

**The Morphosyntax of Argument Realization:
Greek Argument Structure
and the Lexicon-Syntax Interface**

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**The Morphosyntax of Argument Realization:
Greek Argument Structure
and the Lexicon-Syntax Interface**

**De morphosyntaxis van argument realisatie:
Argumentstructuur in het Grieks
en het raakvlak tussen Lexicon en Syntaxis**
(met een samenvatting in het Nederlands)

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Introduction

Modern Greek lacks certain phenomena that are attested in other languages. The following instances of reflexivization (1a) and impersonals (1b) are not acceptable by any native speaker of Greek:

- (1a) *O Yanis ajorastike ena
the-nom Yanis-nom bought-te-3sg a-acc
aftokinito
car-accⁱ
'Yanis bought a car for himself'

- (1b) *Edho, ta trojete sihna
here them-acc eat-te-3sg often
'Here, people / one eat(s) them often'

The equivalent examples are attested in a language like Italian:

- (2a) Gianni si è comprato una macchina
Gianni se has-3sg bought a car
'Gianni bought a car for himself'

- (2b) Qui, li si mangia spesso
here them se eat-3sg often
'Here, people / one eat(s) them often'

Within the framework of Generative Grammar and, more precisely within the Principles and Parameters hypothesis (Chomsky 1981, Lasnik & Chomsky 1993), the contrast between Greek and Italian could be attributed to parametric variation. I will show that there is indeed a

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pattern that underlies these data and I will provide a uniform explanation, on the basis of theta and case (i.e. theta role assignment and case absorption).

More precisely, in chapter 1, I will argue for an analysis of the Italian example in (2b). I will base myself on Cinque's (1988) view on case-absorption (i.e. case reduction) by the Italian clitic *si* and Chierchia's (1995) hypothesis for the availability of an arity operation (i.e. a semantic operation that determines the semantic reading of a given verbal form). The unification of the two proposals is possible within Reinhart's (1997, 2000, 2003) theory of the Theta System, i.e. the interface between the system of concepts and the Computational System. According to Reinhart, different readings of a given verb-entry are the outcome of thematic arity operations. Following work by Reinhart & Siloni (2003a, 2003b), I assume that thematic arity operations are parametrized: based on certain types of reflexivization - for instance *si*-reflexives in Italian, zero-reflexivization in English - Reinhart & Siloni argue that Universal Grammar distinguishes between lexicon languages and syntactic languages. In lexicon languages, reflexivization (and presumably other arity operations) applies in the Lexicon and, more precisely, in a Lexicon as envisaged in the Theta system. In syntactic languages, on the other hand, reflexivization applies in Syntax. The parametric variation regarding the locus of arity operations has important implications regarding case. My aim is to investigate the interaction between arity operations and case.

I argue, following Cinque (1988), that in Italian impersonal constructions the nominative case is absorbed. Nominative is presumably a feature on Tense (Chomsky 1995) and so, if it is absorbed, it is absorbed in the Syntax. The contrast between Italian and Greek, illustrated in (1b) and (2b), can be interpreted in two ways. (i) Italian is a language of the syntactic type and so it allows for impersonals to be formed in the Syntax. Greek, on the other hand, has the lexicon parametric setting and so impersonals are excluded due to nominative case-absorption only being available in Syntax. (ii) Italian and Greek have the same parametric setting, namely the syntactic one and the impersonal puzzle requires an independent explanation. I will argue for the latter.

In chapter 2, I will discuss how the reflexivization parameter, i.e. the parameter regarding the formation of reflexive verbs (Reinhart & Siloni 2003a, 2003b), applies in the case of Greek. Greek shares many similarities with syntactic languages, like French and Italian. Reinhart & Siloni claim that in syntax languages there is ambiguity between reciprocal and reflexive reading in plural, that reflexive nominals are not

attested and reflexivization into Exceptional Case Marking constructions is available. I will show that with regard to these tests, Greek behaves like a syntax language. The most important test is the one regarding productivity. I will show that the formation of reflexive verbs in Greek is an operation far more productive than usually assumed, again indicating that Greek is a syntax language. My argumentation is based on the choice of adjuncts that may appear only with reflexive verbs and on examples from every-day (colloquial) language. However, Greek fails the test of the benefactor: reflexivization of the benefactor is ruled out in Greek (cf. example 1a). In that respect it seems to behave like a lexicon language.

In chapter 3, I will explain why Greek lacks reflexivization (i.e. reflexivization by means of a *te*-suffix) of the benefactor. I will actually link this phenomenon to the lack of impersonals. Specifically, I will argue that the *te*-suffix uniformly absorbs only the accusative case feature of the verb (a claim initially suggested for passivization – Chomsky 1981). A clitic, on the other hand, has a wider case-absorbing capacity.

My hypothesis makes two important predictions: (i) In a suffix-language, reflexivization and reciprocalization cannot target the benefactor, even if the language is set on the syntax parameter. (ii) In a suffix-language, reflexivization and reciprocalization of the possessor is also ruled out. These predictions are borne out in Greek and other languages, namely Russian and Portuguese. There is one issue yet to be addressed, namely instances of passive verbs in Greek followed by a nominal element in accusative case. This seems to go against my hypothesis. However, I will argue that the accusative does not originate from the verb.

Lastly, chapter 4 is an attempt to explain the difference between argumental and non-argumental elements; at least the way that I use these notions here. I establish this difference by comparing reflexive to object clitics. Following Reinhart & Sioni (2003a, 2003b), I argue that the reflexive clitic / suffix affects the argument structure by absorbing a case, but it does not have a theta-role itself and so it is non-argumental. Object clitics, on the other hand, check theta and case and therefore they are argumental elements. I provide further evidence from clitic doubling constructions. For a long time, clitic doubling was considered a problem for any theory that viewed object clitics as arguments. However, I show, on the basis of Greek, how clitic doubling allows us to uniformly view clitics as argumental in all their realizations.

To sum up, the main issue of this thesis is the interaction between theta and case in the module of Syntax. A number of questions are related to this issue: why do thematic arity operations target certain arguments in

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some languages but not in others? Why is case-assignment and theta-assignment related? Moreover, why is theta and case necessary for argument realization? We will look into these questions in more detail.

Chapter 1

Impersonals, theta-assignment and case

1 Introduction

The main issue of this chapter is to explain the contrast between Italian and Greek impersonal constructionsⁱⁱ:

(3a) Qui, *si* balla spesso
here se dance-3sg often
'Here, people / one dance(s) often'

(3b) *Edho, horevete sihna
here danse-te-3sg often
'Here, people / one dance(s) often'

An interesting property of impersonals in Italian is that they can appear with an argument in accusative case (if the verb has accusative) (Cinque 1988, Dobrovie-Sorin 1998), as illustrated in (2b) -repeated here from the introduction:

(2b) Qui, li *si* mangia spesso
here them-acc se eat-3sg often
'Here, people / one eat(s) them often'

Cinque (1988) observes that the presence of accusative case in (2b) is immediately associated with the lack of agreement between the clitic (*li* 'them') and the verb *mangia* 'eats'. Similar is the situation with a DP: in

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the absence of agreement, the DP is, according to Cinque, in the accusative case (although case is not morphologically visible in Italian):

- (4) Qui, *si* mangia spesso gli spaghetti
here *si* eat-3sg often the spaghetti
'Here, people / one eat(s) spaghetti(s) often'

Cinque thus assumes that agreement is associated with the nominative case. An immediate question is whether there is indeed evidence that agreement is linked to the DP bearing nominative case, when the construction has arbitrary interpretation. A comparison of Italian and Greek agreement patterns will shed some light on this issue.

Word order is quite free in the Italian examples with agreement: the DP *gli spaghetti* 'the spaghetti(s)' either follows the verbal form *si mangiano* 'eat' (5a) or it precedes it (5b):

- (5a) Qui, *si* mangiano spesso gli spaghetti
here *si* eat-3pl often the spaghetti
'Here, spaghetti(s) are eaten often'

- (5b) Qui, gli spaghetti *si* mangiano spesso
here the spaghetti *si* eat-3pl often
'Here, spaghetti(s) are eaten often'

In Greek constructions with arbitrary interpretation, the suffix (which I call here *te*-suffix - for further details on the *te*-suffix cf. chapter 2) is used only in cases of obligatory agreement. When agreement is obligatory in Greek, the nominative case is also obligatory, independent of word order.

- (6) Edho, (o bakaliaros) trojete sihna
 here the-nom cod-nom eat-te-3sg often
 (o bakaliaros)
 the-nom cod-nom
 ‘Here, (cod) is eaten often (cod)’

The construction is unacceptable if the DP appears in plural, while the verb is in singular, irrespectively of word order:

- (7a) *Edho, (i bakaliari) trojete sihna
 here the-nom cods-nom eat-te-3sg often
 (i bakaliari)
 the-nom cods-nom
 ‘Here, (cods) is eaten often (cods)’

In addition, the construction is unacceptable if the DP is in accusative (case is visible on the DPs in Greek):

- (7b) *Edho, (ton bakaliaro) trojete sihna
 here the-acc cod-acc eat-te-3sg often
 (ton bakaliaro)
 the-acc cod-acc
 ‘Here, (cod) is eaten often (cod)’

The DP in accusative appears with a verb without *-te*:

- (7c) Edho, trone sihna (ton) bakaliaroⁱⁱⁱ
 here eat-3pl often (the-acc) cod-acc
 ‘Here, people eat cod often’
 ‘Here, they eat cod often’

The contrast between the examples (7b) and (7c) is attributed to the use of very different syntactic constructions. In (7c), the phonologically empty pronoun (*pro*) occupies the subject position and the non-agreeing DP is the object of the verb, while (7b) is an instance of passivization. In the latter, the verb carries the suffix *-te*. In passive constructions, the theme argument is assigned nominative case and it agrees with the verb. So, agreement is linked to nominative case in instances of passivization. This means that the cases like (5a) and (5b), are in fact distinct from the structures under consideration (2b) – they are instances of impersonal passives.

