s* in both perfective/imperfective marking. Nonactive voice shows allomorphy according to aspect as *-θ* is only conditioned in perfective aspect. The exponence of perfective aspect as *-ik* depends on the agreement feature, and specifically the one of 2SG/3SG. The exponence of the +/-past morpheme shows allomorphy according to the agreement feature as well. Outwards sensitivity appears for all different morphemes in the structure, as schematically shown below.

```
                    Agr
                   /  \
                  T    E ↰
                 / \      ⋮
              Asp   D ↰    ⋮
             /  \     ⋮     ⋮
         Voice   C ↰  ⋮     ⋮
          /  \    ⋮   ⋮      ⋮
         v    B   ⋮   ⋮      ⋮
        / \    ⋮  ⋮            ⋮
    √verb  \   ⋮                ⋮
           A  v ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯
```
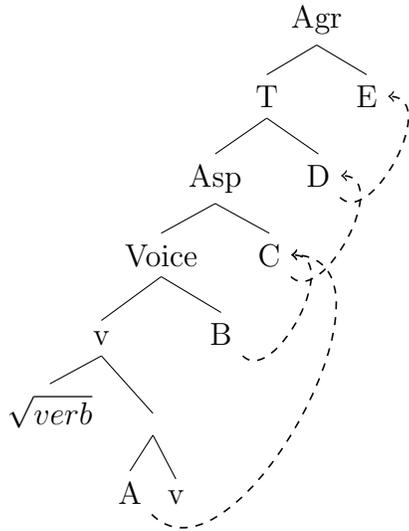
(164)

Inwards allomorphy, sensitive to morphosyntactic features

Position	Exponent of	Allomorphy environment	Example	Meaning
Theme	[+a,-b], [+a,+b]	Root class	andanakl<u>a</u>sis/ afer<u>e</u>sis	'your reflect' 'your deduct'
Agr	+1SG, +2SG etc.	+/-PERF	pliθ<u>o</u>/ plinisku<u>me</u>	'I will wash' 'I wash'
Agr	+1SG, +2SG etc.	+/-PAST	eplinisku-<u>mun</u>/ plinisku<u>me</u>	'I was washing' 'I am washing'

Table 2.48: Inwards Allomorphy: morphosyntactic features

A case not attested in Itelmen in Bobaljik (2000a) is inwards sensitivity to morphosyntactic features. Cypriot Greek shows inwards sensitivity to morphosyntactic features; the first case concerns the allomorphy of the theme vowels depending the root information as discussed in the previous section. Second, the exponence of the perfective *-ik* is always conditioned by nonactive Voice. Third, Class A and Class B of the second conjugation shows allomorphy in the nonpast imperfective form that depends on the root features. Last, agreement features in nonactive are conditioned by aspect and tense.

```
                    Agr
                   /   \
                  T     E
                 / \    ⌐ᴖ
               Asp   D  ⌐ᴖ
              /  \   ᴧ    |
           Voice   C ↑    |
           /  \    ⌐----ᴖ |
          v    B   ⌐------ᴖ
         / \
      √verb
       ↑ \
       ⌐ᴖ  A  v
       ⌐-ᴖ
```
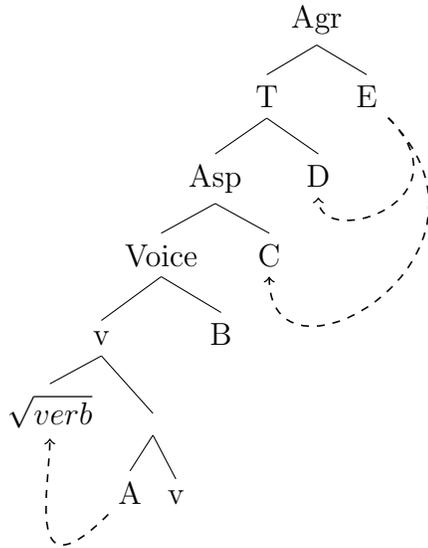
(165)

The last of the cases described here is not predicted as inwards sensitivity is restricted to morphophonological diacritic features (Bobaljik 2000a). While in Itelmen, an asymmetry is observed with regard to directionality of allomorphy, the same does not apply for Cypriot Greek, where sensitivity to morphosyntactic features can be either outwards or inwards. Sensitivity to form (i.e. vocabulary items) is only attested inwards, providing support for the separation of the morphological component in grammar in two components: the part where abstract bundles of features are part of the syntactic structure and the part where they are actually interpreted.

The case of the Theme vowels seems to be the problem here since it shows outwards morphosyntactic sensitivity to Aspect but inwards morphosyntactic sensitivity to the root. If the theme vowels need to look ahead to the Aspect node to determine the form of the morpheme, then this is good evidence to suggest that in a cyclic derivation only the complement of v has spelled out. At the same time, if a cyclic derivation is indeed taking place then the morphosyntactic features of the root should not be available. The dilemma is the following: To keep the cyclicity condition, we will need to assume that morphosyntactic features are still accessible after VI.

The cases of contextual allomorphy as discussed here also create problems for strict theories of locality. Repeated below, Embick (2010) defines locality in contextual allomorphy in the following terms:

(166)   a. Contextual allomorphy is possible only with elements that are concatenated by ⌢

       b. Cyclic spell out domains define which nodes are present in a given cycle of PF computation, and thus potentially active (capable of being referred to) for the purposes of contextual allomorphy. Some outer nodes are not present when inner nodes are sent to PF. In addition, superficially adjacent nodes sometimes cannot influence each other allomorphically because in terms of cyclic spell out, they are not active in the same PF cycle.

<div align="right">(Embick 2010:35-36)</div>

If derivation happens cyclically, the question that arises is what the cyclic head is. The variation in the form shows that it would still need to be part of the higher cyclic domain since it depends on the morphosyntactic feature of aspect.

(167)   a. pon -i -s   -e   -s
           hurt TH PERF PAST 2SG
           'you hurt'

       b. pon -u -s   -e   -s
           hurt TH IMPERF PAST 2SG
           'you were hurting'

I will assume here that the little v/theme vowel acts as a cyclic head for spell out purposes (Embick 2010). However, the problem is that theme vowels would need access to the morphosyntactic features of the root given the analysis suggested above. If the root has already been spelled out, then these features should no longer be available in the derivation given *Rewriting* (Bobaljik 2000a). This would require the relaxation of this condition, which is already suggested in other work analyzing the Bulgarian definiteness marker

and inward-sensitive allomorphy (Gribanova and Harizanov 2015). Since the definiteness marker is invariably the most peripheral morpheme in its morphosyntactic word (both in terms of linear order and hierarchical structure), the choice among its allomorphs is inwardly sensitive to information associated with the stem to which it is suffixed.

(168) a. staro-to darvo
            old-DEF tree
            'the old tree'

       b. tri   -te   novi knigi
           three -DEF new books
           'the three new books'   (Gribanova and Harizanov 2015:13)

The assumption of allowing for features to be visible after they are discharged was also discussed in Noyer (1992) where the claim was that an affix was the principal exponennt of a feature, then the rule introducing the affix discharges the feature. When a feature is discharged, an affix realizing that feature will appear on the string. Discharged features continue to be visible, but may condition allomorphy in rules which discharge other features.

The theme vowels (or verbalizers) in Cypriot Greek do not show allomorphy based on other inflectional morphemes, as in the case of Latvian theme vowels in nouns. In Latvian, the theme vowel shows its default allomorph -*a*, but appears as -*u* in the accusative singular.

(169) a. zirg -a -m
           horse TH DAT
           'horse'

       b. zirg -u -∅
           horse TH ACC.SG
           'horse'   (Noyer 1992:16)

The *adjacency* condition on allomorphy is not always necessary for allomorphy to happen (see also Merchant 2015). Nonactive Agreement suffixes show allomorphy based

on the imperfective/perfective aspect. In the case below, the conditioning happens across the intervening tense suffix *-u*.

(170) a. pli -θ   -o
           wash NONACT 1SG
           'I will be washed'

     b. pli -n -isk   -u   -me
         wash V IMPERF NONPAST 1SG

(171)
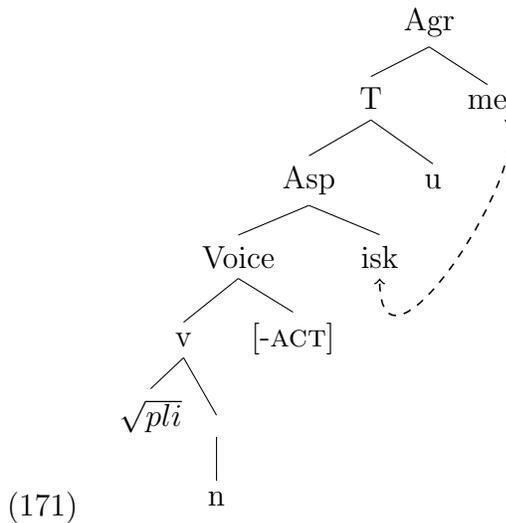
These inflectional suffixes are within the same cyclic domain, however, and are therefore still active (Embick 2010). Unlike the case of theme vowels accessing information on the root, this case does not require assuming accessibility to morphosyntactic features in inward-sensitive allomorphy.

2.4.1   Allomorphy and Spell-Out

An alternative suggestion on the conditions of the context of allomorphy is the *Span Adjacency Hypothesis* (Merchant 2015), which states that allomorphy is conditioned only by an adjacent span and permits nonadjacent heads and their features to participate in the conditioning of an allomorph, but requires that these nonadjacent heads form a span, up to and including the head that is adjacent to the conditioned form. Allomorphy (in

stems particularly) is conditioned locally but not by the features of adjacent nodes; rather, it is conditioned by features in adjacent spans, whether or not those spans are themselves lexicalized by Vocabulary items. Within a span theory of allomorphy, the allomorphy in agreement morphemes, as in *pliθ-o* and *plinisku-me*, conditioned by the nonadjacent aspect head, would be conditioned by what is identified here as the aspect and tense head.

But while it is clear how inflectional allomorphy would be predicted, the *Spanning Insertion Hypothesis* is a hypothesis about which nodes can be targeted for lexical insertion or be realized by a single morpheme bearing on the question of treating suffixes in Greek as portmanteau morphemes.

(172)   Spanning Insertion Hypothesis

A span and only a span can be targeted for Vocabulary Insertion.

(Merchant 2015:288)

This works for an approach to morphology as in Joseph and Smirniotopoulos (1993), who suggest that each morpheme realizes a set of feature values, without a one-to-one mapping of syntactic nodes to morphemes. As they state:

" Such cumulative exponence is a pervasive property of Greek verbal morphology, with every element of form being a partial exponent of several morphosyntactic features. Thus, it is not possible simply to identify-as Rivero tries to do-a single affix that is the exponent of each morphosyntactic category so as to yield a one-to-one mapping of morphemes and categories; no inflectional category can be straightforwardly matched with a single marker, nor can any individual marker be linked to a single category. "

(Joseph and Smirniotopoulos 1993: 391)

The extent to which verbal suffixes should be treated as portmanteaux with every exponent realizing several morphosyntactic features is the crucial question. Spanning, for

example, could give a different analysis of the distribution of the perfective morpheme
-ik:

(173)   a.   aɣapi -θ   -ik   -es
             love   NONACT PERF 2SG
             'You were loved.'

        b.   aɣapi -θ   -∅   -is
             love   NONACT PERF 2SG

Currently, each exponent realizes a single head and a zero morpheme realizes the perfective aspect. To explain the absence of an exponent, would we want to treat *-is* as a portmanteau suffix realizing both aspect, tense and agreement? It is predicted that *-θikes* and *-θis* are inserted by the same set of features, namely NONACT.PERF.2SG. The exact morpheme that shows the allomorphic behavior, namely the Aspect head, in this case is ignored in the context of portmanteau insertion. Joseph and Smirniotopoulos (1993) explain that *-ik* is not a marker of aspect but it marks nonactive voice, past tense and perfective aspect all together and that if any of these features is not present, *-ik* fails to occur. In the example above, *-ik* does not occur not because of the absence of any features, but because another morpheme is triggering aspect to be realized as zero morpheme.

Conditions that trigger allomorphy and the actual process of Vocabulary Insertion are separate while VI should be able to read the rules in conditioning environments and realize the correct exponent, the underlying structure defining the environment is already built. With the Spanning Insertion Hypothesis, each position that introduces an allomorph would have to be a trivial span in order for the other elements to definite its allomorphy.

In other theories of Vocabulary Insertion, Svenonius (2012) defines Spell-Out in two steps: the one is the L-Match (L for lexical) and in each phase the syntactic structure must be lexicalized. Lexical entries pair syntactic and phonological information but L-Match only operates on features on the syntactic side of the pairing. It defines that the syntactic structure must be lexicalized and linked to lexical entries that pair syntactic and phonological information. L-Match, as defined in Svenonius (2012), does not predict

contextual allomorphy and the Elsewhere Principle is not invoked at this level. Syntax does not distinguish between the allomorphs and a lexical entry includes all possible allomorphs. For Greek, then, the different allomorphs realizing agreement, but conditioned by Tense, should not be distinguished.

(174) -me,-mun ↔ {/me/, /mun/}

Instead, allomorphy is resolved at Insert, which is the second step in Spell-Out in which the syntactic features are no longer available and only the phonological form of the matched exponents becomes relevant. At this level, the syntactic nodes and their order become irrelevant along with their syntactic features. The model described here contradicts the empirical findings presented in this chapter: that, in fact, the system needs access to morphosyntactic features before realizing an exponent. This is the point, where conditions like directionality, become extremely relevant, since assuming an Inside-Out Vocabulary Insertion while needing inwards access to morphosyntactic features would be impossible. At the level of Insert, morphemes would be given phonological form, making any features or syntactic nodes inaccessible to further computation.

One example is agreement suffixes, whose realization of 1ST PERSON for example, depends on the morphosyntactic features on T. The directionality is inwards and in a strict morpheme-to-morpheme realization T would have been spelled out, not allowing any access to the features or the T node itself. It would be impossible for this system to decide using contextual allomorphy if *me* or *mu* should be realized since even the Elsewhere Principle at Insert would not longer have access to the relevant features.

(175) a. Varku   -me.
           be.bored -1SG
           'I am bored.'

       b. E-   varku   -mun.
           PAST be.bored 1SG
           'I was bored.'

117

```
        AgrP                           AgrP
       /    \                         /    \
     Agr     TP                     Agr     TP
      ∿       \                      ∿       \
     me      /  \                   mun     /  \
            T   ...                        T   ...
               /  \                           /  \
             ...   √                        ...   √
```
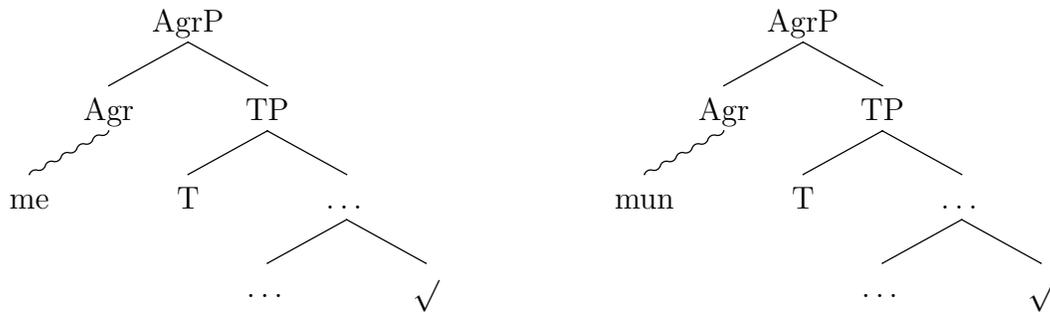
Any Spell-out system needs to allow for access to morphosyntactic features at Vocabulary Insertion. That is, the Insert stage of lexical insertion, where standard conditions on insertions like the Elsewhere Principle apply, do not only access phonological content, but also structure.

2.5 Summary

The goals of this chapter were first to give a detailed analysis of the Cypriot Greek verb's morphology and second to explore the generalizations on the conditions of locality and sensitivity in allomorphy as seen in this set of data.With a detailed analysis of the Cypriot Greek verbal morphology, this chapter has also showed that already existent proposals from Standard Modern Greek about the analysis of particular morphemes cannot be applied in the data discussed here. Based on work on verbalizers in Standard Modern Greek (Spyropoulos et al. 2015), I propose an alternative analysis to these morphemes as theme vowels. To continue, I analyze the morpheme -*isk* as an aspectual morpheme and I discuss its appearance more generally with change-of-state verbs. The aspectual position is one of the most common morphemes that is subject to allomorphic dependencies, such as the consonantal alternations. Last, agreement suffixes are not affected by other morphemes in the structure, except for a small part, where allomorphy targets the appearance of a different set of suffixes conditioned by a specific context.

With respect to allomorphy, the Cypriot Greek verb has a number of allomorphic

dependencies, discussed in terms of these conditions. The study of these allomorphic dependencies is revealing when it comes to the adoption of strict theoretical approaches to the fact of allomorphy: definitions on locality and sensitivity, both as main conditions to understand the phenomenon, can only benefit from these data. In this way, this chapter shows that an asymmetry in sensitivity is not always present and this potentially has consequences about the assumptions made for the interaction of morphology, syntax and Vocabulary Insertion.

Study of allomorphy in the verbal morphology has interesting contributions to the Spell-out assumptions: how words get form and to what extent the components that seem to allow conditions to trigger changes, such as syntax, interact with the final form of exponence. Most importantly, it shows that languages like Greek that are characterized by clear systematicity in the distribution of the different morphemes and their allomorphs cannot be treated as maximal portmanteaus that realized a number of different features, both for reasons of economy in smaller storage in the lexicon for all the different options and of practicality in terms of predicting the different alternations seen here. One of the greatest challenges that a child learning morphology faces is the sparsity of morphological combination in the target language. Morphological learning would be relatively simple, if the Cypriot Greek child memorized the paradigms, like a second language learner. But if acquisition of morphology proceeds in an unsupervised fashion, then the child really masters the rules that define the realization of allomorphs and suppletive stems without necessarily having seen that lemma. The study of variation in form, is in that sense, a central issue for the understanding of the mechanism of learning and the wide-range generalizations formed early on.

CHAPTER 3

MORPHOSYNTACTIC DEPENDENCIES IN SYNTACTIC CONFIGURATIONS

3.1 Verb movement and morphology

Allomorphy is conditioned word-internally and is subject to conditions of locality, directionality and more, but also particular syntactic configurations may condition allomorphy. In a morphological account of verb movement, recent work argues that the presence or absence of V-to-C movement can in fact have an effect on the realization of the agreement morphology on the verb (Bogomolets et al. 2018). Agreement is sensitive to the syntactic position of the verb in Dutch, where the presence of the 2ND SINGULAR agreement suffix on the verb depends on its position in the syntax, specifically, its position in relation to the subject (Zwart 1993a; Bennis and MacLean 2006). Agreement in these cases does not surface on the verb in V2 clauses if the subject follows the verb (176a). The presence of V-to-C movement feeds this process when the verb does not move in embedded clauses, (176c), the 2ND SINGULAR agreement suffix -*t* appears.

(176) a. Met je   zusje loop   je   naar de snoepwinkel.
           with your sister walk-∅ you to   the candy.shop
           'You walk to the candy shop with your sister.'

       b. Je loop -t   met je   zusje naar de snoepwinkel.
           you walk -AGR with your sister to   the candy.shop
           'You walk to the candy shop with your sister.'

       c. . . . dat je   met je   zusje naar de snoepwinkel loop -t.
           . . . that you with your sister to   the candy.shop   walk -AGR
           'That you walk with your sister to the candy shop.'

       (Bogomolets et al. 2018: 40)

The variation in the morphological realization of the agreement suffixes is not accidental, but is based on particular syntactic configurations that condition the alternation. Bogomolets et al. (2018) present morphological and phonological evidence for V-to-C movement based on locality restrictions on allomorphy of the suffix and present the following conditions:

(177)   **Condition 1**: efa

   Condition 2:

   Morphological merging of V and C shows locality restrictions

This idea is based on Bobaljik (2012), which claims that X cannot trigger allomorphy on Y if they are in distinct maximal projections. The observed allomorphy in (176) then is indirectly conditioned by V-to-C movement: only when the verb moves to C do the two become part of the same morphological domain, and C can affect the realization of AGR and trigger allomorphy. The VI rules will then condition the realization of α to β when found in the same context as X (179); any other cases will not trigger allomorphy (178a). The representations are given in (178b) and (179b) accordingly.

(178)   a. $Y \leftrightarrow \alpha$

   $*Y \leftrightarrow \beta/[\_\_X]$

(179)   a. $Y \leftrightarrow \alpha$

   $Y \leftrightarrow \beta/[\_\_X]$

b.
```
        XP
       /  \
      X   YP
          / \
         Y  ...
```

b.
```
        XP
       /   \
      X     YP
     /|\    / \
    Y X t_Y ...
```
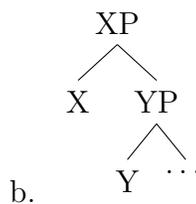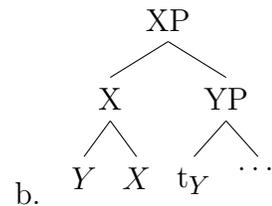
The claim that movement feeds allomorphy, which supports generalization on the conditioning of allomorphy in syntax, is built on empirical evidence from data on Arapaho where the agreement morphology differs according to the verb position. The distribution of the two agreement paradigms in Arapaho is divided in *complex* agreement, which is

restricted to negative, interrogative, and modal clauses, and *simple* agreement, which is the default paradigm[1].

(180) a. n<oon>óóhob -**éinóni**
          <IC>.see   -3>2
          'They see you$_{sg}$.'   Arapaho Simple

       b. héí hoow- noohob -**éiʕí**
          2- NEG- see   -3PL>2SG
          'They don't see you$_{sg}$.'   Arapaho Complex

When the verb has moved to C, allomorphy is triggered since the verb and C are in the same domain.

(181) a. AGR ↔ éiʔí/__C

       b.
```
                    CP
                   /  \
                  C    YP
                 / \   / \
                C  verb t_verb  ...
                   / \
                verb  AGR
```
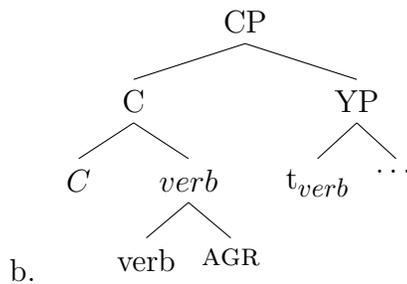
I will explore here whether Cypriot Greek shows similar allomorphy depending on the position of the verb, that is when the verb raises to C.[2] A rather straightforward way for the position of the verb is its position with respect to object clitics.