We concentrate here on pure impersonal constructions, i.e. constructions with “pure impersonal reading that is only available with transitive and unergative verbs” (Cinque 1988:542), where a DP may appear in the accusative. The availability of such constructions in Italian, but not in Greek will be explained on the basis of theta and case (i.e. theta-role assignment and case absorption). First, I will present the framework that provides the means to explain the impersonal construction, namely the Theta System. In section 3, I will elaborate on the analysis.^{iv}

2 The theoretical framework: theta-roles, case and thematic arity operations

There is a long debate in the literature of generative grammar concerning argument alternations. Researchers have conflicting views regarding the way that argument structure is realized. One possible option is that argument structure changes are the product of the module of the Lexicon (cf. for example Grimshaw 1982, Williams 1981). Another hypothesis is that argument structure can be affected in the module of Syntax, or to put it differently, that the argument structure of a predicate can be read off by syntax directly (cf. Keyser & Roeper 1992, Hale & Keyser 1993, Borer 1994, 2003, Anagnostopoulou & Alexiadou 2003, Reuland 2001, and many others). This issue is immediately related to the means that are involved in argument alternations. Specifically, verbal alternations are either the outcome of lexico-semantic operations (existential binding, semantic identification) or of (morpho)-syntactic processes (chain formation).

For example, Grimshaw (1982, 1990) suggests a model in which a grammatical argument is deleted and a clitic is inserted as a marker of

intransitivity in the Lexicon. Romance *se*-clitics are thus viewed as ‘valency reducing morphemes’ in the case of reflexives, middles and inchoatives in French. The object is realized in the subject position, resulting in a Syntax that does not directly reflect the different argument structures, nor is involved in accounting for the distribution of the ‘reflexive’ morpheme. Reuland (2001) discusses similar phenomena for Dutch. He gives a pure syntactic analysis of the Dutch reflexive clitics *zich*: the clitic *zich* is viewed as an argument of the verb or part of an argument chain (i.e. it has case and theta-role). Note here that, according to Reuland, Syntax does not determine the valency, but its output is checked with the valency, and the derivation is marked anomalous at the Conceptual-Intentional interface when there is a mismatch. This actually leads us to the intermediate approaches.

Burzio (1981, 1986), Everaert (1986), among others, suggest that argument alternations involve the module of the Lexicon, but it is directly reflected in Syntax. The Lexicon is relevant due to the existence, according to Burzio, of lexical rules that may, for example, delete an argument and insert a weak reflexive. The Syntax is relevant because, according to him, the object may reach the structural subject position via NP-movement. Everaert follows Burzio in the assumption that arity reduction applies in the Lexicon, but argues that, for Dutch, the presence of the valency reduction marker *zich* is accounted for in Syntax.

On one point all theories seem to agree: case-assignment properties and theta-assignment properties of a predicate are interdependent. This was first discussed in Burzio (1981, 1986). Burzio argued that the lexical encoding of case features and thematic structure are linked. It is encoded in Burzio’s generalization in (8) (Burzio 1981):

(8) Burzio’s generalization

*If and only if a verb assigns a thematic role to the subject position,
it will be able to assign accusative case to its object.*

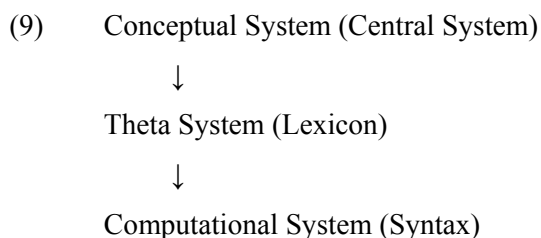
In this dissertation I will argue for the interdependence of theta-assignment and case, leaving open whether that should be formulated as in (8). The theoretical framework that I will use for my argumentation is the Theta System (Reinhart 1997, 2000, 2003), which I will discuss in section 2.1.

Lastly, I assume that both the Lexicon and the Syntax are relevant for argument realization, following Reinhart (2003) and Reinhart & Siloni (2003a, 2003b). Reinhart & Siloni argue that argument structure in the Lexicon is crucial (contra Borer 1994, 2003 and Marantz 1997): thematic arity operations must be able to apply in the Lexicon. On the other hand, some of the arity operations can take place also in the Syntax (this question is parametrized - I will return to this issue in chapter 2). First, I will present the Theta System.

2.1 Reinhart's Theta System

Theta-roles are usually defined in semantic terms (e.g. 'agent', 'theme', 'patient' etc.) already familiar from traditional grammar. According to Reinhart (1997, 2000, 2003), theta-roles are encoded in the form of feature clusters and the traditional labels are linked to different feature combinations or value specifications (cf. also here Jackendoff 1990, Dowty 1991, Manzini and Roussou 2000). The system that enables such encoding is the Theta system.

Reinhart (1997, 2000, 2003) argues that the Theta system is the interface system of the Conceptual System, i.e. the central part of our system of thought, and the Computational System (Syntax):



Through the Computational System, the derivation reaches the Logical Form (LF), where the derived structure becomes interpretable.

The main idea underlying the Theta system, as proposed and developed in (Reinhart 1997, 2000, 2003), is that each verb-concept corresponds to a single lexical entry. The different forms of the same entry are the outcome of thematic arity operations. In a way, we could think of thematic arity operations as mechanisms that produce the different semantic functions of a verb (diatheses; cf. chapter 2), for example,

reflexive, passive, unaccusative or causative. The idea that there is only one basic lexicon entry for each verbal concept is formulated as the Lexicon Uniformity Principle (Reinhart 1997, 2000):

(10) Lexicon Uniformity Principle

Each verb-concept corresponds to one lexical entry with one thematic structure. → The various thematic forms of a given verb are derived by lexicon-operations from one thematic structure.

The Theta System consists of coded concepts, thematic arity operations and marking procedures. The verbal concepts are coded in the form of features. Two features are used:

(11a) /m for ‘mental state’

(11b) /c for ‘cause change’

The two features may appear in two values: /+m or /-m. The /+m indicates that some mental state is involved, while the /-m represents lack of any mental state. The notion mental state is related to animacy. That is, only animate arguments may have a mental state. The /+c indicates that there is cause of change, while the /-c indicates the absence of any cause of change.

The combination of the features and feature values yields according to Reinhart the following coded concepts:

(12) The feature clusters

[-] clusters	[-c-m] (theme)
	[-c] (goal, ...)
	[-m] (subject matter, ...)

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[+] clusters	[+c+m] (agent)
	[+c] (cause)
	[+m] (experiencer I)
‘mixed’ clusters	[-c+m] (experiencer II)
	[+c-m] (instrument)

For example:

(13a) John kicked the ball to Mary
[+c+m] [-c-m] [-c]
“agent” “theme” “goal”

(13b) John worries about his health
[-c+m] [-m]
“experiencer” “subject matter”

(13c) The wind damaged my apple tree
[+c] [-c-m]
“cause” “theme”

I assume here Reinhart’s notational system:

(14) Notational system
[α] = Feature cluster α .

/ α = Feature (and value) α .

(E.g. the feature /+m occurs in the clusters [+c+m], [-c+m] and [+m])

[/α] = A cluster one of whose feature is /α.
(E.g. [-c] clusters are [-c+m], [-c-m] and [-c])

[-] = A cluster ALL of whose features have the value -.
(E.g. [-] clusters are [-c-m], [-c], [-m])

The lexicon entry of the verb is also determined by a number of rules, namely the lexicon marking rules. These rules apply to the verb-entry before it enters syntactic derivations. More precisely, if a verb-entry consists of at least two theta-clusters (i.e. given a n-place verb-entry, n>1), two types of indices may be inserted on the relevant theta-clusters:

(15a) Mark a [-] cluster with index 2 (internal).

(15b) Mark a [+] cluster with index 1 (external).

In more detail, only the theta-clusters specified either as [-] or as [+] are marked with an index. The clusters [-c-m] (theme), [-c] (goal) and [-m] (subject matter) are marked with the index 2 because they are specified for the value [-] and therefore they are always merged internally.

The clusters [+c+m] (agent), [+c] (cause) and [+m] (experiencer I) are always checked by DPs externally (i.e. in the subject position): they are marked with the index 1, due to their [+] value.

The indices are only inserted if the verb-entry has at least two theta-clusters. If a verb-entry has only one cluster, say the theta-cluster [-c-m] (theme), the relevant DP will be merged externally because the marking procedures do not apply. Reinhart argues that this is the case with theme unergative verbs (for example: “The diamond glows”).

The mixed clusters, namely the [-c+m] (experiencer II), and [+c-m] (instrument) do not get any index. An immediate question occurs: are mixed theta-clusters checked by DPs in the object position or in the subject position? Reinhart argues that mixed theta-clusters have the property of being checked either in the object position or in the subject position depending on other factors, like the accusative case feature.

The accusative feature is specified on the verb, when relevant:

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- (15c) If the entry includes both a [+] cluster and a fully specified cluster [/a/, -c] (that is, a cluster that contains [-c] and some other feature), mark the verb with the ACC feature.

Furthermore, Reinhart suggests that a number of lexicon rules determine the way that arguments are merged in the Computational System (Syntax). In particular:

- (16a) When nothing rules this out, merge externally.
- (16b) An argument realizing a cluster marked 2 merges internally; an argument with a cluster marked 1 merges externally.