---

1. In the example provided, the gloss is marked as '1,2,3'=1st,2nd,3rd, 'IC'=initial change.

2. One possible case of this dependency is particular verb stems, such as the verb *eat* and *get*. When the verb precedes the clitic, the tense suffix (see Chapter 2) can only be -∅ in 2ND SINGULAR. On the contrary, when it follows, it is *-es*.

(1) a. Efa   -s   to?   b. * Efa   -es   to?
        eat.PAST.PERF -2SG it.CLI   eat.PAST.PERF -2SG it.CLI
        'Did you eat it?'   'Did you eat it?'

(2) a. En to   efa   -es.   b. * En to   efa   -s.
        NEG it.CLI eat.PAST.PERF -2SG   NEG it.CLI eat.PAST.PERF -2SG/
        'You didn't eat it.'   'You didn't eat it.'

One such case is evident with the realization of the suffix *-si* restricted to cases where the verb follows an object clitic.

(182)   a.   Efa   -(*si) -n   to.
             eat.PAST.PERF - si -3PL it.CLI
             'They ate it.'

          b.   En to efa   -(si) -n.
             NEG CLI eat.PAST.PERF - si -3PL
             'They didn't eat it.'

This morpheme only appears with 3RD PERSON PLURAL in all tenses and aspect combinations and when it can appear it is actually optional. Another piece of special morphology is the suffix *-nde* which appears again only when the verb follows the clitic (Pavlou and Panagiotidis 2013). Its use is restricted to 1ST PLURAL and just like *-si* it is optional where it can appear.

(183)   a.   Efa   -me -(*nde) to.
             eat.PAST.PERF -1PL - nde it.CLI
             'We ate it.'

          b.   En to efa   -me (-nde).
             NEG CLI eat.PAST.PERF -1PL -nde
             'We didn't eat it.'

The question raised is whether allomorphy is triggered on the T head itself, or whether locality conditions after head movement of the verb to C create the circumstances for allomorphy to appear, as argued in Bogomolets et al. (2018). The two hypotheses are schematized again below:

---

(3)   a. Epka   -s to?   b. * Epka   -es to?
        get.PAST.PERF -2SG it.CLI   get.PAST.PERF -2SG it.CLI
        'Did you get it?'   'Did you get it?'

(4)   a. En to epkja   -es.   b. * En to epkja   -s.
        NEG it.CLI get.PAST.PERF -2SG   NEG it.CLI get.PAST.PERF -2SG
        'You didn't get it.'   'You didn't get it.'

(184) a.

```
        XP
       /  \
      X    YP
          /  \
         Y   ...
```

b.

```
        XP
       /   \
      X     YP
     / \   /  \
    Y  X  t_Y  ...
```

Parallel to these data is a contrast in imperative contexts, where a strong imperative V-feature in C triggers verb movement (Rivero and Terzi 1995) given the alternation again with the object clitic. The verb shows special morphology in these cases, typically associated with imperative mood.

(185) a. to   ðjavas -e   -s
     it.CLI study -PAST -2SG
     'You studied it.'

   b. ðjavas -e   to.
     study -2SG it.CLI
     'Study it!'   Standard Modern Greek

   c. *No lee!
     not read.2SG
     Intended: 'Do not read'

   d. Léelo!
     read.2SG-it
     'Read it'   Spanish

(Rivero and Terzi 1995: 304)

Rivero and Terzi (1995) distinguish between verbs in Class I that have a distinctive syntax in imperatives, like Greek and Spanish, and imperatives in Class II that lack a distinctive syntax. Languages displaying a morphological Imperative paradigm differ with respect to Imperative syntax, which they assume to be a difference in the features on C. Class II languages do not have a unique syntax for imperatives, since the verb appears in the same position as in indicative, subjunctive and optative sentences. One such case according to Rivero (1991) is Ancient Greek, where the position that the verb goes to identified as C has not features. Instead Class I language has a C with related features.

A feature difference resulting in different morphology can be explained as contextual allomorphy. As will be seen further below, Cypriot Greek is a Class II language according to this division, where the verb targets the same position independently of the mood in the clause.

More generally, verbal fronting is often found in two flavors, with one being cases of VP-Preposing (186a) and the other cases of the verb moving to a higher position as head movement. In questions, the latter is the result of movement of the verb at least to T, since a preverbal subject is disallowed (186c).

(186)   a. I   Maria   eprepe   na θkjevasi   tundo
             the.NOM Maria.NOM have.PAST to read.NONPAST.PERF.3SG this-the.ACC
             vivlio   tʃe [eθkjevasen   tundo   vivlion] (ipen).
             book.ACC and read.PAST.PERF.3SG this-the.ACC book.ACC say.PAST.3SG
             'Maria had to read this book and [read the book] she said (she did).'

        b. Pote eθkjevasen   i   Maria   to   vivlio?
             when read.PAST.PERF.3SG the.NOM Maria.NOM the.ACC book.ACC
             'When did Maria read the book?'

        c. * Pote i   Maria   eθkjevasen   to   vivlio?
             when the.NOM Maria.NOM read.PAST.PERF.3SG the.ACC book.ACC

VP-fronting constructions have been treated both as instance of A'-movement but also VP dislocation of VP (Ott 2018). The latter are extra-clausal constituents resumed by a clause-internal correlate corresponding to a silent version of *that* which moves to the CP edge. This silent correlate is overt in other languages, but covert in English. Cypriot Greek does not allow an overt correlate like *that* in these environments, as illustrated below.

(187) I   Maria   eprepe   na θkjevasi   tundo
      the.NOM Maria.NOM have.PAST to read.NONPAST.PERF.3SG this-the.ACC
      vivlio   tʃe [eθkjevasen   tundo   vivlion] (*ipen   oti).
      book.ACC and read.PAST.PERF.3SG this-the.ACC book.ACC say.PAST.3SG that
      'Maria had to read this book and [read the book] she said (she did).'

However, the C particle *embu*, which will be discussed in more detail below, shows that the constituent is indeed in a fronted position, even if lower complementizers are not possible.

(188) I   Maria   eprepe   na θkjevasi   tundo
      the.NOM Maria.NOM have.PAST to read.NONPAST.PERF.3SG this-the.ACC
      vivlio   tʃe [eθkjevasen   tundo   vivlion] embu (ipen).
      book.ACC and read.PAST.PERF.3SG this-the.ACC book.ACC C   say.PAST.3SG
      'Maria had to read this book and [read the book] she said (she did).'

A further striking asymmetry concerns the morphological mismatches between a fronted VP and its base position. The main verb in a fronted VP, as noted in Ott (2018), can be an uninflected form even if no such form is licensed when the VP remains in situ.

(189)   a. She said she would lose her temper, and [lose her temper], she has.

         b. *She said she would lose her temper, and [lost her temper], she has.

A movement approach would have to assume that VP-fronting literally bleeds affixation or that the position of the VP in a fronted position or in T in non-fronted situations creates the condition for the verb to appear with a particular form.

If condition 1 in (??) is true, then in any instance of verb movement higher than the TP, we would expect to observe allomorphy in the agreement suffixes. While this certainly seems to be the case for verbs in the imperative mood, it is not the case with verbs moving higher in the clause in other syntactic environments without showing any special morphology.

The contrasts discussed here with respect to the position of the verb also challenge certain aspects of the idea that morphology drives syntax, one version of which is known

as the *Rich Agreement Hypothesis (RAH)*, where rich morphology on a verb can be linked to its raising to a structurally higher position, and more specifically I^o (see Alexiadou and Anagnostopoulou 1998 for Greek). In fact, the actual morphemes on the verb when it surfaces structurally higher than other positions show that overt morphology does not cause or drive verb movement, but rather that any inflection is a reflection of particular syntactic structure (Bobaljik 2002; 2000b). The tense morpheme does not surface on a verb like *eat*, when the verb is structurally higher.

(190)   a. Efas/   *efaes to?
             eat.PAST.PERF.2sg/   it.CLI
             'Did you eat it?'

          b. En to   efaes/   *efas.
             NEG it.CLI eat.PAST.PERF.2sg
             'You didn't eat it.'   Cypriot Greek

Comparing Cypriot Greek with its closest relative, Standard Modern Greek, it is clear that syntactic variation with respect to the position of the verb can appear without any significant morphological differences.

(191)   a. To   iðes?
             it.CLI see.PAST.PERF.2sg
             'Did you see it?'   Standard Modern Greek

          b. Iðes   to?
             see.PAST.PERF.2sg it.CLI
                                           Cypriot Greek

If morphological variation is the only cause of syntactic variation and a difference in the position of the verb in the clause, then there should be no syntactic variation in the absence of a morphological trigger. Since such variation exists, it follows that morphological variation is not the only trigger of syntactic variation, in this case verb raising.

One of the most accurate tests for the position of the verb in Cypriot Greek is clitic placement (Terzi 1999; Grohmann 2011 among others). Most of the verbs show the same morphology even if the word order with respect to clitics is different as a consequence of the verb moving higher to a position in the CP.

(192) a. Eθkjavasa   to.
           study.PAST.PERF.1sg it.CLI
           'I studied it.'

       b. En to   eθkjavasa.
           NEG it.CLI study.PAST.PERF.1sg
           'I didn't study it.'

This raises the question of underlying morphosyntax that needs to be assumed for the distribution of both verbs that show allomorphy and those that do not. The goal of this chapter is to show the position of the verb in Cypriot Greek with respect to other elements in the clause and confirm the hypothesis that verb movement feeds some morphological variation.

3.2   Theories of Verb movement

With respect to theories on verb movement, there is a plethora of theories from languages that show evidence of the verb surfacing in different positions but also more generally the nature of head movement cross-linguistically.

3.2.1   Incorporation

In syntactic incorporation (Baker 1988), head-to-head movement is the operation which drives morphologically complex words from more basic elements, a variant of move-α. Words can be formed by syntactic operations, like incorporation, by giving rise to derived complex heads. It adjoins a head to another head, in that sense. This type of movement may be either substitution of a head into another head position, or adjunction of a head

to another head position. When incorporation results in two heads, the incorporation host morphologically selects the incorporeee, creating a structural slot as a function of the lexical properties of the incorporation host. If the potential host does not provide a structural slot via morphological selection, head-to-head movement may take place either as an instance of adjunction or if the host head is radically empty as substitution into the empty head position (Rizzi and Roberts 1989; Roberts 2012).

To account for the fact that items associated by head movement act as a single constituent, head movement was theorized to result obligatorily in adjunction to a head with the impossibility to extract either the adjoining element or the target element. More recent work on the nature of heads and head movement (Matushansky 2006) posits that it targets a specifier of the attracting head followed by an m-merger operation that results to an adjunction structure.

This incorporation strategy is evident in V2 languages, where the verb must appear in second position preceded by some phrasal constituent; This position is taken to be C. Roberts (2012) claims that C is 'pronominal' in V2 languages based on arguments on complementizer agreement and its ability to license *pro* and in that sense that it attracts V. C has a morphological selection feature in such languages that selects Agr^o. Agr incorporates with C; the verb has moved via head movement to T and then Agr and it therefore surfaces in the C position (Den Besten 1983). A similar proposal on the basis of features is given in Rizzi (1990), who claims that V2 languages have [+C +I] as the highest functional head in the clause, while non-V2 languages have [+C -I].

'Importantly, the generalization that the [+Agr] head forces a constituent to obligatorily occupy SpecC is also very relevant here. This idea is defined as a condition that "a head containing Agr must have a filled specifier" (Roberts 2012:56). So, Agr incorporates with C in V2 languages in such a way as to force the movement of some XP into SpecCP. In cases where the verb surfaces first in a V2 language, then a phonologically null category occupies SpecCP.

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(193) a. Komt je   broer   nog?
          comes your brother yet

<div align="right">(Den Besten 1983 (22a), p. 54)</div>

      b. Mocht je   nog geld   nodig   hebben
          might you yet necessary money need

<div align="right">(Den Besten 1983 (ii), Note 3, p. 121)</div>

Within the Germanic family, there are cases where an assumed Agr does not always incorporate with C. For example, when a wh-phrase occupies the SpecCP position in German or Swedish, V2 is not allowed.

(194) a. Wenn man dich fragt, wo   du gewesen seist
          if   one you asks where you been   have

      b. * Wenn man dich fragt, wo   seist du gewesen
            If   one you asks where have you been

      c. * Jag undrar om kommer han inter snart
            I   wonder if comes   he   not   soon

<div align="right">(Platzack 1987: 39)</div>

Roberts (2012) explains this difference by positing that C_{+wh} is an A'-head, while V2 C is an A-head. The A/A' status of heads is a matter of c-selection, in the sense that verbs (and other predicates) that take [+wh] complements require that their complements have an A'-head. If it is not an A-head, V2 does not appear. This empirical distinction also appears in Cypriot Greek which does not allow the verb to be structurally high, as will be argued, when a wh-word fills the Specifier of C. I will return to this point in more detail further below.

3.2.2 The EPP and Verb movement

Alexiadou and Anagnostopoulou (1998) propose a theory of V-to-I movement and its dependency on pro-drop subjects. VSO languages are pro-drop languages because pro-drop languages have the option to check the EPP feature through the verbal agreement morpheme. Verbal agreement in these languages includes a nominal element that makes the verbal agreement affixes, in Greek for example, having the same status as English pronouns. V-raising checks the EPP feature in the same way XP-raising does in non-pro-drop languages. This proposal implies that the EPP comes in two flavors: movement of XP vs. movement of a head X provides a typological account of the differences between languages.

The general idea in Alexiadou and Anagnostopoulou (1998) is based on the *Rich Agreement Hypothesis*, which states that rich agreement triggers V-to-I movement. This idea has been stated in different ways for the purposes of accounting for syntactic variation and it was based on the simple fact that subject-verb overt agreement was responsible for verb movement. This approach takes morphology to drive syntax (Bobaljik 2000b) in the way that the hypothesis was stated in Rohrbacher (1994) who refers to morphological paradigms and the overt marking of tense:

(195)   The Paradigm Verb Raising Correlate (Rohrbacher 1994:116)

A language has V to I raising if and only if in at least one number of one tense of the regular verb paradigm(s), the person features [1st] and [2nd] are both distinctively marked.

In other work, the morphological variation observed in languages with respect to Tense and Agreement depends on the number of projections available in that language. This is known as the *Split IP Parameter* and it refers to languages having an unsplit IP or an IP containing Agreement Phrases distinct from Tense (Bobaljik and Jonas 1996; Bobaljik and Thráinsson 1998). This was otherwise stated as:

(196) Morphological licensing of [Spec, TP]

A language licenses [Spec, TP] (in addition to [Spec, Agrs]) at S-Structure, iff it has independent tense and agreement morphology (Bobaljik and Jonas 1996: 230)

In languages with a split IP, the verb must raise out of the VP and into the IP complex. As Bobaljik and Thráinsson (1998) point out, the verb second (V2) effect is controlled for, we find that the verb remains in VP in English and the Mainland Scandinavian languages (Danish, Norwegian, Swedish), while the verb raises into the IP complex in Icelandic.

The data examined here, namely particular morphology on the verb depending on its position in the clause, do not provide direct evidence to the idea that pro-drop languages and rich morphology on the verb relate to EPP feature checking. Even if assuming head movement, V-to-T verb movement could be driven by independent reasons than those driving T-to-C movement. In other words, we cannot necessarily assume that different, simpler morphology on a verb positioned in a position other than T suggests that the RAH is wrong. It does seem more necessary though to have a system that predicts different morphological realization according to these positions, and not base the syntax of the verb on its morphology.

3.2.3   Verb Second in V-to-I movement

Verb-second in Germanic is parametrized for the choice of landing site for the verb. It can vary as to whether V2 is a result of V-to-C movement or V-to-I movement and this becomes relevant to any language investigation into verb movement as the actual landing position can be either I or C, even if the verb appears high. V2 in Yiddish does not show the main/embedded asymmetry as in German. Unlike German, Yiddish does not show a contrast between main and embedded clauses with respect to V2 in that the verb appears in the second position in all clauses.

(197)   a.   Max shikt$_i$ avek t$_i$ dos bukh.

        b.   Avrom gloybt   az   Max shikt$_i$ avek t$_i$ dos bukh
             Avrom believes that Max sends away   the book

                                                        (Diesing 1990:42)

For a language like Yiddish, one proposal is that the verb does not move to a position occupied by the complementizer. This is based on asymmetries between main and embedded clauses with respect to the interaction of V2, wh-phrases and topics (Diesing 1990). Yiddish, for example, shows topicalization in both main and embedded clauses:

(198)   a.   Dos bokh hot Max geleyent.
             the book has Max read
             'Max read the book.'

        b.   Ir   zolt   visn zayn, mayne libe kinderlekh, az   vayn ken men
             you-(pl) should know be   my   dear children   that wine can one
             makhn fun   troybn oykh.
             make   from grapes also
             'You should know my dear children that one can make wine from grapes also.'

        (Diesing 1990:44)

In addition, in matrix wh-questions the wh-word counts as the first element with respect to V2, but in embedded questions the wh-word does not count for V2.

(199)   a.   Vuhin   geyt ir?
             where-to go   you-(pl)
             'Where are you going?'

        b.   Ikh veys nit vuhin ir   geyt.
             I   know not where you go
             'I don't know where you-(pl) are going.'   (Diesing 1990:50)

These criteria have been used as evidence to show that the verb does not raise as high as C in Yiddish unlike other Germanic languages, a distinction often referred to as 'asymmetrical' vs. 'symmetrical' (for example, Yiddish) languages with respect to whether they show V2 not only in main clauses, but in all types of subordinate clauses. Similarly

to Yiddish, Icelandic has been argued to be a 'symmetrical' language showing low position of the verb in embedded clauses (Santorini 1994). Santorini specifically argues that the highest position for the verb is either I or C(omp) in Icelandic based on evidence from long distance subject extraction, which is impossible in Yiddish, but not Icelandic.

(200)   a. * Ver hot er moyre az   vet kumen?
               who has he fear   that will come
               'Who is he afraid will come?'   [Yiddish]

        b. Hver heldur pú að   sé   kominn til Reykjavíkur?
            who think you that was come   to Reykjavik
            'Who do you think came to Reykjavik?'   [Icelandic]

        (Santorini 1994:95)

A more thorough examination of language with V-to-I and languages without is given in Koeneman (2000), who argues that V to I verb movement takes place in languages where agreement affixes have argumental status. In a rich subject agreement paradigm, the affixes that are part of such a paradigm are syntactic arguments. Argumental affixes must be interpreted, meaning that they must be associated with a theta role. Verb movement is triggered because the external theta role is a property of VP rather than V. Hence, verb movement is required in order to bring Agr within VP's predicational domain.

3.2.4   V-to-C by Last Resort

This idea is explored for the so-called Wackernagel languages where verbs raise to C not because they need to satisfy any features of their own, since those have already been checked in IP, but to satisfy the requirement of 2P items. Languages that show this kind of verb movement should then not allow any X or XP allowing in first position in the presence of the verb in C. This movement is labeled as the W-FUNCTION (Rivero and Terzi 1995), that is, to be the required first position constituent for 2P-items. This

additional V-to-C movement applies only if there is no other first position constituent, which means that the process is last resort and subject to economy.

The Last Resort V-to-C movement is commonly assumed in West Iberian languages that show enclisis in root clauses, such as Galician and Portuguese. That is when instead of the sequence clitic-verb that would normally start a sentence, we have enclisis rather than proclisis. Languages of this type have the property of f, a head that projects above TP (Raposo and Uriagereka 2005). This head is a clitic and needs to fuse with an appropriate phonological host. The unmarked option for finding a host is to seek a host within the immediate domain of the prosodically defective head, that is to its right, namely the verb raised to T. The derivation takes a final stab at convergence: displacement of the verb to host the otherwise stranded clitic. This is stated clearly below:

> [...] the grammar literally seeks this option as a very last resort: the derivation
> has reached F and detects, within the FP projection, a problem. There is no
> way to meet the PF demands of (or the clitic cluster which includes it), to
> the right, to the left, or even with further placement upward in the phrase
> marker; it is stuck. At this point the desperate move of the derivation is to
> seek the closest accessible element within the active phase and bring it to the
> clitic rescue.   (Raposo and Uriagereka 2005:559)

The Tobler-Mussafia effect (Mussafia 1886; Tobler 1875) has a family resemblance with that behavior, in that the verb closest to (either an auxiliary or a main verb) joins the clitic. Since the clitic itself searches locally for a suitable host, this process is metaphorically called 'verb swallowing'. This is arguably then different from feature-driven verb movement in syntax, as the standard assumption for Germanic languages is.

Under this analysis the task is to design an output condition that (i) can be met by V to C and (ii) allows us to identify language-specific properties blocking V to C. One alternative view is given in Koeneman (2000), where T-to-C movement happens for

tense-related reasons with the C-position containing a Tense feature that is spelled out as a lexical element. Identified as the *Tense* condition, verb second is related to the scope properties of Tense.

(201)   The Tense condition

The Tense features of the predicate must be visible on a head that COMMANDS both the subject and the predicate.

Tense features are projected after movement in order to satisfy the Tense condition, a universal constraint requiring that the Tense features of the predicate take scope over the subject and the predicate, with embedded clauses differing in a subclass of Germanic languages in terms of how the Tense condition i satisfied.

3.2.5   Post-syntactic theories of V2

Alternative accounts to V-to-C movement are also given in the framework of Distributed Morphology as post-syntactic movement or raising (Adger 2006; Gribanova and Mikkelsen 2018; Harizanov and Gribanova 2016; Arregi and Pietraszko 2018). Adger (2006) proposes a post-syntactic morphological operation that creates the surface structure and feeds other morphological alternations such as allomorphy. Old Irish shows a VSO order, which by standard minimalist assumptions, shows verb raising out of the VP.

(202)   Beoigidir   in spirut <beoigidir> in   corp in   fecht so.
        vivifies-3SG.PRES the spirit   the body now
        'The spirit now vivifies the body.'

In addition to simple verbs like *beoigidir*, Old Irish also has verbs that are constructed from a verbal stem with a set of preceding preposition-like elements, traditionally termed as the preverbs. Such verbal forms are known as *compound* verbs and also appear clause-initially.

(203) As -ru   -bart   día friu-som ara celebartis   a   sollumnu.
      PV -perf -carry.3S.PRES god to.them that celebrate.3S.PRES.SUBJ his feasts
      'God has said to them they should celebrate his feasts.'   (Adger 2006:611)

One crucial difference is that simple and compound verbs inflect differently with simple verbs taking a set of agreement suffixes known as *absolute* inflection, while compound verbs are inflected with a set of suffixes, traditionally known as *conjunct* inflection. To explain the facts, Adger (2006) proposes that Local Dislocation takes place, which adjoins a head to another head to which it is strictly adjacent. This operation creates adjunction structures which are linearized according to the properties of the vocabulary elements involved. Adopting a Rizzian architecture of the left periphery, Force is a head that precedes X which hosts conjunct particles, preverbs or simple verbs. Force locally dislocates with X so that a simple verb is always followed by Force providing an insertion context for allomorphy of agreement.