Rule (16a) states that, if nothing prevents it, a DP will be merged VP-externally, i.e. in the subject position. What could prevent a DP from merging externally would be, for example, the presence of the accusative case feature on the verb. The accusative feature would force a DP to merge VP-internally. We will return to this shortly.

Let us first see how marking procedures apply in the Theta System. Say we want to represent the lexicon entry of the verb 'drink'. The verb takes two theta-clusters, an agent and a theme:

- (17a) drink [+c+m] [-c-m]

So, the verb-entry has two theta-clusters ($n > 1$) and therefore marking will apply. Given the lexicon marking rules, (15a) determines that the theme [-c-m] is marked with the index 2, because it consists of two [-] features, namely /-c and /-m, while (15b) determines that the agent [+c+m] is marked with the index 1, because it consists of two [+] features, namely /+c and /+m. The verb-entry includes a [+] cluster, namely the agent [+c+m] and a fully specified cluster, namely the theme [-c-m]. Therefore, following rule (15c), the verb-entry will be specified with the accusative feature:

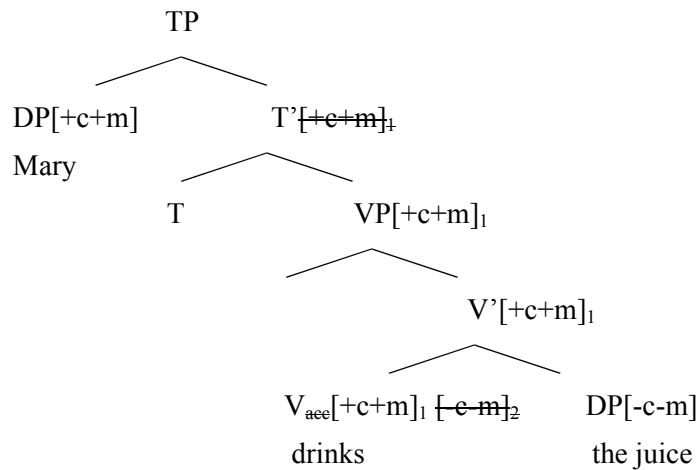
(17b) Theta System (Lexicon)

drink_{acc} [+c+m]₁ [-c-m]₂

The Theta System determines the merging procedures at the Computational System. Specifically, the theta-cluster marked 2, namely the theme [-c-m]₂, will be merged internally and the theta cluster marked 1, namely the agent [+c+m]₁, will be merged externally. As we see in (17d), a DP checks the theta-cluster corresponding to the external theta-role. So, the external theta-role is not assigned to “small v” à la Chomsky (1995). I also assume here that the subject is merged directly in SpecTP.

(17c) Mary drinks the juice

(17d) Computational System (Syntax)



So, the DP that checks the theta cluster [-c-m] also checks the accusative feature of the verb. This is due to Reinhart’s rule: the accusative feature is always checked in the Syntax, VP-internally (following Chomsky 1995 according to which the accusative feature is legible only to the Computational System and not to the inference systems – for example, propositional logic).

- (18) *“Only DPs with a fully specified cluster [a/ b] are able to check the ACC” (Reinhart 2003).*

This rule has certain effects on syntactic structure. The most prominent example is the verb “worry” and its lexicon verb-entry:

- (19a) Worry_(acc) ([+c]₁, [-c+m], [-m]₂)
 “cause” “experiencer” “subject matter”

Reinhart observes, following Pesetsky (1995), that not all theta clusters of the basic verbal entry can be realized simultaneously:

- (19b) *The doctor worried Max about his health
 [+c]₁ [-c+m] [-m]₂
 (cause) (experiencer) (subject matter)

The ungrammaticality of the above example indicates that only two of the theta-clusters may be realized. In the Theta system, this is captured by the distinctness condition that allows unary clusters to realize together if there is a feature they share. This entails that only one of the clusters [+c] and [+m] can be actually realized in a given derivation. One option would be to realize the cluster [+c] and the cluster [-c+m], which correspond to the subject matter and the experiencer respectively. This will lead to the derivation: “The doctor [+c] worried Max [-c+m]”.

The other option is to realize the cluster [-m] and the cluster [-c+m], which correspond to the subject matter and the experiencer respectively. The subject matter [-m] will merge internally because it is marked with the index 2. An immediate question is whether we can determine if the experiencer will be merged VP-internally or externally, given that it bears no index at all. It is actually the accusative feature, which determines that the experiencer will be merged internally.

More precisely, Reinhart argues that the DP that checks the subject matter cluster [-m] VP-internally (because it is marked with the index 2), cannot check the accusative feature of the verb (see 18). The subject matter [-m] is not a fully specified cluster and so the DP that checks the

subject matter cluster cannot check the ACC. Still, the ACC feature needs to be checked by LF for the derivation to converge, because it is an uninterpretable feature. Reinhart thus assumes that the DP that checks the experiencer cluster [-c+m] is merged VP-internally. From the VP-internal position, the experiencer also checks the accusative feature of the verb. This is possible by (18), because it is a fully specified cluster ([-c+m]). The Extended Projection Principle (Chomsky 1995), which requires the structural subject position to be filled, forces movement of the subject matter [-m] to the (structural) subject position. This movement has, according to Reinhart, certain effects on binding phenomena and expletivization. Specifically, a quantifier within the experiencer [-c+m] may have scope over a pronoun within the subject matter argument [-m] (in other words, variable-binding of the experiencer into the subject matter is possible) as in (19c):

- (19c) [His_i health]₁ worried every patient_i e₁
 [-m] [-c+m]
 (subject matter) (experiencer)

In addition, Reinhart's analysis predicts that an expletive can be inserted in the (structural) subject position if movement does not take place. The expletive checks the EPP feature and both arguments, experiencer [-c+m] and subject matter [-m] are merged internally. This prediction is borne out:

- (19d) It worried him that he failed
 [-c+m] [-m]
 (experiencer) (subject matter)

Summarizing, Reinhart (2000, 2003) argues that the accusative case is specified in the Lexicon in the form of a feature (the ACC feature). The accusative feature is checked in the Syntax by an appropriate nominal element. In other words, structural case is specified in the Lexicon as a feature on the verb (cf. also Everaert 2003 for a discussion on case-related issues within the Theta System). Not much is said about inherent case, at least at the present stage of the theory.

Note here that the standard assumption had been that it is the inherent case that is specified in the Lexicon, while the structural case is a syntactic relation. For example, in the Government and Binding theory (Chomsky 1981), structural case is introduced as a restriction on phonetically realized nominal phrases: every phonetically realized NP must be assigned (abstract) case (case filter). Abstract case is viewed as an expression of a syntactic relation. That is, case assignment is realized under specific syntactic configurations (government). The next step was to apply checking theory on case, in accordance with a number of other phenomena (Wh-movement, focus etc.). In Checking Theory, as part of the Minimalist Program (Chomsky 1993, 1995), different cases are viewed as features that need to be checked by LF given their uninterpretable nature. Nominative and accusative are assigned (or checked) under Specifier-Head agreement (for an overview of the different approaches towards case cf. Blake 1993). Based on the latter hypothesis, Reinhart (1997, 2000, 2003) introduces the accusative case feature on the lexicon entry of the verb. Nothing is said about the nominative case feature, I assume here in line with Chomsky (1995), that it is a feature on Tense and so it is not specified on the lexicon entry of the verb.

As for inherent case, Belletti & Rizzi (1988) show how all instances of inherent case could be viewed as lexicon specifications. The Lexicon, according to Belletti & Rizzi, consists of two components: (a) lexical representations and (b) a set of principles guiding the mapping of lexical representations onto deep syntactic configurations. The lexical representations involve at least two specifications: a θ -grid and a case-grid, which are associated with each other. The θ -grid is a partially unordered list of θ -roles. The external θ -role, i.e. the θ -role assigned to the subject position, is singled out through underscoring (underscore θ' , where θ refers to any role). The case-grid is a specification of the inherent cases idiosyncratically selected by a verb. Each inherent case is linked to a specific slot in the θ -grid. Structural (accusative) case is not specified in the case-grid, given that its assignment capacity is rule-governed: V (the verb) is a structural case assigner if it has an external argument. The set of mapping principles determines the mapping of verbal entries to syntactic representations. These principles are viewed as a component of the Projection Principle. Their effect is the arrangement in specific configurations of the structural positions projected from the members of a θ -grid. For example, the lexicon specification of the verb *piacere* 'please' is as follows:

(20) *piacere*: θ -grid [Experiencer, Theme]

|
Case-grid [Dat -]

The experiencer argument is linked to inherent dative case, while the theme argument will be assigned structural accusative case by the verb, but no lexical specification is required. We should note that Reinhart argues that the thematic composition in (20) is different than that in the “worry” type verbs discussed above. *Piacere* ‘please’ is a two place unaccusative verb selecting [-c] and [-c-m] cluster. Such cluster-compositions receive inherent (dative) case also in the Theta system.

In my analysis, I will concentrate on the role of the accusative feature, which I assume is specified on the lexical verb-entry (along the lines of the lexicon marking rules) as stated by Reinhart (2003). In section 3.2, I will discuss how thematic arity operations interact with case.

2.2 Thematic arity operations and case

The notion ‘arity operation’ was initially used to define lexico-semantic changes. A clear example of an arity operation is given in Chierchia (1995) for the case of impersonals.

(21) In Italia, *si* beve molto vino
 in Italy se drinks lot of wine
 ‘In Italy people drink a lot of wine’

Chierchia defines the arity operation as follows:

- (22) *The clitic ‘si’ is interpreted as an operation that takes a property and does two things to it:*
1. *It closes existentially the argument corresponding to the subject and*
 2. *It restricts the range of such an argument to groups of humans (perhaps drawn from a contextually specified set).*

The arity operation, according to Chierchia, is a mechanism that changes certain characteristics of the predicate (property) and determines how certain arguments will be interpreted.

Reinhart (1997, 2000, 2003) argues that the different readings of a given verb are the outcome of lexical or syntactic mechanisms that alter its thematic properties. Two types of arity operations are distinguished: (i) arity operations that reduce the number of theta-roles of the verb and (ii) arity operations that augment the number of theta-roles. Specifically, reduction and saturation are arity operation of the first type. Saturation gives rise to passive constructions, while reduction gives rise to unaccusatives (external reduction or expletivization) and reflexives (internal reduction). Causativization (agentivization) is an operation that augments the number of theta-roles of a given verb: it creates a new cluster (theta-role).

Causativization may apply either to a one-place or to a two-place verb and it consists of two parts: (i) the feature specification of a given cluster changes and (ii) an agent [+c+m] role is added.

Reinhart (2003) defines causativization as follows:

(23) Causativization

(a) *Decausativize*: Change a /+c feature to a /-c feature

walk ([+c+m]) → walk ([-c+m])

(b) *Agentivize*: Add an agent role

walk ([+c+m]), ([-c+m])

First, the /+c feature of the agent role [+c+m] of the basic verb-entry changes to /-c giving rise to the cluster [-c+m]. Next, an agent role is added and so the output is specified with the two clusters: ([+c+m]) and ([-c+m]). This gives rise to a causative reading, for example:

(24) John walks the dog to the park

The thematic arity operation of saturation, on the other hand, reduces the number of syntactic arguments. In particular, saturation involves an

existential closure of one of the arguments. This argument will not be present in the Syntax. The existential quantifier signals the existential closure of a theta-cluster:

(25) Saturation (Reinhart 2003, following Chierchia 1989)

- (a) wash (θ_1, θ_2)
- (b) Saturation: $\exists x$ (wash (x, θ_2))

Saturation mainly gives rise to a passive reading. For example:

(26) [The baby]_i was washed t_i

Reduction, like saturation, has the effect of preventing a potential argument from being realized in the Syntax. However, reduction differs from saturation in that the former reduces one theta-cluster while the latter existentially binds the theta-cluster. More precisely, reduction applies to verbs with at least two theta-clusters, one of which is checked externally (i.e. it is marked as 1 by the lexicon marking rules in 15b). The operation may reduce the theta cluster marked 2 (i.e. corresponding to an internal argument). This is internal reduction or reflexivization. Another option is to reduce the theta cluster marked 1 (i.e. corresponding to an external argument). This is the case of external reduction or expletivization. Reinhart argues that this operation only applies to reduce a [+c] cluster (corresponding to a cause theta-role) hence it can also be viewed as decausativization. I will only give an example of external reduction here.

Reinhart (2003) defines external reduction as follows:

(27) Expletivization: Reduction of an external [+c] role

- (a) $V_{acc}(\theta_1 [+c], \theta_2) \rightarrow \underline{R_e(V)}(\theta_2)$
- (b) $\underline{R_e(V)}(\theta_2) = V(\theta_2)$

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The outcome of external reduction is a verb with an unaccusative reading. For example:

(28) The window broke

The outcome of internal reduction is a reflexive verb, like:

(29) John washes

In chapter 2, I will discuss internal reduction in more detail. As we will see, Reinhart & Siloni (2003a, 2003b) suggest, on the basis of internal reduction (reflexivization), that the arity operations apply either in the Lexicon or in the Syntax.

In lexicon operations, accusative is uniformly reduced when the thematic arity operation of reduction or saturation applies (Reinhart 1997, 2000, 2003).

Note here that Reinhart & Siloni (2003a) distinguish between thematic and structural case. Thematic case is a universal property of languages, while structural case is parametrized. In accordance with the case filter, DPs are assumed to require structural checking. A dummy case checker is inserted if the language has only thematic case (cf. Danon 2002, who proposed a similar idea for the analysis of case in Hebrew). If a language has both, its case can be described as “strong”; if it only has thematic case, it can be described as “weak”.

In syntactic operations, if case is weak, the morphology (e.g. the clitic *se*) eliminates the case feature entirely (Spanish, English, Hebrew). If case is strong (Italian, French), on the other hand, the morphology (*se*) reduces the case feature, but not entirely: it absorbs the thematic case but not the structural case. Inflection absorbs the case residue, an operation that is morphologically transparent when an auxiliary is present. The idea is spelt out in greater detail in Reinhart & Siloni (2003b) (based on joint work with Eric Reuland).

The distinction between structural and thematic case is not at stake here. My basic aim is to establish the role of the reflexive clitic / suffix as a case absorber and to suggest that there is a pattern. That is, the suffix obligatorily absorbs only the accusative feature of the verb, while the clitic’s range of case-absorption is wider. This explains the availability of

impersonals in Italian (clitic language) but not in Greek (suffix language). In order to show that this claim is valid, I will proceed as follows:

(i) I will show that Greek has the syntax setting of the parameter – chapter 2.

(ii) I will argue that the suffix absorbs only the accusative feature of the verb in all instances of thematic arity operations – chapter 3.

First, however, I will present the analysis of impersonal constructions in more detail.

3 The analysis of impersonals

Let us look at the lexicon entry of the Italian verb *mangiare* ‘eat’. The verb selects two theta-clusters, one corresponding to the theme and another corresponding to the agent. The two theta-clusters are specified as [-c-m] and [+c+m] respectively. Given the lexicon marking rule in (18): “*Only DPs with a fully specified cluster [a/ b] are able to check the ACC*” (Reinhart 2003), the verb is also specified for the accusative feature. Finally, the /+/ cluster (agent [+c+m]) gets the index 1, whereas a /-/ cluster (theme [-c-m]) gets the index 2. The verbal lexicon entry is thus represented as follows:

(30) *mangiare* ‘eat’_{acc} [+c+m]₁, [-c-m]₂
 (agent) (theme)

The verb *mangiare* ‘eat’ gives rise to impersonals such as (3a) and (2b) repeated below:

(3a) Qui, *si* balla spesso
 here se dance-3sg often
 ‘Here, people / one dance(s) often’

- (2b) Qui, li *si* mangia spesso
 here them-acc se eat-3sg often
 ‘Here, people / one eat(s) them often ’

Our starting point is that an arity operation takes care of the agent role (i.e. the external role) in both derivations. According to Chierchia (1995), the clitic *si* is an arity operation itself (cf. definition in 22) and therefore has to be present in all the relevant constructions (i.e. in all the constructions with arbitrary subject interpretation). Within the Theta system, the role of the clitic *si* is taken to be different. *Si* has to be present when an arity operation applies in the Syntax, but it is not triggering the operation itself. Rather, *si* is responsible for absorbing an otherwise superfluous case (cf. Reinhart & Siloni 2003b) and the arity operation applies on the theta grid of the verb. We may thus conclude that the present hypothesis is a unification of Cinque’s (1988) hypothesis that *si* is a case absorber and Chierchia’s (1995) suggestion that an arity operation gives rise to arbitrary subject interpretation. The unification is possible within Reinhart’s (1997, 2000, 2003) framework. As we will see in more detail, Marelj (to appear) offers an analysis of ARB saturation for middles within the Theta System (this possibly gives rise to all instances of arbitrary subject interpretation; also to impersonals).

Let us now turn to my central question of the case realization in (2b). There are two ways the derivation could proceed. I assume, following Reinhart & Siloni (2003b), that, given a verb like *mangiare* ‘eat’, the clitic *si* can absorb either the nominative or the accusative case. So, there are two options: either accusative case is absorbed, or nominative case is absorbed.

3.1 Accusative absorption

If the accusative case is absorbed, the remaining theme DP must merge VP-internally because of the lexicon rule that marks it with the index 2, cf. (15a). However, we cannot stop there, because the Extended Projection Principle (EPP) must be satisfied and the DP, which cannot get accusative, since there is none, must still get case. We will turn to the way this is addressed below.

There remains a question of the theta-role assignment. Since the accusative case was reduced, there is no way to realize both theta

arguments. The internal role is realized internally due to the index 2 and moves to subject position (to satisfy the EPP and pick up nominative case). So, the external theta-role cannot be realized in Syntax. This is the standard case with passives. Indeed, the operation applying here is saturation. However, the saturation involved here is of a special kind, which Marelj (to appear) developed for middles, and which she labels, following Chierchia (1995), ARB saturation. In its semantics, the operation is the one proposed by Chierchia (1995 cf. definition in 22). The only difference between passive saturation and middle saturation according to Marelj is in the kind of variable bound by the existential operator: while in passive it is an individual variable, in middles the existential operator binds a Chierchia type ARB variable. The particulars of the semantic mechanism that applies in impersonals are beyond the scope of this chapter, but we could assume that it is of the same type.

The EPP-feature and the case of the remaining DP need to be dealt with in more detail. There are two ways to proceed, just as the situation is with normal passive saturation: one is to move the DP to the subject position, where it both gets nominative case and satisfies the EPP:

- (5b) Qui, gli spaghetti *si* mangiano spesso
 here the spaghetti si eat-3pl often
 ‘Here, spaghettis are often eaten’

Except for this arbitrary interpretation, the construction in question is just standard passive. So, these are impersonal passives. In many languages, this is the only option. However, in pro drop languages there is another option: an empty expletive for the EPP. This would result into the following example:

- (5a) Qui, *si* mangiano spesso gli spaghetti
 here si eat-3pl often the spaghetti
 ‘Here, spaghettis are often eaten’

The clitic *si* is a non-argumental case-absorbing element, because it does not bear any theta-role. If the clitic *si* is not argumental, an empty expletive is required to satisfy the EPP. What about case? The DP could

only get the nominative. The question then is how the nominative is assigned without movement. I suggest that this is analyzed similar to the analyses in which nominative is assigned ‘long distance’ in unaccusative constructions with an overt expletive in English:

(31) There came three men

The verb ‘come’ is an unaccusative verb and so it does not have an accusative case feature; the DP ‘three men’ receives nominative case being part of the [there-three men] chain.