(204)   Force X Y Z W $\rightarrow$ [X + Force] Y Z W

The idea is that this provides an insertion context for allomorphy of agreement, causing absolute agreement to surface.

If post-syntactic dislocation can give the correct word order and explain allomorphy, then it works as an alternative approach to head movement. In other words, it means that the verb always remains in T and the presence of a higher head to its local domain can trigger different morphological exponence. In order to argue for the existence of verb movement in Cypriot Greek, the following section explores the empirical evidence from word order and the distribution of the verb with other elements in the clause.

3.3 Word order and verb position in Cypriot Greek

3.3.1 Main and Embedded clauses

The neutral order of main clauses in Cypriot Greek, which only has finite verbs and lacks infinitives, can still vary. In Cypriot Greek, the verb can appear clause-initially with the subject immediately following as in (205a) or appearing in a clause-final position, as in (205b). A word order of subject-verb-object is also an option, as in (205c). Any other combination is only acceptable with particular intonation on the object *ti Marikku* in cases where the verb appears in a clause-final position. The comma indicates an intonational break (for a similar comparison see Giannakidou 1998 for Standard Modern Greek).

(205) a. Efilisen   o   Kostis   ti   Marikku.
           kiss.PAST.PERF.3sg the.NOM Kostis.NOM the.ACC Mariku.ACC
           'Kostis kissed Marikku.'

       b. Efilisen   ti   Mariku   o   Kostis.
           kiss.PAST.PERF.3sg the.ACC Marikku.ACC the.NOM Kostis.NOM

       c. O   Kostis   efilisen   ti   Marikku.
           the.NOM Kostis.NOM kiss.PAST.PERF.3sg the.ACC Mariku.ACC

       d. O   Kostis,   ti   Mariku,   efilisen.
           the.NOM Kostis.NOM the.ACC Marikku.ACC kiss.PAST.PERF.3sg

       e. Ti   Marikku,   o   Kostis   efilisen.
           the.ACC Mariku.ACC the.NOM Kostis.NOM kiss.PAST.PERF.3sg

       f. Ti   Marikku,   efilisen   o   Kostis.
           the.ACC Mariku.ACC kiss.PAST.PERF.3sg the.NOM Kostis.NOM

The same word orders, namely VOS, VSO, SVO, appear in the presence of an auxiliary verb, like *iʃen* 'had'. Again, any other orders requires special intonation for the sentences to be grammatical.

(206) a. Iʃen   filisi   o   Kostis   ti   Marikku.
           had.PAST.PERF.3sg kiss.PART the.NOM Kostis.NOM the.ACC Marikku.ACC
           'Kostas had kissed Marikku.'

b. Iʃen filisi ti Marikku o Kostis.
   had.PAST.PERF.3sg kiss.PART the.ACC Marikku.ACC the.NOM Kostis.NOM

c. O Kostis iʃen filisi ti Marikku.
   the.NOM Kostis.NOM had.PAST.PERF.3sg kiss.PART the.ACC Marikku.ACC

d. O Kostis, ti Mariku, iʃen filisi.
   the.NOM Kostis.NOM the.ACC Marikku.ACC had.PAST.PERF.3sg kiss.PART

e. Ti Marikku, o Kostis iʃen filisi.
   the.ACC Mariku.ACC the.NOM Kostis.NOM had.PAST.PERF.3sg kiss.PART

f. Ti Marikku, iʃen filisi o Kostis.
   the.ACC Mariku.ACC had.PAST.PERF.3sg kiss.PART the.NOM Kostis.NOM

Separating the auxiliary verb from the main verb by having the subject or the object intervening yields ungrammaticality, as in the following cases.

(207) a. * Iʃen o Kostis filisi ti Marikku.
         had.PAST.PERF.3sg the.NOM Kostis.NOM kiss.PART the.ACC Marikku.ACC
         (Intended. 'Kostis had kissed Marikku)'

b. * Iʃen ti Marikku filisi o Kostis
     had.PAST.PERF.3sg the.ACC Marikku.ACC kiss.PART the.NOM Kostis.NOM
     .

Even though the verb position in Cypriot Greek appears to be higher than T, namely C, it does not show similar distribution of the verb in other positions as one usually expects in other V-to-C languages, like Germanic. For example, the verb in a clause-final position is not grammatical for speakers, but special intonation makes sentences, as in (208d-208e), acceptable.

(208) a. * Ishen o Kostis ti Marikku filisi.
         had.PAST.PERF.3sg the.NOM Kostis.NOM the.ACC Marikku.ACC kiss.PART

b. * Ishen ti Marikku o Kostis filisi.
     had.PAST.PERF.3sg the.ACC Marikku.ACC the.NOM Kostis.NOM kiss.PART

c. * O Kostis ishen ti Marikku filisi.
     the.NOM Kostis.NOM had.PAST.PERF.3sg the.ACC Marikku.ACC kiss.PART

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d. * O   Kostis   ti   Marikku   ishen   filisi.
   the.NOM Kostis.NOM the.ACC Marikku.ACC had.PAST.PERF.3sg kiss.PART

e. * Tin   Marikku   o   Kostis   ishen   filisi.
   the.ACC Marikku.ACC the.NOM Kostis.NOM had.PAST.PERF.3sg kiss.PART

Compare, for example, the Dutch sentences below, where the verb can indeed surface in a final position, while the auxiliary verb surfaces higher in C.

(209)   a. Jan   heeft Marie gekust.
            John has   Mary kissed
            'John (has) kissed Mary.'

        b. * Jan   heeft gekust Marie.
             John has   kissed Mary

        c. * Jan   Marie heeft gekust.
             John Mary has   kissed

        d. * Jan   Marie gekust heeft
             John Mary kissed has

                                        (Hoekstra and Zwart 1997:23)

With respect to embedded word order in a particular type of embedded clause, namely *na*-clauses, the following examples show that the subject can surface in a fronted position preceding the complementizer *na* or in the VP following the object. Embedded word order is subject to underlying syntactic structures and the merging site of the complementizer, which is a discussion I will return to in Section 3.6.1.

(210)   a. O   Kostis   iθelen   o   Yannis   na
            the.NOM Kostis.NOM want.PAST.PERF.3sg the.NOM Yannis.NOM to
            filisi   ti   Marikku.
            kiss.NONPAST.PERF.3sg the.ACC Mariku.ACC
            'Kostis wanted Yannis to kiss Marikku.'

b. Iθelen   o   Kostis   o   Yannis   na
want.PAST.PERF.3sg the.NOM Kostis.NOM the.NOM Yannis.NOM to
filisi   ti   Marikku.
kiss.NONPAST.PERF.3sg the.ACC Mariku.ACC

c. O   Kostis   iθelen   ti   Marikku   na
the.NOM Kostis.NOM want.PAST.PERF.3sg the.ACC Mariku.ACC to
filisi   o   Yannis.
kiss.NONPAST.PERF.3sg the.NOM Yannis.NOM

d. Iθelen   o   Kostis   ti   Marikku   na
want.PAST.PERF.3sg the.NOM Kostis.NOM the.ACC Mariku.ACC to
filisi   o   Yannis.
kiss.NONPAST.PERF.3sg the.NOM Yannis.NOM

e. iθelen   na filisi   ti   Marikku
want.PAST.PERF.3sg to kiss.NONPAST.PERF.3sg the.ACC Mariku.ACC
o   Kostis
the.NOM Kostis.NOM

f. iθelen   na filisi   o   Kostis
want.PAST.PERF.3sg to kiss.NONPAST.PERF.3sg the.NOM Kostis.NOM
ti   Marikku
the.ACC Mariku.ACC

Presence of the auxiliary verbs also does not change the different positions the object can occupy.

(211)   a. O   Kostis   ishen   prospathisi na
the.NOM Kostis.NOM had.PAST.PERF.3sg try.PART   to
filisi   ti   Marikku.
kiss.NONPAST.PERF.3sg the.ACC Mariku.ACC

b. O   Kostis   ishen   prospathisi ti   Mariku
the.NOM Kostis.NOM had.PAST.PERF.3sg try.PART   the.ACC Mariku.ACC
na filisi.
to kiss.NONPAST.PERF.3sg

c. * O   Kostis   ishen   ti   Marikku   prospathisi
the.NOM Kostis.NOM had.PAST.PERF.3sg the.ACC Mariku.ACC try.PART
na filisi.
to kiss.NONPAST.PERF.3sg

d. Ti   Marikku   o   Kostis   ishen   prospathisi
the.ACC Mariku.ACC the.NOM Kostis.NOM had.PAST.PERF.3sg try.PART
na filisi.
to kiss.NONPAST.PERF.3sg

Despite the similarities with Germanic languages when it comes to the high verb position in some environments, Cypriot Greek remains quite different with respect to the general clausal properties. Unlike V2 in Dutch, for example, the subject and the finite verb do not have to be adjacent in main clauses:

(212)   a. * Jan altijd kust Marie.
              John always kisses Mary

         b. Jan kust altijd Marie.
            John kisses always Mary
            'John always kisses Mary.'

(213)   a. O   Kostis   panta fila   ti   Marikku
            the.NOM Kostis.NOM always kiss.PAST.PERF.3sg the.ACC Marikku.ACC
            'Kostis always kisses Marikku'

         b. O   Kostis   fila   panta ti   Marikku
            the.NOM Kostis.NOM kiss.PAST.PERF.3sg always the.ACC Marikku.ACC
            'Kostis always kisses Marikku (not somebody else)'

In these examples, *always* takes scope over the event of kissing only in the first example. In the second, the meaning shifts to be about the individual that is always kissed as opposed to any other possible individual. Nevertheless, the subject and the verb do not hold a strict adjacent relation to each other.

This section has presented the main word order in the clause of Cypriot Greek but this description is incomplete without a more detailed investigation of the position of the verb with respect to other elements in the clause, which is discussed in the section that follows.

3.4 Word Order Patterns

3.4.1 Verb-Clitic and Clitic-Verb

In this investigation of the position of the verb and its relevance to morphological realization, the tests will vary depending on the language studied. The most straightforward way should be the position of the verb with respect to the subject, as in the case of some Old Romance varieties. Old Romance languages are known as relaxed V2 in that they allow the verb to move to C in specific contexts. The word order is known as relaxed since Old Romance languages do not have a strict word order like Old Germanic languages do. Old Italian, for example, is a relaxed V2 order that displays subject-verb inversion which is no longer available in modern Italian.

(214) a. Piú atteso si puó colui che favella rendere l' uditore
        more expected REFL can who that talks make the listener
        'The one who talkscan make the audience more interested'   (Old Italian)

   b. Piú interessato puó (*il parlante) rendere (*il parlante) il pubblico?
       more interested can (the speaker) make (the speaker) the audience
       (il parlante)
       (the speaker)
       'The speaker can make the audience more interested.'   (Modern Italian)

In Old Italian, the verb moves to C in root clauses displaying V-to-C movement and even though the verb is not in second position, all the preverbal elements must be in some position in the CP.

Since Cypriot Greek is pro-drop, it is not possible to test the position of the verb with respect to the subject. Instead, another test is available and that is the position of the object clitic with respect to the verb.

The position of the verb in Cypriot Greek depends on the syntactic environment, immediately identified by clitic placement, as summarized in the tables below. Generally, there are three possible groups that capture the word order variation according to the

syntactic environment: the first is the case where the verb precedes the object clitic, the second when it follows the object clitic and the third the one whether it can either precede or follow. The matrix clause in Cypriot Greek shows a verb-clitic order, as shown in the following example.

(215) a. Iðen   ton.
          see.PAST.PERF.3sg him.CLI
          'He saw him.'

       b. * Ton   iðen.
            him.CLI see.PAST.PERF.3sg

In (215a), the verb has moved to a structurally higher position, ideally C and in the cases that pattern like (215b), the verb would remain in T. Head movement applies from T to C, as illustrated below.

(216)
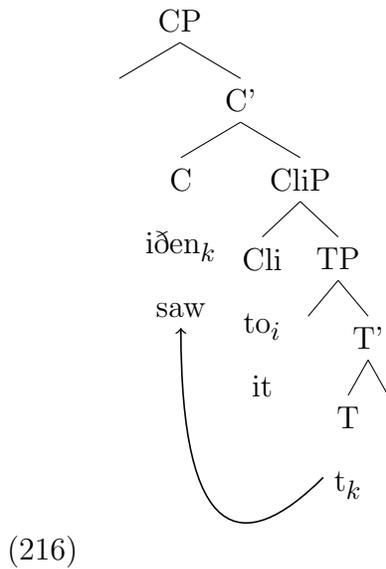
I will assume that head movement is the result of feature-driven movement. In the case of Cypriot Greek, V-to-C is the result of a strong feature on C that attracts the verb. There are different flavors of C: one type attacts the verb, another type attracts phrases to its specifier and another type does not trigger any movement but simply hosts complementizers. Summarizing then, I am assuming the following C's in terms of movement triggers (or not):

(217) a. C$_{[T*]}$

     b. C$_{[XP[wh]*]}$

     c. C

The Cypriot Greek C also comes with different selectional properties since it can select a TP, a functional Clitic phrase projection, another CP or negation.Other environments that show the same word order are polar questions (218a), (positive) imperatives (218c), embedded complementizerless clauses (218e) and external negation (218g).

(218) a. Iðen   ton?
            see.PAST.PERF.3sg him.CLI
            'Did she see him?'

     b. * Ton   iðen?
            him.CLI see.PAST.PERF.3sg

     c. ðe   ton.
            see.IMPER him.CLI
            'See him!'

     d. * Ton   ðe.
            him.CLI see.IMPER

     e. Nomizi iðen   ton.
            think   see.PAST.PERF.3sg him.CLI
            'She thinks she saw him.'

     f. * Nomizi ton   iðen.
            think   him.CLI see.PAST.PERF.3sg

     g. Endʒe iðe   ton.
            NOT   see.PAST.PERF.3sg him.CLI
            'It is not the case that I saw him.'

     h. * Endʒe ton   iðe.
            NOT   him.CLI see.PAST.PERF.3sg

On the contrary, the verb stays low in most other cases, such as negation (219a), *na*-clauses (219c), negative imperative (219e), different types of embedded clauses (219g) and (219i) and wh-questions

(219) a. En ton iðen.
NEG him.CLI see.PAST.PERF.3sg
'He didn't see him.'

b. * En iðen ton.
NEG see.PAST.PERF.3sg him.CLI

c. θeli na ton ði.
want.3SG na him.CLI see.NONPAST.PERF.3sg
'She wants to see him.'

d. * θeli na ði ton.
want.3SG na see.NONPAST.PERF.3sg him.CLI

e. Men ton ði.
not.NEG him.CLI see.NONPAST.PERF.3sg
'Don't let her see him.'

f. * Men ði ton.
not.NEG see.NONPAST.PERF.3sg him.CLI

g. An ton ðis.
if him.CLI see.NONPAST.PERF.2sg
'If you see him.'

h. * An ðis ton.
if see.NONPAST.PERF.2sg him.CLI

i. Aman ton ðis.
when him.CLI see.NONPAST.PERF.2sg
'When you see him.'

j. * Aman ðis ton.
when see.NONPAST.PERF.2sg him.CLI

k. Pkjos ton iðen?
who him.CLI see.NONPAST.PERF.3sg
'Who saw him?'

l. * Pkjos iðen ton?
who see.NONPAST.PERF.3sg him.CLI

Certain embedded complementizers show optionality with respect to the position of
the verb, as in cases with *pos* (220a), *oti* (220c) and *epiði* (220e).

146

(220) a. Akusa pos to   iðes.
          hear   that it.CLI see.PAST.PERF.2sg
          'I heard that you saw it.'

       b. Akusa pos iðes   to.
          hear   that see.PAST.PERF.2sg it.CLI

       c. Akusa oti to   iðes.
          hear   that it.CLI see.PAST.PERF.2sg
          'I heard that you saw it.'

       d. Akusa oti iðes   to.
          hear   that see.PAST.PERF.2sg it.CLI

       e. Epiði   to   iðes.
          because it.CLI see.PAST.PERF.2sg
          'Because you saw it.'

       f. Epiði   iðes   to.
          because see.PAST.PERF.2sg it.CLI

The tables below summarize these examples and give a more complete list of the environments that belong to each word order. The first table shows that the verb precedes the clitic, contrasted with the verb below where it follows the clitic.

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Environment	Verb	Object Clitic	Verb	Example
GROUP A				
Matrix	V	Cl		**Iðe** ton. 'She saw him'
Embedded (no complementizer)	V	Cl		Nomizi **iðe** ton. 'She thinks she saw him'
Polar questions	V	Cl		**Iðe** ton? 'Did she see him?'
(Positive) imperative	V	Cl		**ðe** ton. 'Look at him'
Topics	V	Cl		Ton Kostin **iðe** ton. 'Kostis, she saw him'
ðioti 'because'-clauses	V	Cl		ðioti **iðe** ton. 'Because she saw him'
Negative *endʒe* 'it is not the case that'	V	Cl		Endʒe **iðe** ton. 'She did not see him'

Table 3.2: Verb-Clitic word order

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
Auxiliaries		Cl	V	*iʃe* ton **ði**. 'She had seen him'
Na-clauses		Cl	V	na ton **ði**. 'To see him'
Negation		Cl	V	En ton **iðe**. 'She didn't see him'
(Negative) imperative		Cl	V	Men ton **ði**. 'Don't see him'
Overt focus complementizer *embu*		Cl	V	Ton Yanni embu ton **iðe**. 'Yanni, she saw him'
An-clauses		Cl	V	An ton **ði**. 'If she sees him'
Optative *as*		Cl	V	As ton **ði**. 'Let her see him'
Relative clause		Cl	V	I kufi pu ton **iðe**. 'The snake that saw him'
Apu 'whoever'		Cl	V	Apu ton **ði** protos... 'The one who sees him first'
When-clauses		Cl	V	Pu ton **iðe**. 'When he saw him'
When-clauses		Cl	V	Aman ton **ði**. 'When she saw him'
pu-clauses 'that'		Cl	V	θimume pu ton **iðes**. 'I remember that you saw him'
Subject wh-questions		Cl	V	Pkjos ton **iðe**? 'Who saw him?'
Object wh-questions		Cl	V	Nambu ton **iðe**? 'What saw him?'
Why wh-questions		Cl	V	Jati ton **iðe**? 'Why did it see him?'
Where wh-questions		Cl	V	Pu ton **iðe**? 'Where did it see him?'

Table 3.4: Clitic-Verb word order

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
When wh-questions		Cl	V	Pote ton **iðe**? 'When did it see him?'
How wh-questions		Cl	V	Pos ton **iðe**? 'How did it see him?'
Pothen-questions 'where from'		Cl	V	Poθen ton **iðe**? 'When did it see him?'
Embedded subject wh-questions		Cl	V	Ksero pkjos ton **iðe**. 'I know who saw him'
Embedded object wh-questions		Cl	V	Ksero nambu ton **iðe**. 'I know what saw him'
Embedded *why* wh-questions		Cl	V	Ksero jati ton **iðe**. 'I know why it saw him'
Embedded *where* wh-questions		Cl	V	Ksero pu ton **iðe**. 'I know where it saw him'
Embedded *when* wh-questions		Cl	V	Ksero pote ton **iðe**. 'I know when it saw him'
Embedded *how* wh-questions		Cl	V	Ksero pos ton **iðe**. 'I know how it saw him'
Embedded *pothen*-questions 'where from'		Cl	V	Ksero pothen ton **iðe**. 'I know where he saw him from'

Table 3.6: Clitic-Verb word order

A mixed group where the verb precedes or follows the clitic appears with certain embedded complementizers. Some examples are given in the Table below.

Environment	Verb	Object Clitic	Verb	Example
GROUP C				
Pos-clauses 'that'	{V}	Cl	{V}	Emaθa pos to **iðen**. Emaθa pos **iðen** to. 'I learned that she saw it'
Oti-clauses 'that'	{V}	Cl	{V}	Ksero oti to **iðen**. Ksero oti **iðen** to. 'I know that she saw it'
Afu-clauses 'after'	{V}	Cl	{V}	Estamatisa afu to **iðen**. Estamatisa afu **iðen** to. 'I stopped after she ' saw it
Epiði-clauses 'because'	{V}	Cl	{V}	Estamatisa epiði to **iðen**. Estamatisa epiði **iðen** to. 'I stopped because she saw it'

Table 3.8: Verb-Clitic/Clitic-verb word order

The tables below also show the possibilities with a DP, which can be identified as a topic in some cases compared to the object clitic that has a fixed position in the clause. The position of the subject is independent from the position of the verb, which can occupy the same position in the examples given below.

Environment	Verb	Object Clitic	Verb	Example
GROUP A				
Matrix	V	Cl		**Iðe** ton o Yannis.
Matrix	V	Cl		O Yannis **iðe** ton.
				'Yannis saw him.'
Embedded (no complementizer)	V	Cl		Nomizo o Yannis **iðe** ton.
Embedded (no complementizer)	V	Cl		Nomizo **iðe** ton o Yannis.
				'I think that Yannis saw him.'
Polar questions	V	Cl		**Iðe** ton o Yannis?
Polar questions	V	Cl		O Yannis **iðe** ton?
				'Did Yannis see him?'
Topics	V	Cl		O Yannis ton Kostin **iðe** ton.
Topics	V	Cl		Ton Kostin **iðe** ton o Yannis.
				'Kostis, Yannis saw him.'
ðioti 'because'-clauses	V	Cl		ðioti **iðe** ton o Yannis.
ðioti 'because'-clauses	V	Cl		ðioti o Yannis **iðe** ton.
				'Because Yannis saw him.'
Auxiliaries	V	Cl		*iʃe* to **ði** o Yannis.
Auxiliaries	V	Cl		O Yannis *iʃe* to **ði**.
				'Yannis had seen him.'