3.2 Nominative absorption

If the clitic *si* absorbs nominative, the accusative will still be available, so it must be checked by an argument. The argument inserted will stay in situ. However, no DP can be inserted in subject position, since there is no case for it now.

What about the external theta-cluster that cannot be assigned? The same operation of arbitrary saturation will apply here. Because in both the previous structure (i.e. 5) and in the present one the same operation applies, the two are so close in meaning, which may be the reason why they were not clearly distinguished before. To sum up, the presence of *si* takes care of the nominative case, but the thematic role is absorbed at LF by the operation of ARB saturation.

We are left with the problem of satisfying the EPP. A null expletive is assumed to check the EPP feature. Hence, this is only possible in pro-drop languages. Evidence that this is the case can be derived from raising verbs, which do not assign an external theta-role. There is a mechanism available for EPP checking in Italian constructions with raising verbs, which renders the following example acceptable^v:

(32) Sembra che i bambini abbiamo
 seems-3sg that the children have-3pl
 freddo
 cold
 ‘It seems that the children are cold’

In (32) the raising verb *sembra* ‘seems’ has only one theta-role to assign. This is assigned to the embedded clause *che i bambini abbiano freddo* ‘that the children are cold’. There is thus no other theta-role to be assigned to the element that occupies the subject position. So, the null expletive that is inserted to check the EPP bears no theta-role. A null expletive thus differs crucially from a subject *pro*: the former does not bear any theta-role, while the latter is an argument that realizes the external theta-role.

Cinque (1988) suggests that *pro* is inserted in subject position when the argumental clitic *si* is used in Italian impersonal constructions. The empty element (*pro*) is thus not assigned any theta-role. An immediate question is raised: why is *pro* introduced, if *si* is argumental? In the present work, I clearly distinguish between argumental and non-argumental clitics. Argumental clitics, for instance object pronominal clitics, bear a theta-role and check case. Non-argumental elements (reflexive clitics), on the other hand, do not bear any theta-role but function in the Syntax as case absorbers (chapter 4 deals with the distinction between argumental and non-argumental clitics).

If a null expletive is available in (32), it is also available in (3a) and (2b) repeated below:

(3a) Qui, *si* balla spesso
 here se dance-3sg often
 ‘Here, people / one dance(s) often’

(2b) Qui, li *si* mangia spesso
 here them-acc se eat-3sg often
 ‘Here, people / one eat(s) them often’

So, the null expletive differs from the arbitrary *pro* in that it is not assigned a theta-role. Greek too is a pro-drop language. However, I suggest here that the *te*-suffix, contrary to the Italian clitic *si*, has the property of absorbing accusative only (we will return to this issue in chapter 3) and so Greek lacks impersonal constructions that are the outcome of nominative case absorption (Greek only has impersonal passives):

- (1b) *Edho, ta trojete sihna
 here them-acc eat-te-3sg often
 ‘Here, people / one eat(s) them often’

3.3 Predictions

The analysis proposed here makes the following prediction. If, in Italian, a null expletive is available in the structural subject position in the case of raising verbs and impersonal constructions, it is predicted that a null expletive would also be available with unaccusatives, that is constructions in which the subject is base-generated post-verbally (i.e. VP-internally, in the canonical object position). This is borne out:

- (33) Sono arrivati tre ragazze
 are-3pl come three girls
 ‘Three girls came’

The present analysis that links the clitic *si* with the application of an arity operation makes a further prediction: *si* should be incompatible with raising verbs, where no arity operation takes place. This is borne out, as shown by the unacceptable example below:

- (34) **Si* sembra che i bambini abbiamo
 si seems-3sg that the children have-3pl
 freddo
 cold
 ‘It seems that the children are cold’

Note here that unaccusative verbs that also lack an external theta-role sometimes appear with the clitic *si*, as illustrated in (35). An immediate question is what exactly allows this.

- (35) Spesso *si* arriva in ritardo
 often *si* arrive-3sg in delay
 ‘One arrives often late’

There is an answer to this in Reinhart’s Theta System. Unaccusative formation is uniformly and universally obtained by expletivization reduction, that is reduction of the external theta-role. This arity operation is not parametrized and it can apply only in the Lexicon. However, the occurrence of *si* does not violate the generalization regarding case-absorption, namely that *si* is always associated with the application of an arity operation. The verb *sembra* ‘seem’, on the other hand, is not derived by any arity operation in the Lexicon. It is a verb with two internal arguments (goal and theme-proposition). The lexicon marking procedures entail that it must have no external subject, hence it is unaccusative. There is only one remaining question. When the operation applies in the Lexicon, the *si* is not obligatorily required (many unaccusative verbs do not take it). The same is true for Greek – there are some unaccusatives that take the suffix *-te* (e.g. *erhome* ‘come’) and others that do not (*ftano* ‘arrive’, *fevjo* ‘go’). There is no systematic account for the instances where the arity morphology (clitic *si* in Italian) is also listed in the Lexicon, and the unaccusative verbs selecting this morphology vary from language to language.

To sum up, the clitic *si* in Italian must always be present when the arity operation applies in the Syntax (cf. impersonals), while it is optionally present when the arity operation applies in the Lexicon (unaccusatives). The clitic *si* is never present in the absence of any arity operation (raising verbs).

In a language like Greek, arbitrary subject interpretation must be realized without any clitic / affix on the verb. The example below is ambiguous between arbitrary and referential reading of the subject. It is only contextual considerations (pragmatic or extra-linguistic context) that will decide between the two readings:

- (36a) Edho, horevun sihna
 here, dance-3pl often
 ‘Here, people dance often’
 ‘Here, they dance often’

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- (36b) Edho, trone pola mila
here eat-3pl many-acc apples-acc
'Here, people eat many apples'
'Here, they eat many apples'

It is generally assumed that the arbitrary subject interpretation in the Greek example is due to the use of an empty pronoun (*pro*) that may have an arbitrary reading, as well as a referential reading. The verb usually has plural agreement, although this is not restrictive (i.e. the verb may, for example, appear in singular (2nd person), given the right context). In Italian, the use of an arbitrary *pro* in the subject position is not so common: native speakers opt for the use of the clitic *si* in order to express arbitrary subject interpretation:

- (37) Qui *(*si*) mangiano molte mele
here si eat-3pl many apples
'One / people eat many apples here'

To sum up, I suggest here that impersonals are formed by a thematic arity operation (i.e. manipulation of a theta-role) in a given language if a clitic is available, which may absorb the nominative case, and if there is some mechanism to check the EPP, namely if there is an expletive *pro*. This is attested in Italian. A language (such as Greek) is predicted not to have impersonals if any of the following holds: a. if the language lacks the means for nominative case absorption (i.e. if the language does not have a morphological device capable to absorb the nominative case) or if its arity operations are restricted to apply only in the Lexicon, b. if the language does not have the appropriate mechanism to check the EPP, i.e. if it lacks a phonologically null expletive.

Let us now see how languages behave. Firstly, we turn to Hebrew. Hebrew is a pro-drop language. However, it does not allow for impersonals of the Italian type. Reinhart & Siloni (2002, 2003) argue that thematic arity operations only apply in the Lexicon in Hebrew. Nominative case cannot be eliminated in the Lexicon since it is not a case feature of the verb. So, Hebrew uses an arbitrary subject *pro* instead:

- (38) Šam son'im zarim
 there hate-3pl foreigners
 'There they hate foreigners'

It turns out, then, that Hebrew and Greek have a similar behaviour with respect to arbitrary subject interpretation: constructions with arbitrary subject interpretation are formed with an arbitrary *pro* and not with an arity operation. For Hebrew, Reinhart & Siloni's Lexicon / Syntax parameter explains this fact; Hebrew is a lexicon language and the nominative cannot be eliminated in the Lexicon. If Greek is a language of the syntax type, though, another explanation is required. I argue here that the lack of impersonals in Greek is attributed to morphological restrictions on case-absorption. In chapter 2, I explain why I consider Greek a language with the syntax parameter setting and in chapter 3 I elaborate the hypothesis on case absorption.

French as opposed to Hebrew and Greek has a clitic that could in principle absorb nominative case. Since French is not a pro-drop language there is no other option than to use a pronoun in the subject position (cf. Cinque 1988 for the relevance of the pro-drop parameter in a different theoretical framework):

- (39) Aujourd'hui à Beyrou, *on* a
 today at Beyrou one have-3sg
 tué un innocent
 killed an innocent
 'Today at Beyrou, one / people killed an innocent'

The French pronoun *on* is distinguished from the Italian clitic *si* in that it realizes the external theta-role (and presumably the nominative case), whereas '*si*' absorbs nominative case without being an argument (i.e. without being the subject).^{vi}

Let us now turn to Russian, which differs from the other languages already discussed with respect to the pro-drop parameter. Russian is not a pro-drop language (Franks 1995). However, Russian uses an empty arbitrary pronoun in the subject position. There is only one possible

reading of the examples below. The subject always takes the arbitrary interpretation ‘people’ and never the referential interpretation ‘they’^{vii}:

- (40a) *Zdjes’ tancujut*^{viii}
 here dance-pres-3pl
 ‘People dance here’
 ‘*They dance here’

- (40b) *Zdes’ jedjat mnogo jablok*
 here eat-pres-3pl many apples
 ‘People eat many apples here’
 ‘*They eat many apples here’

The arbitrary interpretation is thus not dependent on a thematic arity operation. The construction is actually ungrammatical in the presence of a clitic / suffix (*-sja*), which would function as a case absorber and would give rise to manipulation of a theta-role by an arity operation:

- (41a) **Zdes jedjat-sja mnogo jablok*
 here eat-pres-3pl-sja many apples
 ‘Here one / people eat many apples’
- (41b) **Zdes’ ih estsja často*
 here them-acc eat-3sg-sja often
 ‘Here one eats them often’

We may thus conclude that Russian makes use of an arbitrary subject pronoun that is phonologically empty (*pro*) – no arity operation applies.^{ix}

Finally, we will briefly discuss Rumanian, a language that uses a clitic (*se*). According to Dobrovie-Sorin (1998), Rumanian is a pro-drop language and it uses a clitic, like in Italian, but it does not form impersonals with an argument in accusative case as shown by the contrast

between the Italian and the Rumanian data in (42) and (43). In (42a), there is no agreement between the verb and the DP and so the latter is presumably in accusative case. In (43a), there is an object clitic in accusative. Dobrovie-Sorin thus argues that the unacceptable Rumanian example (42a) and (43a) show that the *se*-clitic cannot be nominative, as is the case in the equivalent Italian example in (42b) and (43b).

(42a) *In această universitate *se* predă
in this university *se* teach-3sg
științele umane
sciences humanities
‘In this university one teaches the humanities’

(42b) In questa università *si* studia le
in this university *se* study-3sg the
materie letterarie
material (of)-letters
‘In this university one studies the humanities’

(43a) *(Științele umane) le *se* predă
sciences humanites them-acc *se* teach-3sg
în această universitate
in this university
‘(The humanites), one teaches them in this university’

(43b) (Le materie letterarie) le *si*
(the material (of)-letters them-acc *se*
studia in questa università
study-3sg in this university
‘(The humanites), one studies them in this university’

Note however, that unergative verbs may appear with a *se*-clitic in Rumanian, as Dobrovie-Sorin points out:

- (44) Se cîntă / doarme / muncește /
 se sing-3sg sleep-3sg work-3sg
 mănîncă
 eat-3sg
 ‘One sings / sleeps / works / eats’

Dobrovie-Sorin attributes the presence of the *se*-clitic with unergative verbs to the presence of a cognate object (so the verbs are not actually unergatives and the clitic is accusative). However, one could take example (44) as an indication that the *se*-clitic can actually be associated with the nominative case.^x

There is perhaps another way to explain the Rumanian issue (namely the observation that a pro-drop, clitic language cannot have impersonals). Logically, the system allows for a language that has arbitrary pro to use it rather than the arity operation, as in Russian. This is hard to decide for Rumanian. It might be the case that the language uses only referential pro. However, an arbitrary reading is possible given the relevant context:

- (45) Q: Ce fac oamenii aici
 what do-3pl people-the here
 ‘What do people do here?’
 A: Mănîncă mere
 eat-3pl apple-the
 ‘People eat apples’

No concrete conclusions can be drawn for Rumanian.

Given the data presented so far, we may conclude that a language can have the relevant impersonals only if:

- It has the morphology to absorb the nominative case.
- It has expletive pro.

If a language does not satisfy these requirements, then arbitrary interpretation can be the result of an arbitrary *pro* in the structural subject position.

4 The case hypothesis in syntax languages

The analysis of impersonals shows that case absorption is a syntactic phenomenon. Specifically, I assume that nominative case is a feature on Tense.^{xi} It is not a lexical case, contrary to accusative. As we know, the accusative case may also appear in unexpected syntactic environments, like for example in a passive construction in Greek (cf. chapter 3). Such instances possibly fall outside the systematic behaviour of case realizations and require independent explanations. We concentrate here on the patterns that are observed cross-linguistically leaving aside any language specific occurrences.

According to Reinhart's (2003) Theta System, a language could allow saturation to apply in the Lexicon. However, given the Theta System assumptions so far, such a language should also eliminate then the accusative case. Elimination of nominative case can only be associated with saturation applying in the Syntax. Saturation in the Lexicon only gives rise to passives or middles but not to impersonals of the Italian type.

The immediate prediction is that any language that exhibits impersonal constructions, as the result of nominative case absorption is a language of the syntactic type. This is borne out: Italian is such a language, according to Reinhart & Siloni (2003a, 2003b) who argue extensively that Italian is a language of the syntactic type on the basis of reflexivization.

The use of a reflexive clitic / affix in languages with the lexicon parametric setting has no effects on the range of application of an arity operation. As just mentioned, the accusative feature is always eliminated if arity operations apply in the Lexicon. I will argue that the clitic / suffix distinction is crucial if an arity operation applies in the Syntax. Specifically, the range of the case-absorbing capacity of the morpheme determines the type of arguments that the arity operation of internal reduction (reflexivization and reciprocalization) may target. First, however, I will show in the next chapter that Greek is a language of the syntactic type on the basis of reflexive *te*-verbs.

Chapter 2

Is Greek a syntax language? Evidence from reflexivization

1 Introduction

Reinhart & Siloni (2003a, 2003b) suggest that arity operations apply either in the Lexicon or in the Syntax.

(46) *The Lex-Syn Parameter*

UG allows thematic arity operations to apply in the Lexicon or in Syntax.

Once the language is set for one parametric setting, every phenomenon linked to that thematic arity operation would be expected to behave in a similar way. This is the core of Generative Grammar and, specifically of the Principles and Parameters framework (Chomsky 1981, Chomsky & Lasnik 1993). So, if a given language chooses for the syntax setting, we would expect the language to behave as syntactic in all the relevant phenomena. In other words, we expect a language that realizes internal reduction in the Syntax to display certain syntactic properties. As we will now see, Greek reflexivization has the puzzling characteristic that it displays a mixed behaviour (i.e. syntactic and lexical). So, this raises the question how the Lexicon/Syntax parameter is set for Greek.

2 Greek reflexive verbs

In this section, I will concentrate on reflexivization in Greek, i.e. the formation of reflexive verbs such as *plénome* ‘wash’.^{xii} The formation of reflexive verbs should be distinguished from the formation of reflexive

constructions with reflexive anaphors (*?pleno ton eafto mu* ‘I wash myself’). The constructions with reflexive anaphors are presumably formed through binding in the Syntax (cf. for example Reinhart & Reuland 1993)^{xiii}. Reflexive verbs, on the other hand, are formed through a thematic arity operation either in the Syntax or in the Lexicon (Reinhart & Siloni 2003a, 2003b)^{xiv, xv}

2.1 Voices and diatheses

The different semantic functions of a verb-entry are traditionally called ‘diatheses’ in Greek (cf. Setatos 1997). The notion ‘reflexive’ could thus be viewed as a semantic diathesis (for a discussion of different semantic functions of verbs in English cf. Levin 1993).

There is some debate in the literature regarding the number of diatheses that should be distinguished. Some researchers argue for four diatheses (Triandafilidis 1991): active (47a), passive (47b), middle (47c) and neutral (47d). Tzartanos (1946), however, distinguishes only three diatheses: the neutral diathesis is considered, according to him, identical to the active diathesis because the relevant verbs denote some action of the subject. The diatheses are defined on the basis of the subject.

Active diathesis: the subject performs an action on something / someone.
For example:

(47a)	To	pedhi	edhese	ta
	the-nom	child-nom	tied-3sg	the-acc
	kordhonia	tu		
	shoe-laces-acc	his-gen		
	‘The child tied his shoe laces’			

Passive diathesis: the subject is the recipient of an action that is performed by someone. For example:

- (47b) To pedhi dhethike apo
the-nom child-nom tied-te-3sg by
to listi
the-acc robber-acc
‘The child was tied (up) by the robber’

Middle diathesis: the subject is the recipient of an action that he / she performs himself. For example:

- (47c) To pedhi dehthike me
the-nom child-nom tied-te-1sg with
ti zoni (tu aeroplanu)
the-acc belt-acc the-gen airplane-gen
‘The child tied himself with the (airplane) belt’

Neutral diathesis: the subject neither performs any action nor is he / she the recipient of any action. For example:

- (47d) Kathome
sit-1sg-te
‘I am sitting’

The diatheses are usually expressed by the means of the voices of the verb^{xvi}. Two voices are distinguished in Modern Greek. The distinction is made on the basis of a suffix, namely the suffix *-te*. The multiple functions of the suffix *-te* have resulted in a certain terminological obscurity in the literature. Different names are used for the suffix: it is called ‘passive affix’ (Tsimpli 1989) or ‘Non-Active morphology’ (Rivero 1990, 1992, Anagnostopoulou & Alexiadou 1999, 2003 and Embick 2003) or ‘medio-passive morphology’ (Theofanopoulou 1981). In order to avoid this terminological obscurity, I refer to all instances of this form as *te*-verbs, or *te*-morphology.