Table 3.10: Verb-Clitic and subject position

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
Na-clauses		Cl	V	Na ton **ði** o Yannis.
Na-clauses		Cl	V	O Yannis na ton **ði**.
				'Yannis to see him.'
Negation		Cl	V	En ton **iðe** o Yannis.
		Cl	V	O Yannis en ton **iðe**.
				'Yannis did not see him.'
(Negative) imperative		Cl	V	Men ton **ði** o Yannis.
		Cl	V	O Yannis men ton **ði**.
				'Don't let Yannis see him.'
Overt focus complementizer *embu*		Cl	V	*I Maria ton Yanni embu ton **iðe**.
		Cl	V	Ton Yanni embu ton **iðe** i Maria.
				'Yannis Maria saw him.'
An-clauses		Cl	V	An ton **ði** o Yannis.
		Cl	V	An o Yannis ton **ði**.
				'If Yannis saw him.'
Optative *as*		Cl	V	As ton ði o Yannis.
				O Yannis as ton ði.
				'Let Yannis saw him.'
When-clauses		Cl	V	Pu ton **iðe** o Yannis.
				O Yannis pu ton iðe.
				'When Yannis saw him.'
When-clauses		Cl	V	Aman ton **ði** o Yannis.
When-clauses		Cl	V	O Yannis aman ton **ði**.
				'When Yannis saw him.'

Table 3.12: Clitic-Verb and subject position

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
pu-clauses 'that'		Cl	V	θimume pu o Yannis ton **iðe**.
		Cl	V	θimume pu ton **iðe** o Yannis.
				'I remember that Yannis saw him.'
Why wh-questions		Cl	V	Jati ton **iðe** o Yannis?
		Cl	V	O Yannis jati ton **iðe**?
				'Why did Yannis see him?'
Where wh-questions		Cl	V	O Yannis pu ton **iðe**?
		Cl	V	Pu ton **iðe** o Yannis?
				'Where did Yannis see him?'
When wh-questions		Cl	V	Pote ton **iðe** o Yannis?
		Cl	V	O Yannis pote ton **iðe**?
				'When did Yannis see him?'
How wh-questions		Cl	V	Indalos ton **iðe** o Yannis?
		Cl	V	O Yannis indalos ton **iðe**?
				'How did Yannis see him?'
Pothen-questions 'where from'		Cl	V	Pothen ton **iðen** o Yannis?
		Cl	V	O Yannis pothen ton **iðen**?
				'Where did Yannis see him from?'
Embedded *why* wh-questions		Cl	V	Ksero jati ton **iðen** o Yannis
		Cl	V	Ksero o Yannis jati ton **iðen**
				'I know why Yannis saw him'
Embedded *where* wh-questions		Cl	V	Ksero pu ton **iðen** o Yannis
		Cl	V	Ksero o Yannis pu ton **iðen**
				'I know where Yannis saw him'

Table 3.14: Clitic-Verb and subject position

Embedded	Cl	V	Ksero pote ton **iðen** o Yannis
when wh-questions	Cl	V	Ksero o Yannis pote ton **iðen**
			'I know when Yannis saw him'
Embedded	Cl	V	Ksero pos ton **iðen** o Yannis
how wh-questions	Cl	V	Ksero o Yannis pos ton **iðen**
			'I know how Yannis saw him'

<div align="center">Table 3.16: Clitic-Verb and subject position</div>

Environment	Verb	Object Clitic	Verb	Example
GROUP C				
Pos-clauses 'that'		Cl	{V}	Emaθa pos to **iðen** o Yannis 'I learned that Yannis saw it'
		Cl	{V}	Emaθa pos o Yannis to **iðen** 'I learned that Yannis saw it'
	{V}	Cl		Emaθa pos **iðen** to o Yannis 'I learned that Yannis saw it'
	{V}	Cl		Emaθa pos o Yannis **iðen** to 'I learned that Yannis saw it'

<div align="center">Table 3.18: Verb-Clitic/Clitic-verb word order</div>

Oti-clauses 'that'		Cl	{V}	Ksero oti to **iðen** o Yannis 'I know that that Yannis saw it'
		Cl	{V}	Ksero oti o Yannis to **iðen** 'I know that that Yannis saw it'
	{V}	Cl		Ksero oti **iðen** to o Yannis 'I know that that Yannis saw it'
	{V}	Cl		Ksero oti o Yannis **iðen** to 'I know that that Yannis saw it'
Afu-clauses 'after'		Cl	{V}	Estamatisa afu to **iðen** o Yannis 'I stopped after Yannis saw it'
		Cl	{V}	Estamatisa afu o Yannis to **iðen** 'I stopped after Yannis saw it'
	{V}	Cl		Estamatisa afu **iðen** to o Yannis 'I stopped after Yannis saw it'
	{V}	Cl		Estamatisa afu o Yannis **iðen** to 'I stopped after Yannis saw it'

Table 3.20: Verb-Clitic/Clitic-verb word order

156

Because-clauses	Cl	{V}	Ethimosa epiði to **iðen** o Yannis
			'I got angry because Yannis saw it'
	Cl	{V}	Ethimosa epiði o Yannis to **iðen**
			'I got angry because Yannis saw it'
	{V}	Cl	Ethimosa epiði **iðen** to o Yannis
			'I got angry because Yannis saw it'
	{V}	Cl	Ethimosa epiði o Yannis **iðen** to
			'I got angry because Yannis saw it'

Table 3.22: Verb-Clitic/Clitic-verb word order

Standard assumptions on Romance clitics are that these adjoin high above the TP (Kayne 1991) always cliticized to a host. With respect to Standard Modern Greek particularly, Mavrogiorgos (2010) argues that clitics attach to their host low in the clause within the vP. This position is evident from floating quantifiers in Standard Modern Greek which can adjoin within the vP in a position between V and v.

(221)   a. Ta pedhia ta   echi   idhi   dhi   o
            the children them have.NONPAST.IMPERF.3sg already see.PRTL.3sg the
            Nikos ola.
            Nikos all
            'Nick has already seen all the children.'

        b. Tis   elise   o Nikos oles me   apistefti taxitita.
            them solve.PAST.PERF.3sg the Nikos all   with incredible speed
            'Nick solved them all incredibly fast.'   (Mavrogiorgos 2010: 128)

The following cases are examples where the quantifier is assumed to be in an object shift position, suggesting that this is also a landing position for the movement of the clitic.

157

(222) a. Ta pedhia ta   exi   dhi   ola o   Nikos.
          the children them.CLI have.NONPAST.IMPERF.3sg see.PART all the Nikos
          'Nikos has seen all the children.'

       b. Ta pedhia ta   exi   ola dhi   o   Nikos.
          the children them.CLI have.NONPAST.IMPERF.3sg all see.PART the Nikos

       c. Tis   elise   oles o   Nikos me   apistefti taxitita.
          them.CLI solve.PAST.PERF.3sg all   the Nikos with great   speed
          'Nikos did all of them with great speed.'   (Mavrogiorgos 2010: 129)

The floating quantifier, however, does not appear in an object shift position in Cypriot Greek, being different in this way from Standard Modern Greek.

(223) a. Ta mora   ishe   ta   dhi   ulla o   Kostis.
          the children have.NONPAST.IMPERF.3sg them.CLI see.PRTL all   the Kostis
          'Kostis had already seen all the children.'

       b. * Ta mora   ishe   ta   ulla dhi   o
            the children have.NONPAST.IMPERF.3sg them.CLI all   see.PRTL.3sg the
          Kostis.
          Kostis

       c. Ekame   tes   ulles o   Kostis me   apistefti taxitita.
          do.PAST.PERF.3sg them.CLI all   the Kostis with great   speed.

V-to-T movement is assumed in Mavrogiorgos where the clitic is merged as a DP/D in the complement position of the root and then attracted to the external specifier of v*. With the creation of an A'-chain the clitic incorporates to the verb and moves along with it to T. Incorporation involves morphosyntactic restructuring, with intrusion of the clitic to the edge of its host and merger of the feature matrices of the clitics and v*.

This will of course not be necessary if the assumption of the clitic in a low position is not adopted. For the purposes here, I will assume that the clitic moves from its base position to a functional position above TP identified as CliP.

```
              CliP
             /    \
          Cli      TP
         it_k      /  \
                      T'
                     /  \
                    T    vP
                        /  \
                      ...   VP
                           /  \
                         t_k   ...
```
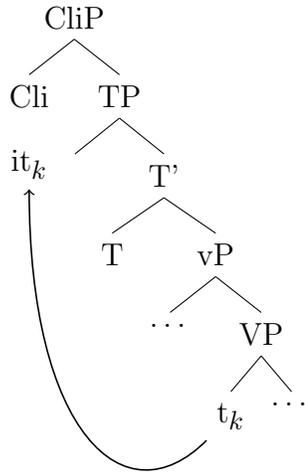
(224)

Group A verbs show a V-Cl order, group B verbs show a Cl-V order and group C verbs can show either order. All of the different word orders are the result of the different positions that the verb can occupy in Cypriot Greek (Agouraki 1997; Mavrogiorgos 2010; Terzi 1999). The enclisis in matrix clauses is a good indication that the verb is higher in the structure and it moves there from a lower position unless some element in the syntax blocks this movement. Even though the possibility of preverbal subjects may indicate that the verb is in T, the combination of subjects and object clitics shows that the verb occupies the same position as in cases without the subject. This then suggests that the subjects are in a higher position, possibly a TopicP.

(225)

```
              CP
              |
              C'
         ┌────┴────┐
         C        CliP
       iðenₖ    ┌──┴──┐
       saw     Cli    TP
               toᵢ  ┌──┴──┐
               it  o Yannis  T
                            /\
                           tₖ
```

(226)

```
                TopP
          ┌──────┴──────┐
       o Yannisₙ        CP
        John        ┌───┴───┐
                    C       C'
                        ┌───┴───┐
                        C      CliP
                      iðenₖ  ┌──┴──┐
                      saw   Cli    TP
                            toᵢ  ┌──┴──┐
                            it   tₙ    T
                                      /\
                                      T
                                      tₖ
```
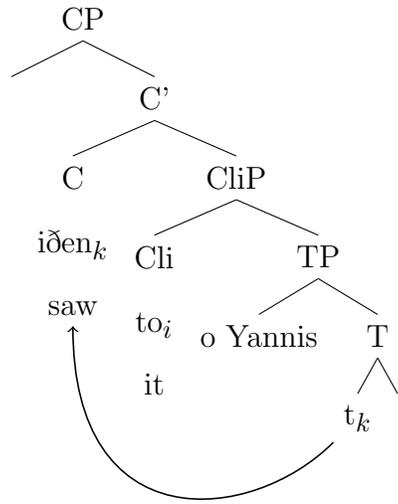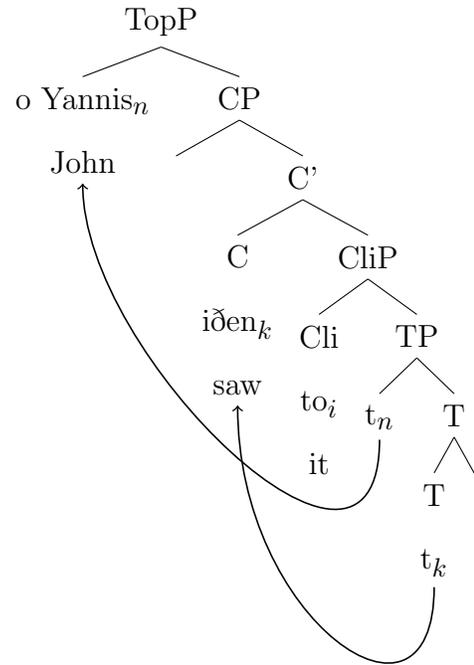
The trees above give the derivations for Verb-Clitic orders, even in the presence of a preverbal subject. The verb always moves to C, unless head movement is not allowed. The clitic-verb order suggests that the verb stays in T, something that results from the obstruction of head movement to C as in the cases of a negation head that does not allow the verb to move to it (for example, disallows incorporation (Baker 1988)).

```
                        TopP
                   ╱         ╲
          o Yannisₙ          CP
             John         ╱      ╲
                         C        C'
                              ╱      ╲
                             C        Neg
                                  ╱        ╲
                                 Neg        CliP
                                  en     ╱      ╲
                                 not    Cli      TP
                                       toᵢ   tₙ  ╱   ╲
                                        it           T
                                                  ╱     ╲
                                                 T        vP
                                              iðenₖ    ╱    ╲
                                               saw   tₙ   ...
```
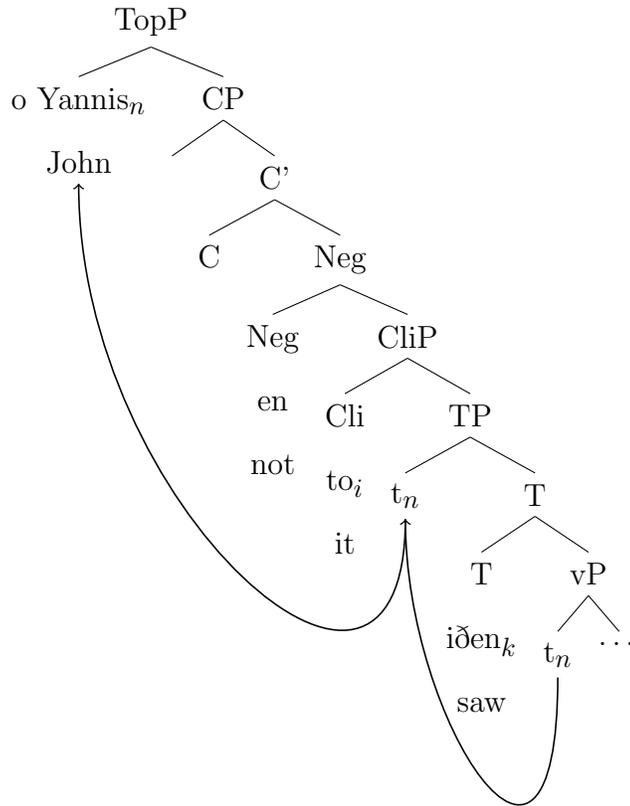
(227)

The optionality in verb-clitic and clitic-verb orders will then be predicted by optionality in one of these two derivations regarding the position of the verb. I will return to this optionality after examining the distribution of complementizers and other elements in the sections to follow.

3.5 Verb movement

If Cypriot Greek shows T-to-C movement, even in matrix clauses, it resembles a very similar structure to Germanic languages. As is well-known, German shows a very clear complementary distribution between the complementizer and the finite verb in the embedded environment.

(228) a. Peter behauptet, dass Johann Maria küsst.
          Pete claims   that John   Mary kisses-SUBJ
          'Pete claims that John kisses Mary'

       b. * Peter behauptet, dass Johann küsst Maria.
            Pete claims   that John   kisses Mary

The phenomenon only appears in the presence of a complementizer, also known as the embedded Germanic non-V2. When a complementizer is not present the verb still surfaces in the second position instead of clause-finally.

(229) a. Peter behauptet, Johann küsst Maria.
          Pete claims   John   kisses Mary
          'Pete claims that John kisses Mary.'

       b. * Peter behauptet, Johann Maria küsst.
            Pete claims   John   Mary kiss

The well-known phenomenon was explained as I-to-C movement of the verb (Den Besten 1983 among many others) in assuming that the finite verb in sentences with no complementizer occurs in the position of C, in which the complementizer would have otherwise occured. The position of the verb and the subject in the embedded clause is another diagnostic that shows the underlying syntax involved since other elements at the beginning of the clause change the order of the elements. Cypriot Greek, unlike V2 languages, does not show such a robust pattern in embedded clauses headed by an overt complementizer. As shown in the tables above, we do find that the word order can be different, as in the example below:

(230) a. Akusa   oti egorases   to.
          hear.PAST.PERF.1sg that buy.PAST.PERF.2sg it.CLI
          'I heard that you bought it.'

       b. Akusa   oti to   egorases.
          hear.PAST.PERF.1sg that it.CLI buy.PAST.PERF.2sg

The puzzle then is the extent to which the underlying clausal structure for Cypriot Greek should resemble that of certain Germanic varieties that allow the verb to be high in

all environments. As also well-known, there are Germanic varieties that allow embedded V2 in the presence of complementizers, showing a similar 'optionality' in verb position as Cypriot Greek. The verb in the example below could be either in C or I or it can be in V, according to Vikner (1994).

(231)   a. Tróndur segði, at   dreinginir vóru als   ikki ósamdir.
                Tróndur said   that (boys-the) were at-all not disagreed
                'Tróndur said that the boys did not disagree at all.'

        b. Tróndur segði, at   dreinginir als   ikki vóru ósamdir.
                Tróndur said   that (boys-the) at-all not were disagreed

<div align="right">(Faroese: Vikner 1994:123)</div>

Therefore, the fact that embedded V2 is possible in spite of the presence of an overt complementizer *at* might be a problem for the analysis of V2 as movement of the finite verb to C. It follows then that there must be two C positions to explain the simultaneous presence of a complementizer and a verb. Embedded V2 is also possible in all embedded declarative sentences in Icelandic, which differs in that respect from other Germanic varieties.

Based on these Germanic varieties, one way to test for the verb position then is to explore the possibility of a CP-recursion structure in embedded clauses. To do that, I review some general properties of the left periphery structure below. In addition to the distribution of the verb in embedded environments, I will discuss the distribution of complementizers with nominalized clauses. Additional evidence for two CPs comes from movement of the verb in long distance extraction environments and contexts where negation is merged high and does not block head-to-head movement. All of these cases are presented in more detail in the sections that follow.

3.5.1 Left periphery of Cypriot Greek

The goal of this section is only to provide the distribution of other elements in the left periphery in order to have a better understanding of the position of the verb. For this, any elaborated discussion on the properties of these elements and their features is not provided here. The examples focus mainly on two complementizers *oti* and *pu*. Both of them are indicative complementizers (Giannakidou 1998; 2009; 2017) that also appear in Standard Modern Greek:

(232) a. O   Pavlos kseri   **oti** efije   i
           the Paul   know.NONPAST.IMPERF.3sg that leave.PAST.PERF.3sg the
           Roxani.
           Roxani
           'Paul said that Roxane left.'

       b. O   Pavlos lipate   **pu** efije   i
           the Paul   be.sad.NONPAST.IMPERF.3sg that leave.PAST.PERF.3sg the
           Roxani.
           Roxani.
           'Paul regrets that Roxani left.'

Both complementizers are discussed in the literature as showing veridicality: that is, the speaker or the subject of the matrix clause is committed to the truth of the complement sentence (Giannakidou 2009).

(233)   a. *assertives*: *leo* 'say', *dhiavazo* 'read'

b. *fiction verbs*: *onirevome* 'to dream', *fandazome* 'imagine'

c. *epistemics*: *pistevo* 'believe', *nomizo* 'think'

d. *factive*: *xerome* 'be glad', *gnorizo* 'know'   (Giannakidou 2009:7)

Constituents expressed as topics in the so-called left periphery of the clause can appear in two positions in Cypriot Greek. With respect to *oti*-clauses, they can appear preceding or following *oti* and with any word order of the elements following. The only restriction that applies is that in one type of clause that allows topics, namely CLLD structures, there is only one possible word order.

(234)   a. θimume   ton   Yannin   **oti** ton
         remember.NONPAST.IMPERF.1sg the.ACC Yannin.ACC that him.CLI
         iðes.
         see.PAST.PERF.2sg
         'I remember that you saw Yannis.'

b. θimume   ton   Yannin   **oti**
   remember.NONPAST.IMPERF.1sg the.ACC Yannin.ACC that
   iðes   ton.
   see.PAST.PERF.2sg him.CLI

c. * θimume   **oti** ton   Yannin   ton
     remember.NONPAST.IMPERF.1sg that the.ACC Yannin.ACC him.CLI
     iðes.
     see.PAST.PERF.2sg
     (Intended:'I remember that you saw Yannis.')

d. θimume   **oti** ton   Yannin
   remember.NONPAST.IMPERF.1sg that the.ACC Yannin.ACC
   iðes   ton.
   see.PAST.PERF.2sg him.CLI

The distribution of *pu* with topics, on the contrary, is more restrictive compared to *oti*.

(235) a. * θimume   ton   Yannin   **pu**
         remember.NONPAST.IMPERF.1sg the.ACC Yannin.ACC that
         iðes   ton   .
         see.PAST.PERF.2sg him.CLI
         (Intended: 'I remember that you saw Yanni.')

    b. * θimume   ton   Yannin   **pu** ton
         remember.NONPAST.IMPERF.1sg the.ACC Yannin.ACC that him.CLI
         iðes.
         see.PAST.PERF.2sg

    c. * θimume   **pu** ton   Yannin   ton
         remember.NONPAST.IMPERF.1sg that the.ACC Yannin.ACC him.CLI
         iðes.
         see.PAST.PERF.2sg

    d. θimume   **pu** ton   Yannin
         remember.NONPAST.IMPERF.1sg that the.ACC Yannin.ACC
         iðes   ton   .
         see.PAST.PERF.2sg him.CLI
         'I remember that Yannis, you saw him.'

Special intonation givess a more emphatic reading of constituents in those positions,

which in the appropriate contrastive focus context, can be interpreted as focus phrases.

(236) a. θimume   **oti** TON   YANNIN
         remember.NONPAST.IMPERF.1sg that THE.ACC YANNIN.ACC
         iðes,   oi ton Kosti.
         see.PAST.PERF.2sg , not the   Kostis
         'I remember that you saw YANNI, not Kostis.'

    b. θimume   TON   YANNIN   **oti**
         remember.NONPAST.IMPERF.1sg THE.ACC YANNIN.ACC that
         iðes,   oi   ton Kosti.
         see.PAST.PERF.2sg, not the Kostis
         'I remember that you saw YANNI, not Kostis.'

(237) a. * θimume   TON   YANNIN   **pu**
         remember.NONPAST.IMPERF.1sg the.ACC Yannin.ACC that
         iðes   ,   oi ton   Kosti.
         see.PAST.PERF.2sg, not the Kostis
         (Intended: 'I remember that you saw Yanni.'

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b. θimume **pu** TON YANNIN
remember.NONPAST.IMPERF.1sg that the.ACC Yannin.ACC
iðes , oi ton Kosti.
see.PAST.PERF.2sg, , not the Kostis
(Intended: 'I remember that you saw Yanni.')

Even if two positions seem to allow DPs to surface, standard tests that differentiate between focus and topics can be used here as well. Firstly, object topics can be associated with object clitics, but focused objects do not.

(238)   a. **To vivlio su**, egorasa **to**.
the book.ACC your.GEN, buy.PERF.PAST.1sg it.CLI
'Your book, I bought it.'

b. * **To vivlio su**, egorasa.
the book.ACC your.GEN, buy.PERF.PAST.1sg
(Int.'Your book, I bought it.')

c. * **TO VIVLIO SU** (embu) egorasa **to**.
the book.ACC your.GEN C buy.PERF.PAST.1sg it.CLI
(Int. 'Your book, I bought.')

d. **TO VIVLIO SU** (embu) egorasa.
the book.ACC your.GEN C buy.PERF.PAST.1sg
'Your book, I bought.'

Second, topics do not give rise to weak crossover effects.