An example of the different forms of the suffix is listed below. The verb *pleno* ‘to wash’ is declined with (right column) and without the suffix (middle column). The suffix *-te* appears bolded. Note here that the suffix changes form depending on aspect, tense, number and person (Joseph & Smirniotopoulos 1993). It is thus hard to determine which exact part of the verbal morphology denotes voice alternation. The forms without *-te* belong to the active voice, while the forms with *-te* belong to the (medio) passive voice:

(48) **Present Tense**
Imperfective Aspect

<i>Person</i>	<i>Without-te</i>	<i>With-te</i>
<i>1 singular</i>	pleno	plenome
<i>2 singular</i>	plenis	plensese
<i>3 singular</i>	pleni	plenete
<i>1 plural</i>	plenum	plenomaste
<i>2 plural</i>	plnete	pleneste
<i>3 plural</i>	plnun	plenonde

Present Tense
Perfective Aspect

<i>Person</i>	<i>Without-te</i>	<i>With-te</i>
<i>1 singular</i>	plino	plitho
<i>2 singular</i>	plinis	plithis
<i>3 singular</i>	plini	plithi
<i>1 plural</i>	plinume	plithume
<i>2 plural</i>	plinete	plithite
<i>3 plural</i>	plinun	plithun

Past Tense

Imperfective Aspect

<i>Person</i>	<i>Without-te</i>	<i>With-te</i>
<i>1 singular</i>	eplena	plenomun
<i>2 singular</i>	eplenes	plenosun
<i>3 singular</i>	eplene	plenotan
<i>1 plural</i>	plename	plenomaste
<i>2 plural</i>	plenate	plenosaste
<i>3 plural</i>	eplenan	plenondan

Past Tense

Perfective Aspect

<i>Person</i>	<i>Without-te</i>	<i>With-te</i>
<i>1 singular</i>	eplina	plithika
<i>2 singular</i>	eplines	plithikes
<i>3 singular</i>	epline	plithike
<i>1 plural</i>	pliname	plithikame
<i>2 plural</i>	plinate	plithikate
<i>3 plural</i>	eplinan	plithikan

There is no one-to-one correspondence, though, between voices and diatheses. This is illustrated in two ways: either the same semantic reading is expressed with two different types of verbs or the same verbal form expresses two or more semantic readings. For example, the neutral diathesis can be expressed either with a verb with a (special) suffix (*kathome* ‘sit’) or with a verb without any such suffix (*meno* ‘stay’):

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- (49a) *Kathome* / *meno* *stin* *odho*
sit-te-1sg / stay-1sg at-the-acc street-acc
Tsimiski
Tsimiski-acc
'I am staying at Tsimiski street'

In (49b) on the other hand, the same verbal form, namely *jeli-te* 'deceive-*te*' has two different diatheses: middle and passive (Setatos 1997: 207).

- (49b) *Efkola jeli-te*
easily deceive-te-3sg
'He / she deceives herself easily' (middle)
'He / she is easily deceived' (passive)

The same applies to the verbal form *ksirizome* 'I shave', which has a middle (I shave myself) and a passive (I was shaved) reading (cf. Setatos 1997: 203). The middle diathesis refers here to the reflexive reading. Reciprocals also belong to the middle diathesis. The term 'middle' originates from the literature of traditional grammar, while the terms 'reflexive' and 'reciprocal' usually appear in generative studies^{xvii}.

Reflexive verbs in Greek are always formed with the suffix *-te*^{xviii}. There seems to be, in this case, a one-to-one correspondence between the semantic and the morphological classification. However, a problem arises because the same morphological form of the verb is also used for other semantic purposes. Apart from reflexives, the following types of verbs are also formed in Greek with the same suffix – I use here the terms that appear within the framework of Generative Grammar. These terms often have theoretical implications, i.e. implications regarding the different analyses of each verbal form. I also indicate which diathesis would be associated with each form in order to establish a link between the two views:

- a. Middles, possibly corresponding to passive diathesis:

(50a) To krasi pinete efharista
the-nom wine-nom drinks-te-3sg pleasantly
‘The wine drinks with pleasure’

b. Passives^{xix, xx} corresponding to passive diathesis:

(50b) To vivlio dhiavastike hthes
the-nom book-nom read-te-3sg yesterday
‘The book was read yesterday’

c. (Some) verbs with experiencer subject possibly corresponding to passive or neutral diathesis:

(50c) O Yanis eknevrizete
the-nom Yanis-nom irritate-te-3sg
(me ti musiki)
(with the-acc music-acc)
‘Yanis is irritated by the music’

d. Reciprocals^{xxi}, middle diathesis:

(50d) O Yanis ke i
the-nom Yanis-nom and the-nom
Maria agkaliastikan
Maria-nom hugged-te-3pl
‘Yanis and Maria hugged (each other)’

e. (Some) unaccusatives^{xxii}, possibly corresponding to the neutral diathesis:

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(50e) To pani skistike
 the-nom cloth-nom tore-te-3sg
 ‘The cloth got torn’

Context (linguistic or extra-linguistic) is sometimes required to distinguish whether a verb has middle, passive, reciprocal, reflexive or unaccusative reading.

The picture of Greek reflexive verbs is even more obscure. Specifically, at least three constructions in Greek give rise to reflexive reading (i.e. there are at least three ways to express the reflexive / middle diathesis). However, not all verbs display all three variants and, even worse, native speakers may have different judgements – we will return to this later. The three options are given below:

i. Verb with a suffix and a prefix:

(51a) *O Yanis *aftoplithike*
 the-nom Yanis-nom self-washed-te-3sg
 ‘Yanis washed (himself)’

(51b) O Yanis *aftokatastrafike*
 the-nom Yanis-nom self-destroyed-te-3sg
 ‘Yanis destroyed himself’

So, not all verbs allow for the prefix *afto* ‘self’: *plenome* ‘wash-te’ is incompatible with *afto* ‘self’ (51a), while *katastrafome* ‘destroy-te’ (51b) is fine.

This type of reflexive construction has attracted a lot of attention. According to Tsimpli (1989), *afto* ‘self’ has an anaphoric nature formally represented as [+anaphoric], which is transferred to the *te*-suffix. This is achieved through a process of coindexation between the reflexive prefix *afto* ‘self’ and the *te*-suffix. The prefix and the suffix thus share the external theta-role originally assigned to the *te*-suffix. The prefix-suffix chain is also coindexed with the derived subject.

Rivero (1992), on the other hand, argues that the prefix *afto-* ‘self’ (and the reciprocal prefix *alilo* ‘each+other’) is the outcome of anaphor incorporation, that is movement of the anaphor from the object position to a position adjoined to the verb. The syntactic process of incorporation is argued to exist in the Greek language on the basis of adverbs.^{xxiii, xxiv}

Lastly, Embick (2003) suggests that the prefix *afto-* ‘self’ is an adverbial that is adjoined to the root of the verb. Embick’s hypothesis is based on the observation that the prefix *afto-* ‘self’ appears in nominalizations where an agent is not licensed (e.g. *aftokatastrofi* ‘self-destruction’).

ii. Verb (transitive) followed by a full anaphor:

(52a) ?O Yanis epline *ton*
 the-nom Yanis-nom washed-3sg the-acc
 eafto *tu*
 self-acc cl-gen
 ‘Yanis washed (himself)’

(52b) O Yanis katastrepe ton
 the-nom Yanis-nom destroyed-3sg the-acc
 eafto *tu*
 self-acc cl-gen
 ‘Yanis destroyed (himself)’

Although the construction *katastrefo ton eafto tu* ‘I destroy myself’ (52b) is straightforwardly accepted, the construction *pleno ton eafto mu* ‘I wash myself’ is only acceptable within a specific context. Specifically, the transitive form of some verbs is used with the anaphor only for emphatic purposes.^{xxv} For example, in (53a), we can imagine a situation where some friends are preparing for a party and everybody is running around in order to make sure that the food is ready and the house is clean before the guests arrive. The time is running out and Yanis, instead of helping out with the preparations, decided to take a bath. His friend then says the following:

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- (53a) Edho o kosmos hanete ki o
 here the-nom world-nom lose-te and the-nom
 Yanis pleni ton eafto tu
 Yanis-nom wash-3sg the-acc self-acc his-gen
 ‘The world is falling apart and Yanis is washing himself’

In (53b), we can imagine a situation where people are getting ready for a wedding and the relatives of the bride are taking care of themselves: they are dressing themselves, putting on make-up and combing their hair instead of helping the bride to prepare. Someone who would like to make a joke of such a situation could say the following example:

- (53b) Andi na htenizun ti nifi htenizun
 instead subj comb-3pl the-acc bride-acc comb-3pl
 tus eaftus tus!
 the-acc selves-acc their-gen
 ‘Instead of combing the bride (i.e. the bride’s hair), they are combing themselves (i.e. their own hair)!’

Anagnostopoulou & Everaert (1999) provide an analysis of full anaphors: the *afto* ‘self’ part of the reflexive full anaphor always incorporates to the verb covertly. This process of incorporation triggers a possessor raising effect and gives rise to a reflexive predicate. Reflexive marking of the predicate (in terms of Reinhart & Reuland’s 1993 theory) is thus achieved by means of a self-morpheme attached directly to the predicate.

iii. Verb with a suffix:

- (54a) O Yanis plithike
 the-nom Yanis-nom washed-te-3sg
 ‘Yanis washed (himself)’

- (54b) ?O Yanis *katastrafike*
the-nom Yanis-nom destroyed-te-3sg
‘Yanis destroyed (himself)’

It is not clear whether forms like *katastrafike* ‘destroyed-*te*’ (54b) may indeed have a reflexive reading or not. The passive reading is more dominant. The form *plithike* ‘washed-*te*’, on the other hand, is mainly reflexive. In section 2.2 I will argue that forms like *katastrafike* ‘destroyed-*te*’, *kaike* ‘burnt-*te*’, *travmatistike* ‘injured-*te*’, *dhethike* ‘tied-*te*’ etc. have only a reflexive reading in certain contexts.