(239)   a. Ton Yanni$_i$ i mamma tu$_i$ aɣapa ton$_i$.
the Yanni.ACC the mother.NOM his.GEN love.NONPAST.IMPERF.3sg him.CLI
'Yanni, his mother loves him.'

b. TON YANNI$_i$, i mamma tu$_{*i}$ aɣapa, oi
the Yanni.ACC the mother.NOM his.GEN love.NONPAST.IMPERF.3sg not
ton Kosti.
the Kosti.ACC
'Yanni, his mother loves, not Kostis.'

The fronted constituent *ton Yanni* can be co-indexed with the possessive pronoun in the subject position. On the contrary, focus DPs do not allow that. Multiple phrases are allowed as topics, but not in a focus position.

(240) a. To vivlio,   tu Yanni,   avrio   en   na tu   to
          the book.ACC, the Yanni.GEN, tomorrow be.3SG to him.GEN it.ACC
          doko   siura.
          give.PERF.NONPAST.1sg surely
          'The book, the John, I will give it to him tomorrow for sure.'

       b. * TU   YANNI TO   VIVLIO (embu) edoka,   oi tu
          THE YANNI THE BOOK   C   give.PERF.PAST.1sg, not the
          Petru,   to arthro.
          Petru.GEN, the article.ACC
          (Int. 'JOHN THE BOOK I gave, not Peter, the article.')

Having identified two possible positions for fronted DPs helps understand the distribution
of complementizers and finally the verb.

Other C-domain elements, such as the C particle *embu* have been identified in previous
work (Papadopoulou 2014; Grohmann et al. 2006; Fotiou 2009). This C particle is
ungrammatical with all possible combinations, something which confirms the assumption
that it is found in C.

(241) a. * θimume   oti embu ton   iðes.
          remember.NONPAST.IMPERF.1sg that embu him.ACC see.PAST.PERF.2sg
          (Intended:'I remember that you saw him.')

       b. * θimume   oti embu iðes   ton.
          remember.NONPAST.IMPERF.1sg that embu see.PAST.PERF.2sg him.ACC

(242) a. * θimume   pu embu ton   iðes.
          remember.NONPAST.IMPERF.1sg that embu him.ACC see.PAST.PERF.2sg
          (Intended:'I remember that you saw him.')

       b. * θimume   pu embu iðes   ton.
          remember.NONPAST.IMPERF.1sg that embu see.PAST.PERF.2sg him.ACC

The same ungrammaticality appears with topics in all possible word orders, as long as
there is an overt complementizer.

(243)   a.   * θimume   ton   Yanni   oti embu ton
             remember.NONPAST.IMPERF.1sg the.ACC Yanni.ACC that embu him.ACC
             iðes.
             see.PAST.PERF.2sg
             (Intended:'I remember that you saw him.')

        b.   * θimume   ton   Yanni   oti embu
             remember.NONPAST.IMPERF.1sg the.ACC Yanni.ACC that embu
             iðes   ton.
             see.PAST.PERF.2sg him.ACC

(244)   a.   * θimume   oti   ton   Yanni   embu ton
             remember.NONPAST.IMPERF.1sg that the.ACC Yanni.ACC embu him.ACC
             iðes.
             see.PAST.PERF.2sg
             (Intended:'I remember that you saw him.')

        b.   * θimume   oti   ton   Yanni   embu
             remember.NONPAST.IMPERF.1sg that the.ACC Yanni.ACC embu
             iðes   ton.
             see.PAST.PERF.2sg him.ACC

Simple distribution of the verb with other elements in the C-domain already seems
to suggest the availability of some position for it to occupy. The orders attested so far
suggest the derivations, illustrated in the trees below. As the trees show, there are two
positions for *ton Yanni* to appear: either preceding or following the complementizer *oti*.

VP
V CP
θimume C TopP
remember oti ton Yanni_n CP
that John C CliP
iðen_k Cli TP
saw ton_i t_n T'
him T vP
t_k t_n ...

(245)   a.

VP
├─ V: θimume / remember
└─ TopP
   ├─ ton Yanni$_n$ / John
   └─ CP
      ├─ C: oti / that
      └─ CP
         ├─ C: iðen$_k$ / saw
         └─ CliP
            ├─ Cli: ton$_i$ / him
            └─ TP
               ├─ t$_n$
               └─ T'
                  ├─ T: t$_k$
                  └─ vP
                     ├─ t$_n$
                     └─ …

b.

If verb movement is obstructed, the the verb remains low in T, as shown below.
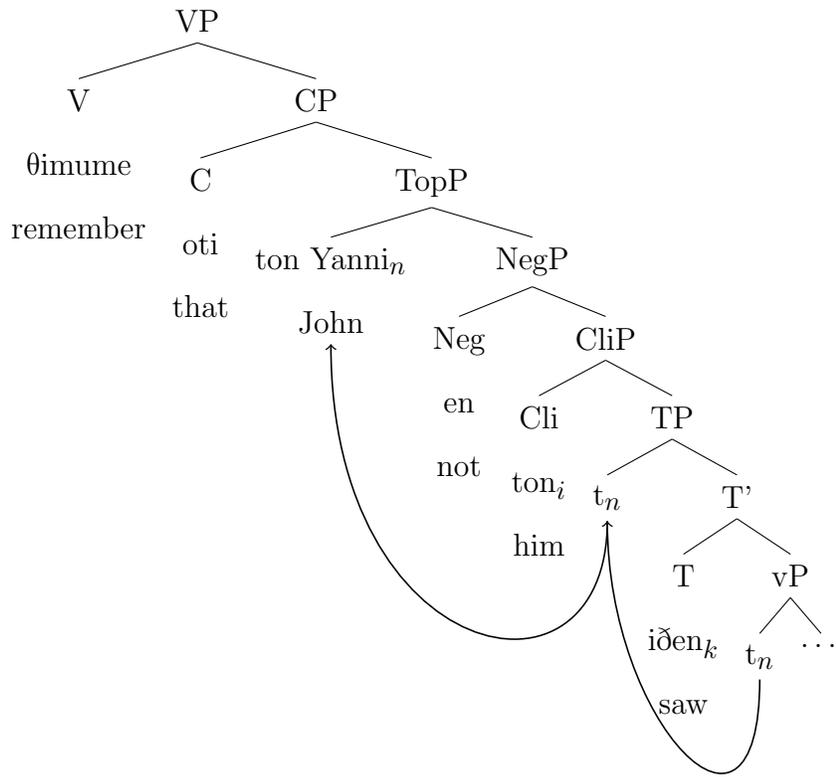
(246)   a.
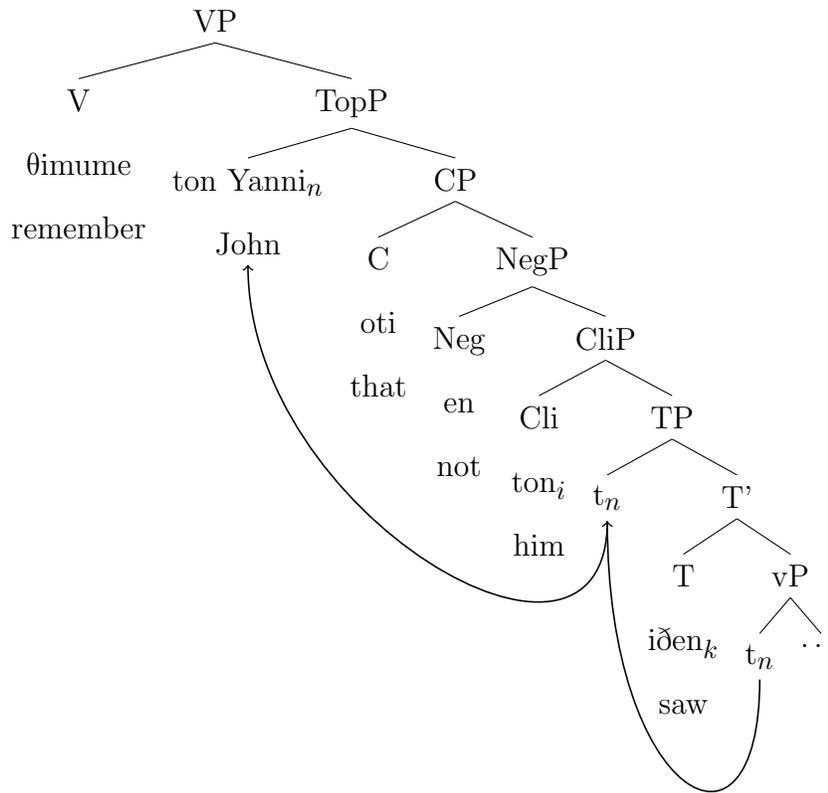
b.

This shows the *oti*-complementizers do not interact with the position surfacing high. Given that *oti* occupies a C position as well, then there must be two CP projections when the verb is also structurally high.

The other type of complementizer, namely *pu* that has a more restrictive use, suggests that the following derivations take place.

```
                          VP
                    ┌──────┴──────┐
                    V             CP
                 θimume      ┌─────┴─────┐
                 remember    C          TopP
                            pu      ┌────┴────┐
                           that  ton Yanni_n   CP
                                   John    ┌───┴───┐
                                           C      CliP
                                        iðen_k  ┌──┴──┐
                                          saw  Cli    TP
                                              ton_i ┌─┴─┐
                                              him  t_n  T'
                                                      ┌─┴─┐
                                                      T   vP
                                                     t_k ┌┴┐
                                                        t_n ...
```

(247) a.

```
                    VP
             ╱            ╲
           V               CP
        θimume         ╱        ╲
                     C            TopP
        remember                ╱      ╲
                     pu    ton Yanni_n      NegP
                    that                 ╱      ╲
                            John      Neg        CliP
                                      en      ╱       ╲
                                            Cli        TP
                                     not   ton_i    ╱      ╲
                                                  t_n        T
                                           him          ╱      ╲
                                                       T          vP
                                               iðen_k       t_n    ⋯
                                                saw
```

b.
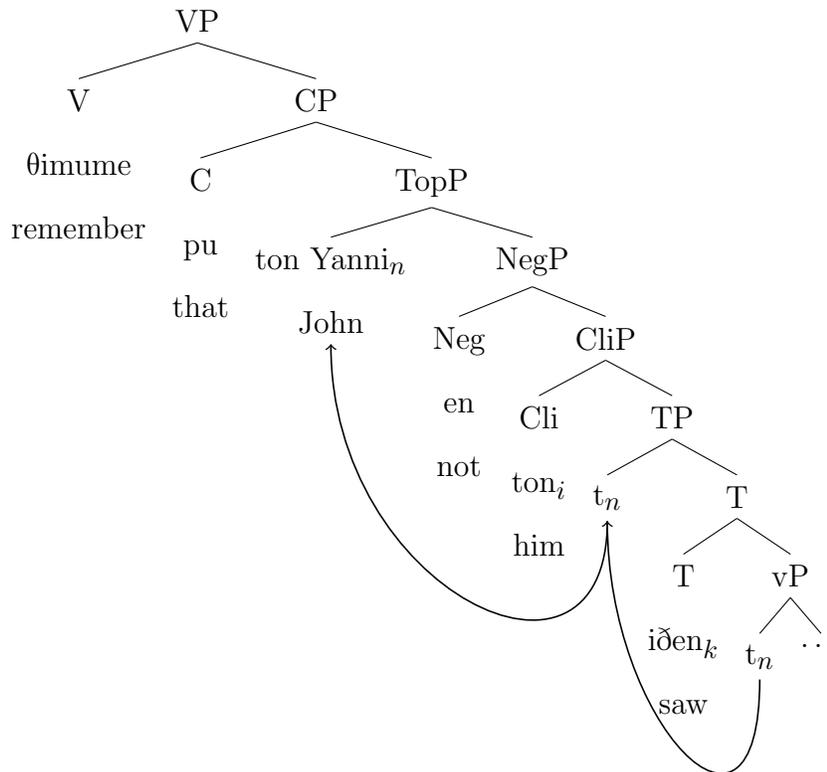
The distribution of the complementizers with topics[3] and the position of the verb already suggests that there are two CP positions available in the clause of Cypriot Greek.

3.5.2   Nominalized Clauses

Exploring the possibility of these complementizers to also occupy different positions, another difference in the distribution of *oti* and *pu* is the extent to which these clauses can be nominalized. Previous work (Roussou 1991; Varlokosta 1994) observed that *pu*-clauses cannot be nominalized, while *oti*-clauses can.

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3. The interesting fact here is that the verb generally stays low in a *pu*-clause and the fact that here it does not, shows that this is a more specific fact about topic structure that is worth an independent investigation.

(248) a. θimume   **pu** efien.
           remember.NONPAST.IMPERF.1sg that leave.PAST.PERF.3sg
           'I remember that he left.'

       b. * θimume   to **pu** efien.
           know.NONPAST.IMPERF.1sg the that leave.PAST.PERF.3sg

       c. Ksero   **oti** efien.
           know.NONPAST.IMPERF.1sg that leave.PAST.PERF.3sg
           'I know that he left.'

       d. Ksero   to **oti** efien.
           Know.NONPAST.IMPERF.1sg the that leave.PAST.PERF.3sg

It has been observed that while both *oti* and *pu* show indicative mood, they are selected by different matrix predicates. *Pu*, for example is selected by semi-factive verbs, like *ʃerume* 'to be glad', *lipume* 'to be sad', *θimume* 'remember' and so on.

Nominalization happens with the use of the definite determiner heading the clause. Similarly, a DP can be used such as *the fact*, yielding again the same results with *pu*-clauses resisting to nominalization.

(249) a. I   Maria θimate   to ɣeɣonos oti
           the Maria remember.NONPAST.IMPERF.3sg the fact   that
           efien   o Yannis.
           leave.PAST.PERF.3sg the Yannis
           'Maria remembers the fact that Yannis left.'

       b. * I   Maria θimate   to ɣeɣonos pu
            the Maria remember.NONPAST.IMPERF.3sg the fact   that
           efien   o Yannis.
           leave.PAST.PERF.3sg the Yannis

These nominalized clauses behave like strong islands, since extraction is not allowed.

(250) a. Akusa   oti edioksan   ton Yanni.
           hear.PAST.PERF.1sg that fire.PAST.PERF.3pl the Yanni
           'I head they fired Yanni.'

       b. Pkjon akuses   oti edioksan?
           Who   hear.PAST.PERF.2sg that fire.PAST.PERF.3pl
            'Who did you hear they fire?'

c. Akusa   to oti   edioksan   ton   Yanni.
hear.PAST.PERF.1sg it that fire.PAST.PERF.3pl the Yanni
'I hear that they fired Yanni.'

d. * Pkjon akuses   to oti   edioksan?
   Who   hear.PAST.PERF.2sg it that fire.PAST.PERF.3pl
'Who did you hear they fired?'

The difference observed here points to the assumption that *oti* and *pu* are two complementizers that are selected by different heads and could therefore occupy different syntactic positions (as already argued in Roussou 2000 for Standard Modern Greek). If the *pu*-clause is always headed by a DP to explain its properties, then it suggests that it needs to occupy the highest position in the C-domain, confirming the previous underlying representation presented in the section above.

While more work on this should focus on the selectional properties of the matrix predicates, I restrict the discussion here to the simple distribution facts that help us differentiate between two types of complementizers, and possibly their different syntactic positions.

VP
├─ V: θimume / remember
└─ DP
   └─ CP
      ├─ C: pu / that
      └─ TopP
         ├─ ton Yanni$_n$ / John
         └─ CP
            ├─ C: iðen$_k$ / saw
            └─ CliP
               ├─ Cli: ton$_i$ / him
               └─ TP
                  ├─ t$_n$
                  └─ T
                     ├─ T: t$_k$
                     └─ vP
                        ├─ t$_n$
                        └─ …

(251)

3.5.3   Long-distance movement

In support of a double CP structure in Cypriot Greek, data on long-distance extraction show a wh-word can only be extracted from the highest Spec, CP. As a reminder, an asymmetry met in the data is the formation of wh-questions, in that a simple wh-question does not allow a wh-word in the specifier of an already filled C, that is a C where a verb has moved to.

(252)   a. Pkjos to   ekerðisen?
          who   it.CLI win.PAST.PERF.3sg
          'Who won it?'

b. * Pkjos ekerðisen   to?
   who   win.PAST.PERF.3sg it
   (Int. 'Who won it?')

On the contrary, long distance extraction does not show any restrictions independent
of the verb surfacing low or high.

(253) a. Pkjos θimase   oti to   ekerðisen?
         who   remember.NONPAST.IMPERF.3sg that it.CLI win.NONPAST.IMPERF.3sg
         'Who do you remember won it?'

       b. Pkjos θimase   oti ekerðisen   to?
         who   remember.NONPAST.IMPERF.3sg that win.NONPAST.IMPERF.3sg it.CLI
         'Who do you remember won it?'

Argument extraction is not possible with *pu*-complements, but possible with *oti*-complements.
Pu complementizers are selected with particular verbs; *remember* has the property of
selecting either for *pu* or *oti*. Similarly to *oti*, different word orders can be observed.

(254) a. Thimume   pu efaen   o Yannis ʃeftaja.
         remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg the Yannis ʃeftaja
         'I remember that Yannis ate ʃeftaja.'

       b. Thimume   pu efaen   ʃeftaja o Yannis.
         remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg ʃeftaja the Yannis
         'I remember that Yannis ate ʃeftaja.'

       c. Thimume   pu o Yannis efaen   ʃeftaja.
         remember.NONPAST.IMPERF.1sg that the Yannis eat.PAST.PERF.3sg ʃeftaja
         'I remember that Yannis ate ʃeftaja.'

       d. * Ti   (embu) thimase   pu efaen
           What C   remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg
           o   Yannis?
           the Yannis
           (Int. 'What do you remember that Yannis ate?')

       e. * Inda mbu thimase   pu efaen   o
           What C   remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg the
           Yannis?
           Yannis
           (Int. 'What do you remember that Yannis ate?')

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f. * Pkjos (embu) θimase   pu efaen

who   C   remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg

ʃeftaya?

ʃeftaya?

'Who do you remember eat ʃeftaya?'

Comparing to long-distance wh-extraction out of clauses headed by *oti*, the differences are again very clear.

(255)   a. Thimume   oti efaen   o Yannis ʃeftaja.

remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg the Yannis ʃeftaja

'I remember that Yannis ate ʃeftaja.'

        b. Thimume   oti efaen   ʃeftaja o Yannis.

remember.NONPAST.IMPERF.1sg that eat.PAST.PERF.3sg ʃeftaja the Yannis

'I remember that Yannis ate ʃeftaja.'

        c. Ti   (embu) thimase   oti efaen   o

What C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the

Yannis?

Yannis

'What do you remember that Yannis ate?'

        d. Inda mbu thimase   oti efaen   o

What C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the

Yannis?

Yannis

'What do you remember that Yannis ate? '

        e. Pkjos (embu) θimase   oti efaen

who   C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg

ʃeftaya?

ʃeftaya?

'Who do you remember eat ʃeftaya?'

In addition, the extraction of adjuncts is not possible with *pu*-clauses, but possible with *oti*-clauses.

(256) a. * Pote (embu) θimase   pu   efaen   o
       when C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the
       Yannis ʃeftaya?
       Yannis ʃeftaya?
       (Int.'Do you remember when Yannis ate ʃeftaya?')

    b. * Pu   (embu) θimase   pu   efaen   o
       where C   remember.NONPAST.IMPERF.2sg that eatPAST.PERF.3sg the
       Yannis ʃeftaya?
       Yannis ʃeftaya?
       (Int.'Do you remember where Yannis ate ʃeftaya?')

    c. * Jati (embu) θimase   pu   efaen   o
       why C   remember.NONPAST.IMPERF.2sg that eatPAST.PERF.3sg the
       Yannis ʃeftaya?
       Yannis ʃeftaya?
       (Int.'Do you remember why Yannis ate ʃeftaya?')

    d. * Inda θimase   pu   efaen   o Yannis
       why remember.NONPAST.IMPERF.2sg that eatPAST.PERF.3sg the Yannis
       ʃeftaya?
       ʃeftaya?
       (Int.'Do you remember why Yannis ate ʃeftaya?')

    e. * Indalos (embu) θimase   pu   efaen
       how   C   remember.NONPAST.IMPERF.2sg that eatPAST.PERF.3sg
       o   Yannis ʃeftaya?
       the Yannis ʃeftaya?
       (Int.'Do you remember how Yannis ate ʃeftaya?')

Long-distance extraction of adjuncts is possible with embedded *oti*-clauses.

(257) a. Pote (embu) thimase   oti   efaen   o
       when C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the
       Yannis ʃeftaja?
       Yannis ʃeftaja
       Do you remember when Yannis ate ʃeftaja?'
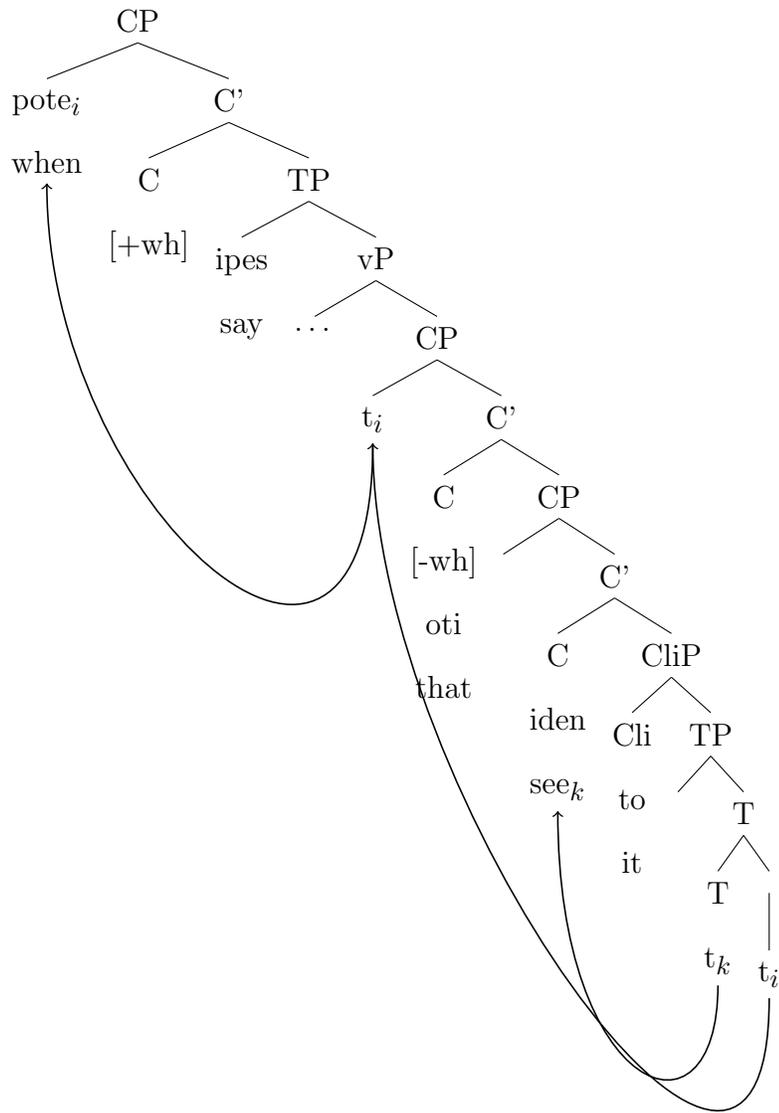
    b. Pu   (embu) thimase   oti   efaen   o
       where C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the
       Yannis ʃeftaja?
       Yannis
       Do you remember when Yannis ate ʃeftaja?'

c. Indalos (embu) thimase   oti efaen   o

how   C   remember.NONPAST.IMPERF.2sg that eat.PAST.PERF.3sg the

Yannis?

Yannis

Do you remember how Yannis ate ʃeftaja?'

An extraction assymmetry between wh-arguments and wh-adjuncts is not previously undocumented. These data could be possible accounted for if adjuncts are assumed to always need an intermediate landing site and with *pu* not allowing for that option in its specifier.

```
                        CP
                   /         \
             pkjos_i           C'
              who          /        \
                          C          TP
                        [+wh]     /       \
                                 T         vP
                                ipes    /      \
                                say         CP
                                        /        \
                                      t_i         C'
                                            /          \
                                           C            CP
                                         [-wh]       /      \
                                          oti               C'
                                          that         /         \
                                                      C           CliP
                                                     iden      /        \
                                                     see_k   Cli         TP
                                                             to    t_i        T
                                                             it            /     \
                                                                          T
                                                                          t_k
```

(258)   a.

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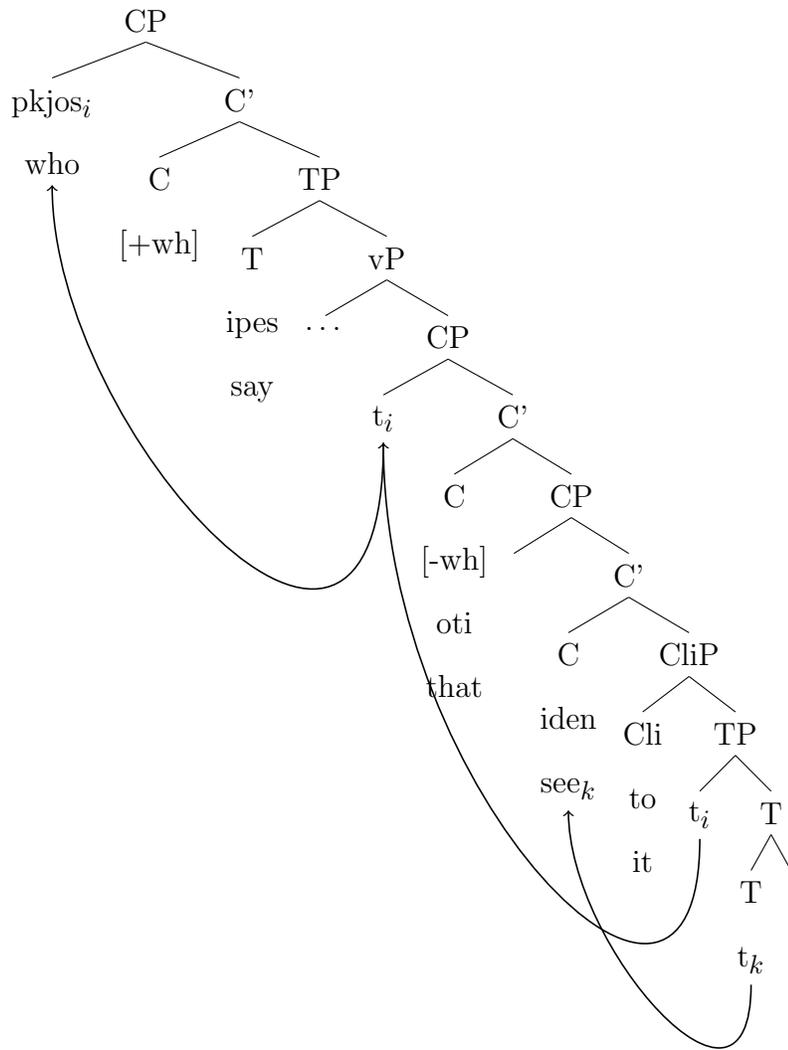
b.

Long-distance movement while the verb occupies the C position shows that the escape site for the wh-word is in fact a higher CP. In the absence of an overt complementizer and a higher CP in simple wh-questions, the wh-word cannot move to the C position if the verb has already moved there. The generalization then seems to be based on the featural

content of C and particularly the kind of elements that satisfy these features, given that any other higher C will allow these transformations to happen.

3.5.4   Negation and Verb position

Other elements that interact with the position of the verb and can be used as evidence for that are negative markers. Negation often interacts with the syntactic position of the verb, an observation that holds for different languages. As seen below, the verb is forced to stay low when a negative marker is present in the structure.

(259)   a. O   Joao deu-lhe   esse livro ontem.
            the Joao gave-DAT3S this book yesterday
            'Joao gave him/her this book yesterday.'

        b. O   Joao nao lhe-deu   esse livro ontem.
            the Joao NEG DAT3S-gave this book yesterday
            'Joao did not give him/her this book yesterday.'   (Shlonsky 2004: 338)

(260)   a. yuzn -as   -it   Moh.
            sent -3MS DAT3S-ACC3FS Moh
            'Moh sent it to her.'

        b. ur   -as   -tt   yuzin Moh.
            NEG DAT3S-ACC3FS SENT-3MS Moh
            'Moh didn't send it to her.'

        c. * ur   yuzin -as   -tt   Moh.
            NEG sent   3MS DAT3S-ACC3FS Moh
            'Moh didn't send it to her.'   (Shlonsky 2004: 338)

Clausal negation in Cypriot Greek also works in the same way, disallowing the verb to move across it to a higher position as possible a result of the *Head Movement Constraint* (Travis 1984) and the impossibility of negation to form a complex head with the verb. Higher (or external (Horn 1989)) negation found in Cypriot Greek, which I will identify as *presupposition-canceling negation* does not have the same effects, showing that negation

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can obstruct verb movement only when its position is between the target and the landing site.

(261) a. En espasen   to paraθiron.
           NEG break.PAST.PERF.3sg the window.ACC
           'The window did not break.'

       b. Endʒe espasen   to paraθiron.
           NEG   break.PAST.PERF.3sg the window.ACC
           'It is not the case that the window broke.'

With respect to the position of the verb relative to the object clitic position, the two types of negation contrast with respect to allowing the verb to appear higher up in the structure.

(262) a. En to   espasen.
           NEG it.CLI break.PAST.PERF.3sg
           'He did not break it.'

       b. Endʒe espasen   to.
           NEG   break.PAST.PERF.3sg it.CLI
           'It is not the case that he broke it.'

This external negation expressed by *endʒe* can be identified with the following diagnostics that differentiate its meaning from internal negation.

First, external negation negates the implicatum of certain propositions, as is shown in the cases below.

(263) a. Endʒe ekaman   moro tʃe epandreftikan.
           NOT   have.PAST.PERF.3pl baby and marry.PAST.PERF.3pl.
           Epandreftikan   tʃe ekaman   moro.
           Marry.PAST.PERF.3pl and have.PAST.PERF.3pl baby.
           'It is not the case that they got married because they had a baby. They

           married and then had a baby.'

       b. En   ekaman   moro tʃe epandreftikan.
           NEG have.PAST.PERF.3pl baby and marry.PAST.PERF.3pl.
           Epandreftikan   tʃe ekaman   moro.
           Marry.PAST.PERF.3pl and have.PAST.PERF.3pl baby

'They didn't have a baby and got married. They got married and had a baby.'

The use of *endʒe* negates the implicatum from the order the information is presented. In the following example, the external negative operator negates the implicatum that Andrikkos has a date with a lady other than his wife or someone that he knows.

(264) a. O   Andrikkos eʃi   rantevu me   mian popse.
           the Andrikkos have.NONPAST.IMPERF.3sg date   with one   tonight
           'Andrikkos has a date with someone tonight.'

       b. Endʒe kseni   - en i   ɣineka tu!
           NOT   stranger - be the wife   his
           'She is not a stranger- she's his wife!'

       c. # En   en kseni   - en i   ɣineka tu!
             NEG be stranger- be the wife his

Using the logical negator is bizarre given that the speaker never actually uttered that this lady is a stranger. Another case where external negation is used is with pejorative language, as in the following case.

(265) Imagine a context where I am hosting a SouthEast Asian-looking person (that is a Philippino). A guest comes to my house and accidentally breaks a glass. At that point, my guest walks in (note Fillipineza=cleaning lady).

       a. As ta   kaθarisi   i   Filippineza.
           Let them   clean.NONPAST.PERF.3sg the Philippino
           'Let the cleaning lady clean them.'

       b. Endʒe Filippineza. En filoksenumeni.
           NOT   Philippino. Be guest.
           'She is not a Philippino. She is a guest.'

       c. # En   en Filippineza. En filoksenumeni.
             NOT be Philippino. Be guest.
           'She is not a Philippino. She is a guest.'

Use of the internal negation would mean that she is literally not from Philippines, but actually she is. Therefore, the sentence is not true. On the contrary, use of external negation negates the meaning where the guest works as a cleaning lady, and not her origin.

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Other diagnostics come from the distribution of negative polarity items. Giannakidou (1998) shows the differences between emphatic and non-emphatic negative polarity items, which are both licensed by negation. An emphatic negative polarity items scopes over negation via QR, which suggests that if negation takes scope over the entire proposition, as in the case of *endʒe*, then the emphatic NPI should not be licensed. This is confirmed below:

(266) a. En elisa   kanena provlima.
           NEG solve.PAST.PERF.1sg any   problem.
           'I didn't solve any problems.'

       b. En elisa   KANENA provlima.
           NEG solve.PAST.PERF.1sg any   problem.
           'I didn't solve ANY problem.'

       c. Endʒe elisa   kanena provlima.
           NOT   solve.PAST.PERF.1sg any   problem.
           'It is not the case that I solved any problems.'

       d. # Endʒe elisa   KANENA provlima.
             NOT   solve.PAST.PERF.1sg any   problem.
           (Int. 'It is not the case that I solved ANY problems.')

External negation can negate the presupposition derived by a negative sentence, as in the following example.

(267) Endʒe en   epia,   epia.
       NOT   NEG go.PAST.PERF.1sg, go.PAST.PERF.1sg.
       'It is not the case that I didn't go, I went.'

Additionally, *endʒe* takes scope over a proposition in the same clause and cannot be used as stand alone, as for example in fragment answers.

(268) a. En o kalitteros maθitis!

'He is the best student!'

b. En en! 'No, he is not!'

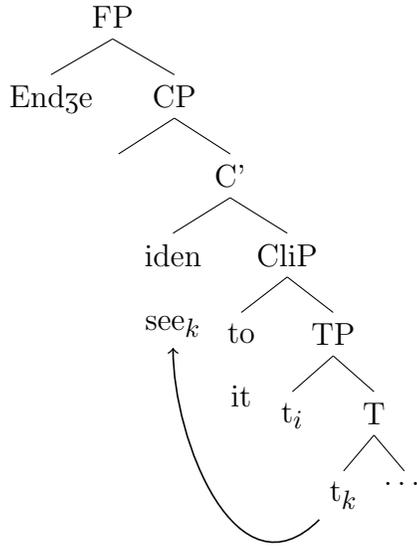c. * Endʒe! (Int. 'It's not the case that he is!')

Last, use of evidential adverbials expressing doubt of the truth of the proposition is odd, given that what is canceled is unknown if it's true or not.

(269) a. En tin apatisen   imiʃi   mu.
          NEG CLI cheat.PAST.PERF.3sg supposedly me
          'She didn't cheat on her supposedly.'

b. # Endʒe apatisen   tin imiʃi   mu.
      NOT   cheat.PAST.PERF.3sg CLI supposedly me

The negative sentence *endʒe* S denies the truth of the statement S previously uttered or implied, essentially saying 'sentence S is not true'. What matters here though is that *endʒe* itself is syntactically merged higher in the structure, allowing for the verb to move to a position in the C-domain contrasting the lower negation which blocks this verb movement.

(270) Endʒe iða to.

NEG see.PAST.PERF.1sg it.CLI

'It is not the case that I saw it.'

The following tree shows again the verb moving to the C position with *endʒe* merged in a higher position.

FP
├── Endʒe
└── CP
    └── C'
        ├── iden
        │   └── see_k
        └── CliP
            ├── to
            │   └── it
            └── TP
                ├── t_i
                └── T
                    ├── t_k
                    └── ...

(271)

3.6 The syntactic position of the verb in Cypriot Greek

The distribution of the verb with elements in the left periphery, embedded clauses, long-distance extraction and negation suggests that the verb in Cypriot Greek moves to a C position. As already suggested, I assume that the verb movement is the result of head movement triggered by a strong feature on C.

CP
└── C'
    ├── iðen_k
    │   └── saw
    └── CliP
        ├── to_i
        │   └── it
        └── TP
            └── T
                └── t_k
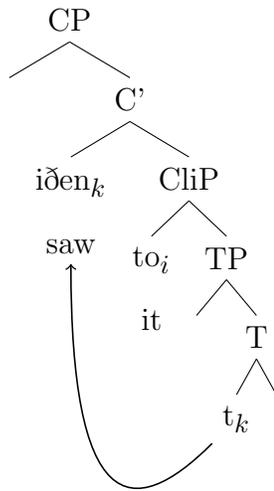
(272)

Again, there are different flavors of C: one type attacts the verb, another type attracts

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phrases to its specifier and another type does not trigger any movement but simply hosts complementizers.

(273)   a. $C_{[T*]}$

   b. $C_{[XP[wh]*]}$

   c. C

Embedded clauses, as already seen, show an interesting property of their own: they can allow verb movement or not. Below I present an analysis of the syntax of the verb in Cypriot Greek by arguing that the best way to capture these data are with a CP-recursion analysis, contrary to the assumption of an F-projection as previously suggested for certain Romance languages and Cypriot Greek (Mavrogiorgos 2013).

3.6.1   CP-recursion

Since the work of den Besten (1977, 1983), the standard generative analysis of the verb-second phenomenon has involved movement of the tensed verb to C, immediately following a topic that has been fronted. One of the central predictions of this analysis is that V2 should be limited to clauses in which the C position is empty, as in matrix sentences and in a limited range of subordinate clauses. On the contrary, Yiddish and Icelandic verb-second word order is acceptable in a wide range of subordinate clauses in the presence of a complementizer, as illustrated below.

(274)   Ir   muzt klingen in shpitol oyb di   doktershe   vilt   ir   dergreykhn.
        you must call   in hospital if   the doctor-FEM want you reach
        'You must call the hospital if you want to reach the doctor.'

   (Iatridou and Kroch 1992:1)

In the verb-final West Germanic language Frisian, for example, verb-second word order can occur in subordinate clauses introduced by overt complementizers, as in the following examples.

(275) a. Pyt sei   dat hy my sjoen hie.
          Pyt said that he me seen had

       b. Pyt sei   dat hy hie my sjoen.
          Pyt said that he had me seen

       c. Pyt sei   dat my hie er sjoen.
          Pyt said that me had he seen
          'Pyt said that he had seen me.'   (Iatridou and Kroch 1992:4)

Under one possible analysis, these sentences are taken as instances of CP-recursion (Vikner 1994), where the complementizer occupies a higher C and the verb occupies a lower C position.

(276) verb[$_{CP}$ [$_{C'}$ that [$_{CP}$ topic [$_{C'}$ verb [$_{IP}$ …t …t]]]]]

Vikner shows that CP-recursion occurs with verbs like 'say' and 'believe' but not with 'regret'. It also occurs in just those environments and with just those verbs that allow deletion of the overt complementizer.

Cypriot Greek also allows embedded clauses that are not headed by a complementizer under the so-called bridge verbs, such as *think* and *say*.

(277) a. Nomizi   iða   to.
          think.NONPAST.IMPERF.3sg see.PAST.PERF.1sg it.CLI
          'She thinks she saw it.'

       b. * Nomizi   to   iða.
            think.NONPAST.IMPERF.3sg it.CLI see.PAST.PERF.1sg
          'She thinks she saw it.'

       c. Ipe   iða   to.
          say.PAST.PERF.3sg see.PAST.PERF.1sg it.CLI
          'She said she saw it.'

       d. * Ipe   to   iða.
            say.PAST.PERF.3sg it.CLI see.PAST.PERF.1sg
          'She said she saw it.'

In fact, if the C is not lexically filled then the verb moves to it, as in these cases. This shows that absence of an overt complementizer does not mean that C does not

project. To explain the optionality between *oti* and *pu* in terms of verb placement, I propose that there is CP-recursion in the cases where an 'optionality' is observed in verb-clitic/clitic-verb orders.

(278) a. I   Maria kseri   **oti** ton   iðes.
           the Maria know.NONPAST.IMPERF.3sg that him.CLI see.PAST.PERF.2sg

       b. I   Maria kseri   **oti** iðes   ton.
           the Maria know.NONPAST.IMPERF.3sg that see.PAST.PERF.2sg him.CLI
           'Maria knows that you saw him.'

(279) a. I   Maria θimate   **pu** ton   iðes.
           the Maria remember.NONPAST.IMPERF.3sg that him.CLI seePAST.PERF.2sg
           'Maria remembers that you saw him.'

       b. * I   Maria θimate   **pu** iðes   ton.
           the Maria remember.NONPAST.IMPERF.3sg that seePAST.PERF.2sg him.CLI

Generally, there are two groups of complementizers with respect to their syntactic position in Cypriot Greek according to whether they allow or disallow the variation in the verb position. The choice among *pos, oti, na* and *pu* depends on the semantic properties of the embedding properties of the embedding predicate (see Giannakidou 1998 for extensive discussion of these variables in Standard Modern Greek. A similar investigation for Cypriot Greek will have to await future work.).
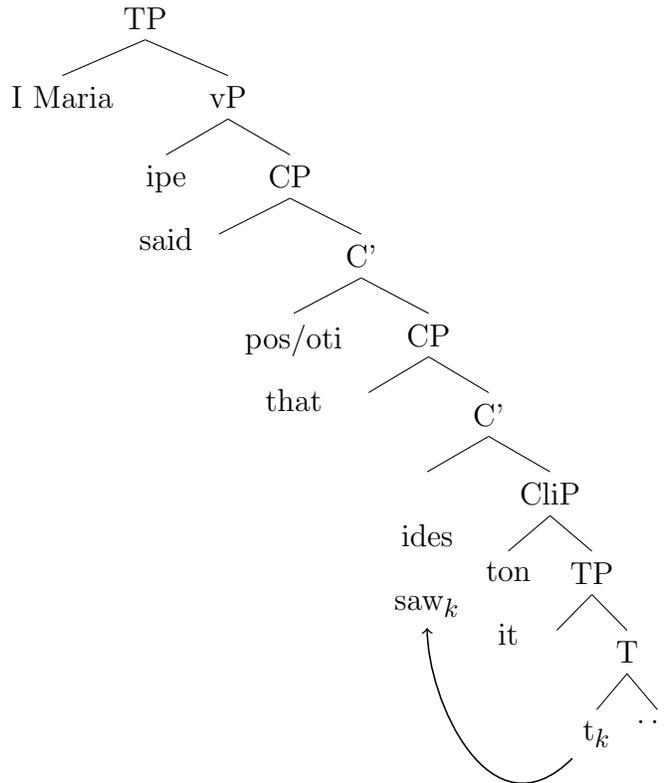
Matrix	V	Cli	
TYPE A			
Pos-clauses 'that'	{V}	Cl	{V}
Oti-clauses 'that'	{V}	Cl	{V}
Epiði-clauses 'because'	{V}	Cl	{V}
TYPE B			
Pu-clauses 'that'		Cl	V
Na-clauses 'to'		Cl	V
An-clauses 'if'		Cl	V
Aman-clauses 'when'		Cl	V
As-clauses 'let's'		Cl	V

Some examples are given again for each of the condition outlined in the table above.
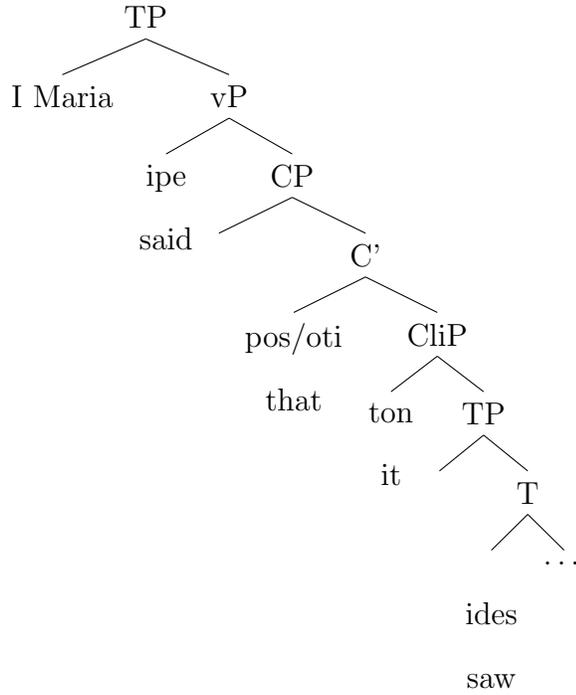
(280) a. Iðes   ton.
           see.PAST.PERF.2sg him.CLI
           'I saw him'   MATRIX, V-CLI

       b. * Ton   iðes.
             him.CLI see.PAST.PERF.2sg
                                                          MATRIX, CLI-V

(281) a. I   Maria ipe   **pos/oti** ton   iðes.
           the Maria say.NONPAST.IMPERF.3sg that   him.CLI see.PAST.PERF.2sg
           'Maria said that you saw him.'   POS/OTI-CLAUSES, CLI-V

       b. I   Maria ipe   **pos/oti** iðes   ton.
           the Maria say.NONPAST.IMPERF.3sg that   see.PAST.PERF.2sg him.CLI
                                                       POS/OTI-CLAUSES, V-CLI

       c. I   Maria ethimosen   **epiði** ton iðes
           the Maria angry.PAST.PERF.3sg because CLI see.PAST.PERF.2sg
           'Maria got angry because you see.PAST.PERF.2sg him.' EPIÐI-CLAUSES,CLI-V

       d. I   Maria ethimosen   **epiði** iðes   ton
           the Maria angry.PAST.PERF.3sg because see.PAST.PERF.2sg CLI
                                                       EPIÐI-CLAUSES,V-CLI

(282) a. I   Maria θeli **na** ton   ðis.
           the Maria want that him.CLI see.NONPAST.IMPERF.2sg
           'Maria wants you to see him.'   NA-CLAUSE,CLI-V

       b. * I   Maria θeli **na** ðis   ton.
             the Maria want that see.NONPAST.IMPERF.2sg him.CLI
                                                          *NA-CLAUSE,V-CLI

       c. I   Maria en na θimosi   **an** ton   ðis
           the Maria be na get.angry if   him.CLI see.NONPAST.IMPERF.2sg
           'Maria will get angry if you see him.'   AN-CLAUSE,CLI-V

       d. * I   Maria en na θimosi   **an** ðis   ton
             the Maria be na get.angry if   see.NONPAST.IMPERF.2sg him.CLI
                                                          *AN-CLAUSE,V-CLI

       e. I   Maria θimoni   **aman** ton   vlepis
           the Maria get.angry when   him.CLI see.NONPAST.IMPERF.2sg
           'Maria gets angry when you see him.'   AMAN-CLAUSE,CLI-V

                                    193

f. * I   Maria θimoni   **aman** vlepis   ton.
       the Maria get.angry when   see.NONPAST.IMPERF.2sg him.CLI

                                                  *AMAN-CLAUSE,V-CLI

g. As ton   ðumen.
      let him.CLI see.NONPAST.IMPERF.1pl
      'Let us see him.'   AS-CLAUSE,CLI-V

h. * As ðumen   ton.
       let see.NONPAST.IMPERF.1pl him.CLI

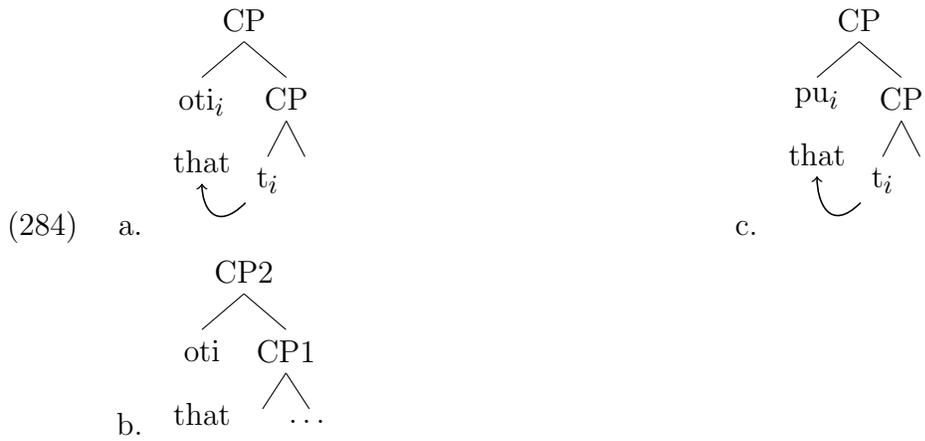   *AS-CLAUSE,V-CLI

Complementizers like *oti* in (272) have two options: either they merge in a low C position and move to a high C position or they externally merge in the high C position.

(283)   a.

```
                        TP
                      /    \
              I Maria       vP
                          /    \
                       ipe      CP
                      said    /    \
                            C'
                          /    \
                    pos/oti      CP
                     that      /    \
                            C'
                          /    \
                    ides       CliP
                   saw_k      /    \
                            ton    TP
                            it    /  \
                                 T
                               /   \
                             t_k   ...
```

Tree (b):

```
                TP
          /            \
    I Maria            vP
                    /       \
                  ipe        CP
                  said      /    \
                          C'
                       /      \
                  pos/oti    CliP
                    that    /     \
                          ton     TP
                           it    /    \
                                       T
                                     /    \
                                      ...
                                      ides
                      b.              saw
```

Complementizers like *pu* can only merge in the low C position and move to the high C position and in this way the base-generated position filled by a trace can never host the verb.

```
                CP                              CP
             /      \                        /      \
        oti_i       CP                   pu_i       CP
                   /  \                            /  \
            that     t_i               that      t_i
(284)   a.      ↶                  c.        ↶

                CP2
             /      \
          oti       CP1
                   /  \
        b.  that     ...
```

The existence of multiple CPs suggests the availability of positions for a sequence of movement accessing the specifier of a CP as left-peripheral positions in establishing a movement chain. As discussed in section 3.5.3, simple wh-questions do not allow movement of the verb to C.

(285) a. Pkjos to   iðen?
           who   it.CLI see.PAST.PERF.2sg
           'Who saw it?'

       b. * Pkjos iðen   to?
             who   see.PAST.PERF.2sg it.CLI

In long-distance extraction, the verb can appear in C confirming exactly the existence

of two C positions, the highest of which is the escape site for the wh-word.

(286) a. Pkjos ipes   oti   to   iðen?
           who   say.PAST.PERF.2SG that it.CLI see.PAST.PERF.2sg
           'Who did you say saw it?'

       b. Pkjos ipes   oti   iðen   to?
           who   say.PAST.PERF.2SG that see.PAST.PERF.2sg it.CLI

(287)

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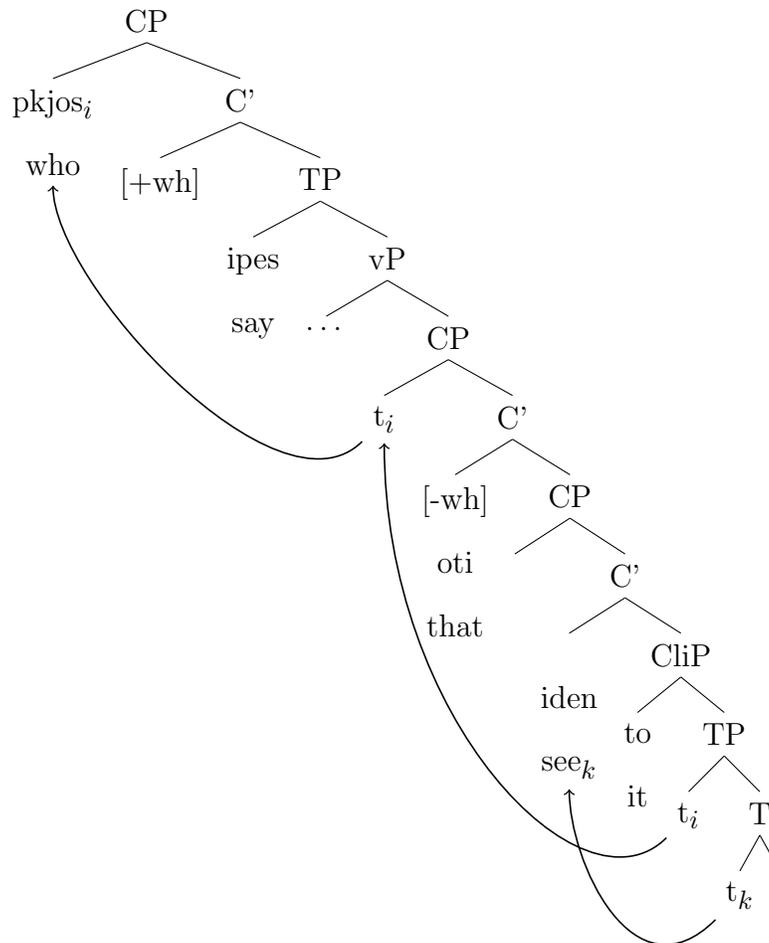
In the tree above, the verb shows T-to-C movement and the subject wh-word moves through the specifier of the highest CP in the embedded clause to the specifier of the matrix clause. The CP-recursion analysis captures the variation in word order in embedded clauses and explain the asymmetry in long-distance wh-movement. It also gives the clausal structure of Cypriot Greek two positions for C-elements previously not identified contributing in a more refined understanding of the functional projections in the left periphery of the clause.

3.6.2 Languages with CP-recursion

A number of languages show special subordinate constructions formed by two analogous complementizers separated by a phrase. In these languages both C positions are occupied by an overt element, usually spelled out as the same. Italian is known, for example, for the *Double Che Construction*, and particularly non-standard Italian varieties, such as Turinese, Ligurian, Southern Calabrian and Salentino (Franco 2009).

(288) a. Majo a   pensa che Franchin ch' as   n'   ancorza
           Mario SCL thinks that Frank   that SCL of.it realize.3s.SUBJ
           (Turinese) 'Mario thinks that Frank will realize it'

       b. A   Teeja a   credda   che a   Maria cha parta duman.
           The Teresa SCL believe.3s that the Mary that SCL leave.3s.SUBJ tomorrow
           'Teresa thinks that Mary will leave tomorrow.' (Liguarian)

       c. Sugnu cuntentu mu frati-tta   (mu) um vena.
           am   happy   mu brother-your mu   not comes
   'I am happy that your brother is not coming.'   (Franco 2009:206)

The Spanish left periphery shows double complementizer constructions with Latin American Spanish and European Spanish differing with respect to the possibility of the recomplementation construction (Villa-García 2012, examples taken from Vera 2017).

(289) a. Susi dijo que a   los alumnos que le dieron regalos.
        Susi said that PART the students that CL gave   presents
        'Susi said that they gave the students presents.'

      b. María dijo que a   ninguno de los chicos   que Juan *(no) los invitó
         Mary said that PART none   of the children that John   no CL invited
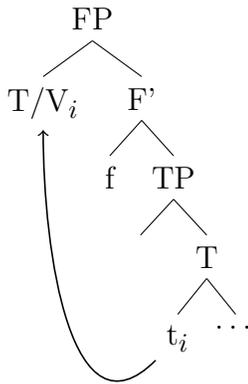   'Mary said that John didnt invite any of the children.'

The two *que*s are assumed to occupy the two positions of Fin and and Force in Rizzi's left periphery of the clause, with the Fin^o head being a phase and the entire recomplementation constructions being subject to prosodic reflexes. Importantly though, the existence of these cases gives supports to multiple projections hosting complementizers, supporting in this way the CP-recursion analysis in Cypriot Greek and other languages.

3.6.3   Against an F-projection

A considerable amount of work has converged on the idea that there is a functional category in the left periphery of the clause, between C and T. Raposo and Uriagereka (2005) label this as the F-projection, which serves as an interface between syntax and discourse and involves a value judgment by a speaker or a perspective-bearing subject expressed with quantifier phrases, phrases with overt focus operators, and elements encoding the polarity of a proposition. The F-projection in their analysis also hosts the object clitic in Romance and Tobler-Mussafia languages, like Cypriot Greek. For illustration purposes, their proposal is shown below.

(290)

```
        FP
       /\
         F'
        /\
       f   TP
          /\
            T
           /\
        T/V  …
```
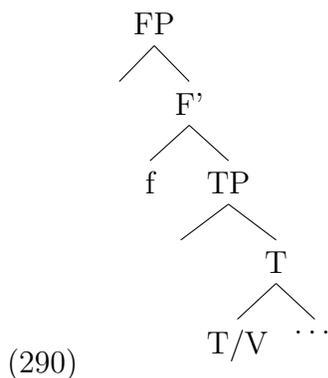
The Tobler-Mussafia effect, that is characterized by disallowing the object clitic sentence-initially, attracts the verb closest to (either an auxiliary or a main verb) to the clitic cluster in FP (280). This is only a last resort adjustment in an active phase and only applies to languages where verbs are raised (or base-generated) outside of the vP phase. That is, for example, languages that do not allow pro-drop, which is arguably a sign of verb movement to T, at least within Romance.
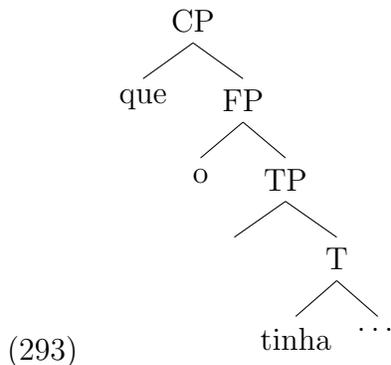
$$
\begin{array}{c}
\text{FP} \\
\diagup \quad \diagdown \\
\text{T/V}_i \qquad \text{F'} \\
\diagup \quad \diagdown \\
\text{f} \quad \text{TP} \\
\diagup \quad \diagdown \\
\text{T} \\
\diagup \quad \diagdown \\
\text{t}_i \quad \cdots
\end{array}
$$

(291)

Finite embedded clauses in languages that allow this last-resort 'verb swallowing' process usually force the verb to stay in T, as in the case below:

(292)   a. Ela disse que o   tinha   visto ontem.
            she said that him-CL (she-)had seen yesterday
            'She said that she had seen him yesterday.'

        b. * Ela disse que tinha   o   visto ontem.
            she said that (she-)had him-CL seen yesterday

Here, the clitic o has been placed in and there is a putative host for the clitic cluster, namely, the overt complementizer *que* that. Thus, the derivation does not have to take the costly route of verb movement, and the ungrammatical output with enclisis is ruled out.

(293)

```
              CP
            /    \
         que      FP
                 /   \
                o     TP
                     /   \
                          T
                         /  \
                      tinha  . . .
```

As we have seen, Cypriot Greek allows the verb to either move or stay in T with certain embedded complementizers, like *oti*. This contradicts an analysis under which the complementizer functions as a host to the clitic and a more general approach of verb movement as last-resort (as in Mavrogiorgos 2013). Instead, what seems to be a better approach is the CP-recursion (Vikner 1994) approach to verb movement, as presented in the previous section, where the verb moves to the lower C to satisfy a syntactic feature. This successfully captures the variation in word order between the verb position and the different complementizers, while precisely deriving the enclisis-proclisis facts.

3.7   On V2 and V-to-C languages

The discussion on the syntax of the Cypriot Greek verb, a V-to-C language, is compared -or even based- on general properties of verbal syntax in different Germanic varieties mentioned here. This is not accidental, of course, since the properties of the syntax of the verb in Cypriot Greek, and particularly with respect to the position of the verb, seem to be closer to that of the Germanic language family. The question that arises is the trigger for verb movement and the extent to which that trigger is shared by the Germanic varieties that like the verb to be in C and Cypriot Greek, a V2 and V-to-C language. The complexity of the verb syntax in Cypriot Greek arises from the variation, or rather the convergence of the derivation both when the verb can be in C and when it cannot, compared to for example German that always requires C to be filled, either by the verb

or a complementizer in embedded environments.

In their account of T-to-C movement in English, Pesetsky and Torrego (2001) posit two features on C, uT and uWh. The first one drives verb to C, while the second one drives wh-movement to the specifier of C. The nature of the feature is quite simple, as defined in their work:

(294)   C bears an uninterpretable T feature (henceforth uT) with the EPP property

The deletion of uT, however, can be satisfied in a number of ways depending on the syntactic environment. Taken from their work, this is a summary of the assumptions, that is built based on generalization on *that*-trace effects and the T-to-C asymmetry of auxiliaries in wh-questions; that is, T-to-C movement is obligatory in questions when the nearest subject is not the phrase wh-moved to Spec,CP.

(295)   a. **Matrix wh-clause**

Features of C: uT Deletion of uT: by T-to-C movement or subject movement

b. **Embedded wh-clause**

Features of C: uT Deletion of uT: by Agree(no movement)

c. **Embedded declarative with no wh-extraction**

Features of C: uT Deletion of uT: by T-to-C movement

d. **Embedded declarative with wh-extraction**

Features of C: uT Deletion of uT: by T-to-C movement

The case of the embedded questions refers to examples of the type *Bill asked what did Mary buy*, where of course English shows an asymmetry compared to matrix environment where the auxiliary moves to C. The phenomenon itself shows variation, as Belfast English actually allows embedded T-to-C movement (Pesetsky and Torrego 2001).

Given that Germanic varieties would not allow an empty C, one could easily hypothesize a similar account, where an uninterpretable feature on C drives verb movement giving the

surface orders of the common pattern. But to what extent can we posit this feature on C for Cypriot Greek, given that the verb can stay low without the derivation crashing? Such an assumption would mean that we are positing checking of features via agreement as an operation that takes place after every other possibility, such as movement, have been ruled out.
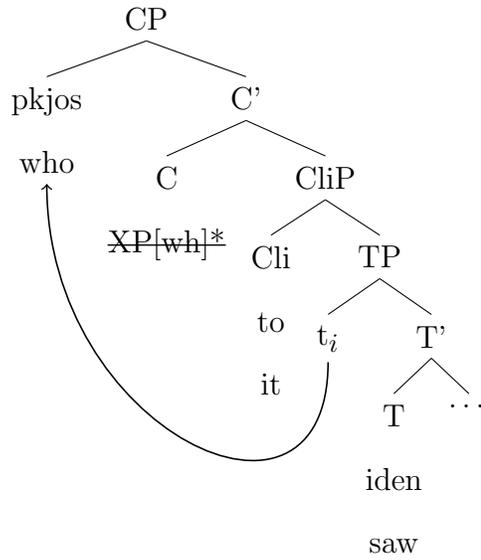
Instead, if we posit this feature on the verb itself, we can explain why it can stay low following standard assumption on blocking of movement and assume that as soon as C merges and bears the feature shared by the verb, an agree relation is established. Blaming the features on C or the features on the verb itself should be an assumption about the syntax of these languages that also derives the small similarities, yet fundamental typological differences between Germanic and Cypriot Greek, a V2 and a V-to-C language.

The most crucial example that relates to this point is in fact wh-questions in Cypriot Greek, which as already mentioned in previous sections, is the only environment that does not allow the verb to move to C, even if nothing theoretically obstructs that movement from happening. So if HMC is not at issue, how is the derivation not crashing with an empty C?

(296)   a. Pkjos to   iðe?
            who   it.CLI see.PAST.PERF.1SG
            'Who saw it?'

        b. * Pkjos iðe   to?
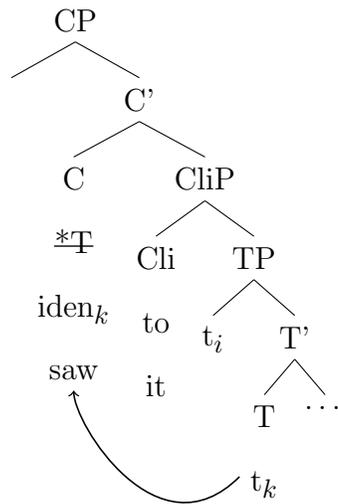   who   see.PAST.PERF.1SG it.CLI

If we contrast phrasal movement with head movement, we observe that there is no restriction any more and that is the result of the existence of different features on C that drive movement in each case.

(297)   a. Iðes ton?
            see   him.CLI
            'Did you see him?'

        b. * Ton   iðes?
              him.CLI see

(298)

```
                    CP
           ╱            ╲
        pkjos            C'
        who         ╱         ╲
                   C          CliP
              XP̶[̶w̶h̶]̶*     ╱      ╲
                      Cli      TP
                      to    ╱     ╲
                          t_i      T'
                      it         ╱    ╲
                               T      ⋯
                             iden
                             saw
```

The verb does not move to C in this case. On the contrary, the verb moves in polar questions that do not show phrasal movement triggered by C.

```
                 CP
             ╱       ╲
                     C'
                ╱         ╲
               C          CliP
              *T̶       ╱       ╲
             iden_k   Cli      TP
              saw     to    ╱     ╲
                         t_i      T'
                     it         ╱   ╲
                              T     ⋯
                                    t_k
```

(299)

In the rest of the environments, we can then expect the checking of a strong feature that drive head movement or not in the case of phrasal movement or lack of movement.

(300) a. **Matrix clause**

Deletion of T*:by T-to-C movement

b. **Embedded clause with verb-cli order**

Deletion of T*:by T-to-C movement

c. **Embedded clause with cli-verb order**

No T* feature

d. **Polar question**

Deletion of T*:by T-to-C movement

e. **Negation**

No T* feature

f. **Na-clauses**

No T* feature

g. **Embu particle**

No T* feature

h. **Matrix wh-question**

No T* feature

i. **Embedded wh-question**

No T* feature

j. **Long-distance wh-question**

Deletion of T*:by T-to-C movement

The typological differences that set Cypriot Greek and a language as strict as German with respect to the verb position is the possibility of all the different combinations of Cs that Cypriot Greek has, namely the phrasal movement-only C and the no-movement C. German always requires movement to take place with the assumption of a strong T* feature, for example. It also allows the lack of movement, when C does not carry any feature and allows the complementizer to surface at that position.
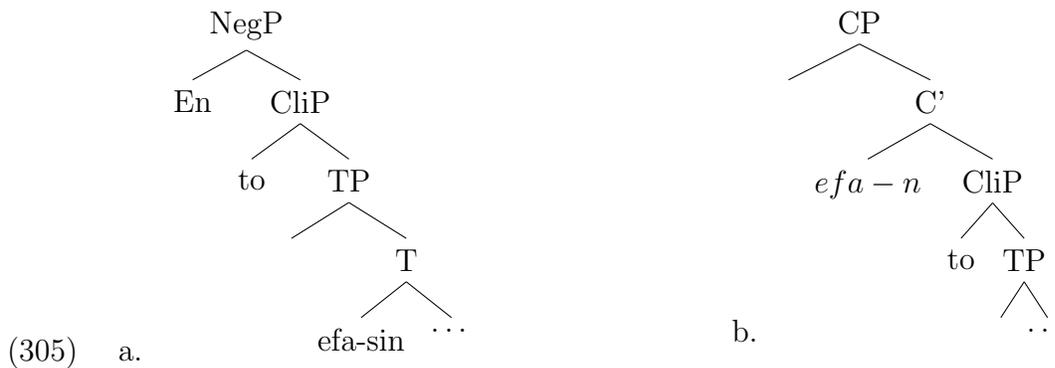
The surface position of the verb, sometimes high and sometimes low, in Cypriot Greek is the result of syntactic movement driven by the need to satisfy a strong feature T*. Comparing with V2 languages then, not all instances of the verb in C can be given the same account, as the C in Cypriot Greek can stay empty.

3.8   Allomorphy and Verb movement

Having established that there is T-to-C movement in Cypriot Greek, I can now return to the initial question which concerns particular syntactic configurations triggering allomorphy word-internally. Verb movement and allomorphy conditions interact if we follow the idea that C triggers allomorphy, when the verb moves to C since the two become part of the same morphological domain, and C can affect the realization of AGR and trigger allomorphy (compared to the lack of these conditions as in the * case).

(301) $Y \leftrightarrow \alpha$ $Y \leftrightarrow \alpha$

      $*Y \leftrightarrow \beta/[\_\_X]$ $Y \leftrightarrow \beta/[\_\_X]$

a.

```
        XP
       /  \
      X    YP
          /  \
         Y   ...
```

b.

```
          XP
         /  \
        X    YP
       / \   /  \
      Y  X  t_Y  ...
```

(302)   **Condition 1**:

    a. The AGR suffix shows allomorphy when V is in the same domain as C.

    b. When V does not move to C, allomorphy is not possible.

    Condition 2:

    Morphological merging of V and C shows locality restrictions

If allomorphy is conditioned word-internally, then locality effects define the input to

morphology, as in the definition in:

(303)   At the input to Morphology, a node X^o is (definitionally) a *Morphosyntactic Word* (MWd) iff X^o is the highest segment of an X not contained in another X^o. (Embick and Noyer 1999)

3.8.1   The case of -si and -nde

The question, even if empirically limited for this language specifically, is how to account for the appearance of special morphology on the verb, as in with *-si* in 3RD PLURAL which appears only when the verb stays in T. Under a contextual allomorphy account, *-n* could be the allomorph of *-sin* when the verb has moved to C and satisfies the locality condition that would trigger allomorphy to appear.

(304)   a. Efa -(*si) -n   to.
            eat -si   -3PL it.CLI
            'They ate it.'

        b. En   to efa -(si) -n.
            NEG CLI eat -si   -3PL
            'They didn't eat it.'

(305)   a.

NegP
├─ En
└─ CliP
   ├─ to
   └─ TP
      └─ T
         ├─ efa-sin
         └─ . . .

b.

CP
└─ C'
   ├─ $efa - n$
   └─ CliP
      ├─ to
      └─ TP
         └─ . . .

However, the verb without the *-si* morpheme is possible when the verb is in T. This seems to suggest that there is the option of more structure when the verb is in T, but not C. There are instances in which morphemes that are not present in the syntax are

inserted by rules of PF without eliminating or changing information which is crucial for semantic intepretation.

I propose that *-si* is a dissociated morpheme, post-syntactically adjoined to T. These features are added in the PF component as dissociated, a term which emphasizes that such material is an indirect reflection of certain syntactic morphemes, features or configurations, and not the actual spell-out of these.

(306)   a. Dissociated Features: A feature is dissociated iff it is added to a node under specified conditions at PF.

   b. Dissociated Nodes: A node is dissociated iff it is added to a structure under specified conditions at PF.   (Embick and Noyer 2007:15)

Typical dissociated morphemes include Case and Agreement and these morphemes reflect certain syntactic properties (or configurations) but do not in any sense contribute these properties to the syntax.

Dissociated morphemes are not interpreted at LF, since they are inserted only at Spell-Out. Their properties either configurational or featural are already present in a syntactic structure before Spell-Out. In the case of *-si*, its properties are clearly configurational as it is specifically linked to T. Its contribution is minimal to syntax since the 3RD SINGULAR features are already expressed and realized by *-n*. Adjunction of this morpheme can only happen in T, which explains why *-si* never appears when the verb is in C. The dissociated morpheme adjoins to the head itself:
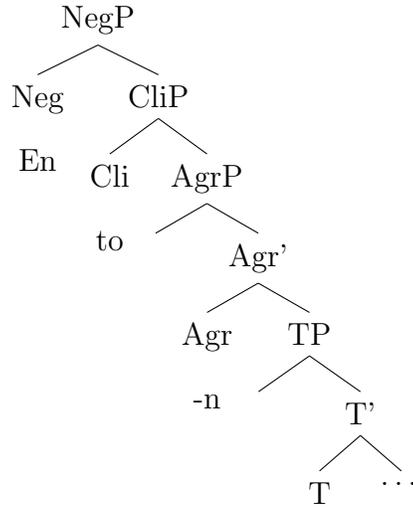
```
                     NegP
                    /    \
                  Neg     CliP
                  En     /    \
                        Cli    AgrP
                         to    /   \
                             Agr'
                             /    \
                           Agr     TP
                           -n     /   \
                                Agr'
                                T'
                               /  \
                              T    ...
(307)                       efa-si
```

Similarly, *-nde* is a suffix that is preferred when the verb is in T. Evidence from the
position of object clitics can show that this is the case.

(308)   a.   Efa -me -(*nde) to.
             eat -1PL -nde   it.CLI
             'We ate it.'

        b.   En   to efa -me (-nde).
             NEG CLI eat -1PL -nde
             'We didn't eat it.'

This morpheme is specific to 1PL and contrary to *-si* appears after agreement. In
other words, the following order is not available:

(309)   * En   to efa -nde -me.
           NEG CLI eat -nde -1PL
           'We didn't eat it.'

Treating *-nde* as another instance of a dissociated morpheme would mean that it is
actually adjoined to the Agr head given the morphological decomposition of the verb
proposed in Chapter 2.

(310)

```
        NegP
       /    \
     Neg    CliP
      |     /    \
     En   Cli    AgrP
           |       \
           to      Agr'
                   /    \
                 Agr     TP
                  |     /  \
              efame-nde   . . .
```
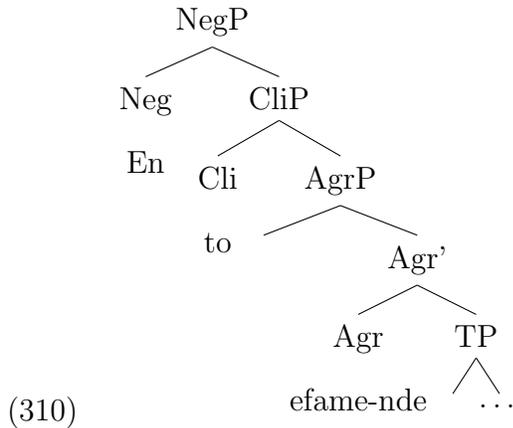
While at a first glance, these two instances of special morphology on the verb, namely
-si and *-nde* may suggest possible allomorphy triggers in particular syntactic configurations,
their optionality and realization of already existing features can be best treated as late
insertion.

The position of the verb still remains relevant as dissociated features adjoin to the verb
only when it is low, in T or in Agr. When the verb has moved to C and forms a complex
head with it, part of the components of that head are not visible any more for insertion of
the late morphemes. The cases of *-si* and *-nde* sensitive to the low position of the verb[4]
show that many languages show discrete pieces in morphology that do not correspond to
heads present in the syntactic derivation, but can only be added as nodes and features at
PF by language-specific rules. Otherwise, if everything is posited in syntax, the presence
of functional heads without semantic content (in cases where Agreement is already realized
by another morpheme) would create a problem for the derivation.

3.8.2   Imperative Morphology as Allomorphy

Another well-known cases of a dependence of the verb morphology to its position or more
generally, its syntactic environment is the case of imperative morphology. Imperative

---

4. This is an observation so far only attested with respect to object clitics. If these suffixes appear on
the verb following the subject, then these are not sensitive to V-in-T but to the object clitic itself. This
remains a question for future work.

forms of the verb are often characterized by distinctive syntax and special morphology. The imperative verb shows a different form and is found in a different position, as seen in the example below.

(311)   a. Du **siehst** das Buch.
           you see   the book
           'You see the book'

        b. Ich weiss das du das Buch **siehst**.
           I   know that you the book see
           'I know that you see the book'

        c. **Schau** auf das Buch.
           Look   at   the book
           'Look at the book'

        d. * Ich weiss dass du das Buch **schau**.
             I   know that you the book look

                                      (Rivero and Terzi 1995 :305)

The special morphology observed is not a matter of mood only, but the syntactic position of the verb. Evidence for this comes from negation, which shows that negated imperatives that force the verb to stay low since the NegP constitutes a minimality barrier, show different morphology compared to cases where the verb is high.

(312)   a. ðe to.

           'Look at it!'

        b. *ðis to.

        c. Men to ðis.

           'Do not look at it!'

        d. *Men to ðe.

Terzi (1999) argues that a strong V-feature in C encodes the logical mood of imperatives, and the V inflected with Imperative morphology must raise overtly to this position. This

process reminds the principle Greed which licenses movement of α only as a step toward satisfying one of its own properties.

(313)   Move raises α to a position β only if morphological properties of α itself would not otherwise be satisfied in the derivation. (Chomsky 1994)

Imperative Vs, according to Terzi (1999), can only be used in imperative sentences and their morphology carries intrinsic logical mood. By contrast, verbs that are used in declaratives and other clauses have morphology that does not carry intrinsic imperative mood. As they point out:

(314)   "If in UG the root C is the designated syntactic slot to encode logical mood, it is natural for the Imperative V feature to be in C in these languages."

This does not clearly capture the facts given that negated imperatives are still imperatives, even if the morphology is not imperative and the verb is not in C. The approach followed here is built on the idea that V is in C and that the special imperative morphology is a property of the landing position that triggers movement. Under a contextual allomorphy analysis then, once movement takes place, the relevant configuration feeds the morphology input, and not the opposite.

The imperative forms of the verb lack the 2ND SINGULAR -*s* agreement suffix in Cypriot Greek, which is instead realized as -$\emptyset$ in the context of C. If the verb moves to C in other cases, then C has a $[+imprf]$ feature that triggers particular realization of morphology.

(315) $[+2\text{SG}] \leftrightarrow \emptyset/\underline{}\text{C}_{+imprf}$

(316)   ðe to.
        'Look at it!'

(317)

```
        CP
         \
          C'
         /  \
        C    CliP
       / \   /  \
     de  C_imprf  to  TP
                     /\
                    ...
```
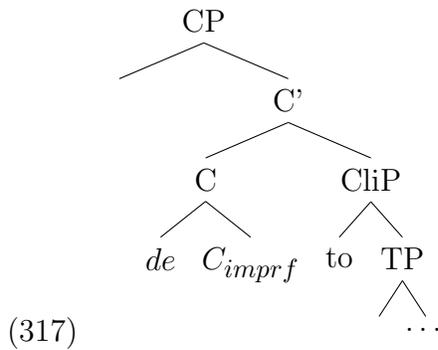
A 2ND PERS IMPOVERISHMENT rule is also proposed in Harris (1998) for all dialects of Spanish to claim that no special 'imperative' morphology is assigned since the rule actually refers to 2ND PERS. Verbs in imperative, to summarize, do not have to have obligatory imperative morphology since the verb position is the condition that defines that.

Under this view of the syntax-morphology interaction, verb movement as a syntactic operation results in particular configurations which are then realized in their morphology with special exponence on the way to PF. A lexicalist approach to the variation in verb form is also possible on the basis of features realized by each separate form. In such an analysis then variation would all be attributed in the lexicon and the different forms would carry the same feature (*efan* or *efasin* 'they ate' would then be free allomorphs of 3RD PLURAL). Th extent to which variation should be attributed to the lexicon or the operations allowed by the grammar of a given language are based on the nature of the grammar architecture assumed correspondingly.

3.9   Summary

The goal of this chapter was to bring together morphological theory, and particularly conditions on allomorphy, and the effect of verb movement and the position of the verb. By where the verb typically moves to C, I argue that Cypriot Greek shows T-to-C movement on the basis of its distribution with object clitics, wh-movement, complementizers and

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negation. Special morphology that always appears when the verb is in T is not necessarily an instance of allomorphy, but as I argue here post-syntactic insertion of dissociated morphemes. Other instances of special morphology on the verb, as in imperatives, are treated as being subject to conditioning of allomorphy. Both of these cases confirm the initial hypothesis that particular syntactic configurations enable the realization of this morphology, either as contextual allomorphy or as additional post-syntactic insertion of morphemes that do not directly contribute to semantics of the rest of the information encoded by the verbal morphology.

CHAPTER 4

CONCLUSION

This dissertation explores conditions on allomorphy by examining data from the morphology and syntax of the verb in Cypriot Greek. Cypriot Greek constitutes a particularly interesting variety of Greek that allows the position of the verb to be flexible raising questions about the clausal properties of verb-initial languages with respect to other languages where the verb is structurally higher, as in several Germanic varieties. With a focus on variation in the morphology of the Cypriot Greek verb and by adopting basic assumptions in Distributed Morphology, the dissertation discusses the existence of morphological conditions on allomorphy and the sensitivity to syntactic configurations, unifying in this way the syntax and morphology of this language.

The first part of the dissertation presents a detailed description and analysis of the verbal morphology by exploring the different exponents and their allomorphs in the morphosyntactic positions realized: verbalizers, Voice, Aspect, Tense and Agreement. The distribution of these is predicted by standard conditions on allomorphy: locality and directionality, for example, that define variation not to be free and uncontrolled, but to be predicted by the context provided by the surrounding elements. Such an approach to grammar demands access to the component of syntax by looking at the projections available in the structure and their features. With the flexibility of form documented here, and probably other undocumented forms, the controlled nature of allomorphy can only be convincing, while language-specific variation with respect to the restrictiveness of each condition is also expected as micro-parametric variation among languages.

The second part of the dissertation reinforces the assumption of the role of syntax in morphological variation by looking even further the sensitivity to syntactic configurations triggering particular realization of the verb's morphology. Contextual allomorphy is the result of a local dependency between the element affected and a trigger, which not only

confirms a predicted distribution of morphological variation in the approach adopted here but also an orderly relation between syntactic operations and morphophonological realization. That is exactly the case with different realizations according to the verb's position in certain Germanic varieties and with special morphology when the verb is in T in Cypriot Greek. The analysis of the syntax of the verb in Cypriot Greek argues that it involves T-to-C movement and that this language uses a CP-recursion structure, while it posits problems to previous syntactic analyses of variation in the verb position. In certain Romance languages, for example, variation is captured with a morphosyntactic parameter and the assumption of the existence of an additional functional projection in their syntax, an analyses that does not hold for the verb syntax in Cypriot Greek. Beyond the analysis itself, the question extends to micro-parameters assumed in explaining variation, in this case in the verb position and the syntactic operations that is dependent upon and the sharing of those by different languages showing the same properties.

The approach adopted here, following the general assumptions of the Distributed Morphology framework, supports the idea that the different morphophonological forms of the morphemes in a word do not belong exclusively to what is understood as morphology, but rather is a connection between particular syntax driven by formal features (*e.g.* movement) and their realization in the phonological component of grammar. These systems provide descriptive adequacy by language-specific rule-based analyses that enable us to locate and understand the mechanisms involved and the locus of variation in the grammar. Morphological variation, as pointed out by Fábregas and Gallego (2014), is arbitrarily associated with the following:

(318)   a. The formal features that exponents spellout might be different or might be distributed differently among the syntactic heads

b. Even if the features and the exponents are identical, the operations that relate those features to exponents might be different in nature, be specified in different ways or even a system might have an extra operation that other systems lack.

c. The exponents themselves might be different, either because their morphophonological properties are distinct or because even when they are identical in their morphophonology they are associated to minimally distinct sets of features.

(Fábregas and Gallego 2014:6)

These three scenarios could be met in variation in different phenomena and across different languages depending on the assumptions made in every case. But importantly, what is highlighted here is the link between morphophonology, functional projections and their morphosyntactic features, which are often taken as the primitives of the lexicon and the core property of any grammatical element in language. While a question of understanding morphosyntactic variation is based on theoretical analyses, it extends to the logical problem of language acquisition, the exposure of the young speaker to all the different possibilities and the order of acquisition of those; all of which remain uninvestigated questions and possible extensions of the current work.

Last, what this dissertation attempts to achieve is the beginning of a more systematic and detailed investigation of a previously understudied variety of Greek. Limitation in the syntax of certain languages may be enriched from evidence on certain 'dialects of the language' and this is evidently one of the goals of this study. With theoretical developments, the tools needed to describe differences between closely related varieties in an explanatory way can explain certain syntactic phenomena and study the properties shared by them contributing in this way in a more complete modeling of the languages and the language family involved and the relevant generalizations at the appropriate level

of abstraction.

APPENDIX A

APPENDIX 1: VERB MORPHOLOGY

VERB CONJUGATIONS

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	xá-n-o	fakk-ó	pon-ó
2SG	xá-n-i -s	fakk-á-s	pon-í-s
3SG	xá-n-i -∅	fakk-á -∅	pon-í -∅
1PL	xá-n-u-men	fakk-ú-men	pon-ú-men
2PL	xá-n-e-te	fakk-á-te	pon-í-te
3PL	xá-n-u-sin	fakk-ú-sin	pon-ú-sin
3PL	xá-n-u-n	fakk-ú-n	pon-ú-n

Table A.1: Non-Past Imperfective Active

VERB CONJUGATIONS

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	xá-s-o	fatʃ-í-s-o	pon-í-s-o
2SG	xá-s-i-s	fatʃ-í-s-i-s	pon-í-s-i-s
3SG	xá-s-i-∅	fatʃ-í-s-i -∅	pon-í -s-i-∅
1PL	xá-s-u-men	fatʃ-í-s-u-men	pon-í-s-u-men
2PL	xá-s-e-te	fatʃ-í-s -e-te	pon-í-s-e-te
3PL	xá-s-u-sin	fatʃ-í -s-u-sin	pon-í-s-u-sin
3PL	xá-s-u-n	fatʃ-í-s-u-n	pon-í-s-u-n

Table A.2: Non-Past Perfective

VERB CONJUGATIONS

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	é-xa-n-a	e-fakk-ú-s-a	e-pon-ú-s-a
2SG	é-xa-n-e-s	e-fakk-ú-s-e-s	e-pon-ú-s-e-s
3SG	é-xa-n-e-∅	e-fakk-ú-s-e-∅	e-pon-ú -s-e-∅
1PL	e-xá-n-a-men	e-fakk-ú-s-a-men	e-pon-ú-s-a-men
2PL	e-xá-n-e-te	e-fakk-ú-s-e-te	e-pon-ú-s-e-te
3PL	e-xá-n-a-sin	e-fakk-ú-s-a-sin	e-pon-ú-s-a-sin
3PL	e-xá-n-a-n é-xa-n-a-n	e-fakk-ú-s-a-n	e-pon-ú-s-a-n

Table A.3: Past Imperfective

VERB CONJUGATIONS

	1ST 'to lose'	2ND-CLASS A 'to hit'	2ND-CLASS B 'to hurt'
1SG	é-xa-s-a	e-fátʃ-i-s-a	e-pón-i-s-a
2SG	é-xa-s-e-s	e-fátʃ-i-s-e-s	e-pón-i-s-e-s
3SG	é-xa-s-e-∅	e-fátʃ-i-s-e-∅	e-pón-i-s-e-∅
1PL	e-xá-s-a-men	e-fatʃ-í-s-a-men	e-pon-í-s-a-men
2PL	e-xá -s-e-te	e-fatʃ-í-s-e-te	e-pon-í-s-e-te
3PL	e-xá-s-a-sin	e-fatʃ-í-s-a-sin	e-pon-í-s-a-sin
3PL	e-xá-s-a-n	e-fatʃ-í-s-a-n	e-pon-í-s-a-n

Table A.4: Past Perfective

APPENDIX B

APPENDIX 2: VERB POSITION

Environment	Verb	Object Clitic	Verb	Example
GROUP A				
Matrix	V	Cl		**Iðe** ton.
				'She saw him'
Embedded (no complementizer)	V	Cl		Nomizi **iðe** ton.
				'She thinks she saw him'
Polar questions	V	Cl		**Iðe** ton?
				'Did she see him?'
(Positive) imperative	V	Cl		**ðe** ton.
				'Look at him'
Topics	V	Cl		Ton Kostin **iðe** ton.
				'Kostis, she saw him'
ðioti 'because'-clauses	V	Cl		ðioti **iðe** ton.
				'Because she saw him'
Negative *endʒe* 'it is not the case that'	V	Cl		Endʒe **iðe** ton.
				'She did not see him'

Table B.2: Verb-Clitic word order

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
Auxiliaries		Cl	V	*iʃe* ton **ði**. 'She had seen him'
Na-clauses		Cl	V	na ton **ði**. 'To see him'
Negation		Cl	V	En ton **iðe**. 'She didn't see him'
(Negative) imperative		Cl	V	Men ton **ði**. 'Don't see him'
Overt focus complementizer *embu*		Cl	V	Ton Yanni embu ton **iðe**. 'Yanni, she saw him'
An-clauses		Cl	V	An ton **ði**. 'If she sees him'
Optative *as*		Cl	V	As ton **ði**. 'Let her see him'
Relative clause		Cl	V	I kufi pu ton **iðe**. 'The snake that saw him'
Apu 'whoever'		Cl	V	Apu ton **ði** protos... 'The one who sees him first'
When-clauses		Cl	V	Pu ton **iðe**. 'When he saw him'
When-clauses		Cl	V	Aman ton **ði**. 'When she saw him'
pu-clauses 'that'		Cl	V	θimume pu ton **iðes**. 'I remember that you saw him'
Subject wh-questions		Cl	V	Pkjos ton **iðe**? 'Who saw him?'
Object wh-questions		Cl	V	Nambu ton **iðe**? 'What saw him?'
Why wh-questions		Cl	V	Jati ton **iðe**? 'Why did it see him?'
Where wh-questions		Cl	V	Pu ton **iðe**? 'Where did it see him?'

Table B.4: Clitic-Verb word order

Environment	Verb	Object Clitic	Verb	Example
GROUP B				
When wh-questions		Cl	V	Pote ton **iðe**? 'When did it see him?'
How wh-questions		Cl	V	Pos ton **iðe**? 'How did it see him?'
Pothen-questions 'where from'		Cl	V	Poθen ton **iðe**? 'When did it see him?'
Embedded subject wh-questions		Cl	V	Ksero pkjos ton **iðe**. 'I know who saw him'
Embedded object wh-questions		Cl	V	Ksero nambu ton **iðe**. 'I know what saw him'
Embedded *why* wh-questions		Cl	V	Ksero jati ton **iðe**. 'I know why it saw him'
Embedded *where* wh-questions		Cl	V	Ksero pu ton **iðe**. 'I know where it saw him'
Embedded *when* wh-questions		Cl	V	Ksero pote ton **iðe**. 'I know when it saw him'
Embedded *how* wh-questions		Cl	V	Ksero pos ton **iðe**. 'I know how it saw him'
Embedded *pothen*-questions 'where from'		Cl	V	Ksero pothen ton **iðe**. 'I know where he saw him from'

Table B.6: Clitic-Verb word order

Environment	Verb	Object Clitic	Verb	Example
GROUP C				
Pos-clauses 'that'	{V}	Cl	{V}	Emaθa pos to **iðen**. Emaθa pos **iðen** to. 'I learned that she saw it'
Oti-clauses 'that'	{V}	Cl	{V}	Ksero oti to **iðen**. Ksero oti **iðen** to. 'I know that she saw it'
Afu-clauses 'after'	{V}	Cl	{V}	Estamatisa afu to **iðen**. Estamatisa afu **iðen** to. 'I stopped after she ' saw it
Epiði-clauses 'because'	{V}	Cl	{V}	Estamatisa epiði to **iðen**. Estamatisa epiði **iðen** to. 'I stopped because she saw it'

Table B.8: Verb-Clitic/Clitic-verb word order

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