2.2 Disambiguation of *-te* verb

The aim of this section is to provide the means to disambiguate the different interpretations of the suffix *-te*. Specifically, it will be shown that it is possible to disambiguate the different readings by the choice of adjuncts.

- i. The adverbial *moni tis / monos tu* ‘on her own / on his own’ appears with reflexives (55a) and unaccusatives (55b) but not with passives (55c) (cf. Chierchia 1989, Levin & Rappaport 1995, Alexiadou & Anagnostopoulou 2003).

- (55a) *Plenete* apo monos tu^{xxvi}
washes-te-3sg by own-nom his-gen
‘He wash (himself) on his own’

- (55b) *Irthe* apo monos tu
came-3sg by own-nom his-gen
‘He came on his own’

Remember that the verb *plenome* ‘wash’ is ambiguous between a reflexive and a passive reading. In order to test whether the adverbial appears with passives, we need to look into a verb that does not allow reflexive interpretation due to its semantic / pragmatic characteristics. The verb *silamvano* ‘to arrest’ does not straightforwardly allow for a

reflexive alternate (Iatridou p.c.). The form *silamvano-te*, which is presumably passive ‘to be arrested’ cannot appear with the adverbial *apo monos tu* ‘on his own’:

- (55c) **Sinelifthi* *apo* *monos* *tu*
 arrested-te-3sg by own-nom his-gen
 ‘*He was arrested on his own’

Note here that the last example is acceptable with a by-phrase:

- (56a) *Sinelifhti* *o* *kleftis* *apo*
 arrested-3sg the-nom thief-nom by
tin astinomia
 the-acc police-acc
 ‘The thief was arrested by the police’

In addition, there is an available transitive alternate:

- (56b) *O* *Yanis* *sinelave* *ton* *klefti*
 the-nom Yanis-nom arrested-3sg the-acc thief-acc
apo monos tu
 by own-nom his-gen
 ‘Yanis arrested the thief on his own’

It is hard to explain the above facts. In order to make such an attempt, we would first have to look into the exact function of the adverbial *apo monos tu* ‘on his own’.

The examples below show that the adverbial does not have the reading ‘alone’:

(57a) Sinelifhti moni tis apo
arrested-3sg own-f-nom cl-3sg-f-gen by
tin astinomia
the-acc police-acc
'She was arrested alone by the police'

(57b) *Sinelifhti apo moni tis
arrested-3sg by own-f-nom cl-3sg-f-gen
apo tin astinomia
by the-acc police-acc
'She was arrested on her own by the police'

Examples (57a) and (57b) possibly indicate that the adverbial *apo moni tis* 'on her own' has to be linked to an agent, if there is one. In the case of passives the agent is existentially bound. The adjunct is linked with the structural subject, which does not overlap with the agent.

ii. Reinhart (2000) points out that instruments always appear with agentive arguments. As illustrated below, instruments appear with reflexives (58a) and passives (58b) but not with unaccusatives (58c):

(58a) Plenete me to sapuni
washes-te-3sg with the-acc soap-acc
'He washes (himself) with the soap'

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(58b) To ktirio kaike
the-nom building-nom burnt-te-3sg
(apo tus anarhikus) me dhio
(by the-acc anarchists-acc) with two-acc
varelia petreleo
barrels-acc petrol-acc
‘The building was burnt (by the anarchists) with two barrels of
petrol’

(58c) *Epese me ena ksilo^{xxvii}
fell-3sg with a-acc stick-acc
‘*She / he fell with a stick’

iii. The adverbial *apo moni tis* ‘on her own’ and the instrumental phrase appear simultaneously. The unaccusative reading is excluded, due to the instrumental phrase. The passive reading is also excluded, due to the adverbial ‘on her own’. Hence, the verb can only be reflexive.

(59) I jineka kaike apo
the-nom woman-nom burnt-te-3sg by
moni tis me ta spirta
own-acc her-gen with the-acc matches-acc
‘The woman burnt herself on her own with the matches’

The English example would be unacceptable in the absence of a full anaphor:

(60) *The woman burnt on her own with the matches

Other verbs that have a reflexive alternate in Greek but not in English are the following: *travmatizome* ‘injure’, *dhenome* ‘tie’, *leronome* ‘dirty’,

skepazome ‘cover’, *sistinome* ‘introduce’, *paradhinome* ‘surrender’, *kovome* ‘cut’, *prostatevome* ‘protect’ etc.

Here is an example of the reflexive reading, which is forced by the choice of adjuncts:

(61a) I jineka travmatistike apo
 the-nom woman-nom injured-te-3sg by
 moni tis me to maheri
 own-f-nom cl-f-gen with the-acc knife-acc
 ‘The woman injured herself on her own with the knife’

(61b) To ajori dhethike apo
 the-nom boy-nom tied-te-3sg by
 mono tu me to shini
 own-n-nom cl-n-gen with the-acc rope-acc
 ‘The boy tied himself on his own with the rope’

(61c) To koritsi lerothike apo
 the-nom girl-nom dirtied-te-3sg by
 mono tu me ti laspi
 own-n-nom cl-n-gen with the-acc mud-acc
 ‘The girl dirtied herself on her own with the mud’

(61d) I Maria skepastike apo
 the-nom Maria-nom covered-te-3sg by
 moni tis me tin kuverta
 own-f-nom cl-f-gen with the-acc blanket-acc
 ‘Maria covered herself on her own with the blanket’

(61e) O trajudhistis sistithike apo
 the-nom singer-nom introduced-te-3sg by
 monos tu me to mikrofono
 own-m-nom cl-m-gen with the-acc microphone-acc
 ‘The singer introduced himself on his own with the microphone’

(61f) I jineka paradhothike apo
 the-nom woman-nom surrendered-te-3sg by
 moni tis me mia aspri
 own-f-nom cl-3sg-gen with a-acc white-acc
 simea
 flag-acc
 ‘The woman surrendered herself on her own with a white flag’

(61g) I jineka kopike apo
 the-nom woman-nom cut-te-3sg by
 moni tis me to maheri
 own-f-nom cl-f-gen with the-acc knife-acc
 ‘The woman cut herself on her own with the knife’

(61h) I jineka prostatefthike apo
 the-nom woman-nom protected-te-3sg by
 moni tis me ti skini
 own-f-nom cl-f-gen with the-acc tent-acc
 ‘The woman protected herself on her own with the tent’

To sum up, Greek verbs with the suffix *-te* are often ambiguous. The reflexive reading can be forced by the choice of adjuncts.^{xxviii} This shows that reflexivization in Greek is more productive than usually assumed.^{xxix} An immediate question is whether we can explain the issue of productivity within linguistic terms, i.e. in a formal way. In other words,

we would like to know what differentiates the verb ‘wash’ from the verb ‘burn’ and makes reflexivization of the verb ‘wash’ possible in all languages, while reflexivization of the verb ‘burn’ is only attested in few languages. Reinhart’s (1997, 2000, 2002) Theta System provides us with the tools to distinguish the feature specifications of the two verbs.

2.3 Productivity of *te*-reflexivization: syntax setting

In terms of theta-clusters, any transitive verb whose external argument can be interpreted as $[/+m]$ (i.e. agent or experiencer) can reflexivize in languages of the syntactic setting (Reinhart & Siloni 2003a, 2003b). In lexicon languages, on the other hand, only a subset of the ($[+c+m]$) (agentive) verbs may have a reflexive alternate. The issue of productivity is thus explained in terms of feature specifications.

More precisely, one group of verbs that can be interpreted as $[/+m]$ (mental state involved) are those with a $[+c]$ (cause) external argument. The verb *keo* ‘burn’ is a $[+c]$ verb: it takes three types of subjects, namely an agent $[+c+m]$, an instrument $[+c-m]$ and a cause $[+c]$ ^{xxx}.

a. An agent subject $[+c+m]$:

(62a)	<i>O</i>	<i>Yanis</i>	<i>ekapse</i>	<i>tis</i>
	the-nom	Yanis-nom	burnt-3sg	the-acc
	petres			
	stones-acc			
	‘Yanis burnt the stones’			

b. A cause subject $[+c]$:

(62b)	<i>O</i>	<i>ilios</i>	<i>ekapse</i>	<i>tis</i>
	the-nom	sun-nom	burnt-3sg	the-acc
	petres			
	stones			
	‘The sun burnt the stones’			

c. An instrument subject [+c-m]:

(62c) *To* *spirto* *ekapse* *tis*
 the-nom match-nom burnt-3sg the-acc
 petres
 stones-acc
 ‘The match burnt the stones’

The verb *pleno* ‘wash’ does not allow for all three types of subjects, as illustrated below.

a. An agent subject [+c+m] is acceptable:

(63a) *O* *Yanis* *epline* *to*
 the-nom Yanis-nom washed-3sg the-acc
 aftokinito
 car-acc
 ‘Yanis washed the car’

b. A cause subject [+c] is marginally acceptable (cf. also the example in footnote^{xxx1}):

(63b) ?*To* *nero* *epline* *to*
 the-nom water-nom washed-3sg the-acc
 aftokinito
 car-acc
 ‘The water washed the car’

c. However, an instrument subject [+c-m] is ruled out:

(63c)	*O	kuvas	epline	to
	the-nom	bucket-nom	washed-3sg	the-acc
	aftokinito			
	car-acc			
	‘The bucket washed the car’			

We may thus conclude that the verb *keo* ‘burn’ is a ([+c]) verb. It takes an agent ([+c+m]) (62a), a cause ([+c]) (62b) and an instrument ([+c-m]) (62c) subject. The verb *pleno* ‘wash’, on the other hand, is an agentive verb ([+c+m]). It takes an agentive subject ([+c+m]) (63a) but not an instrument subject ([+c-m]) (63c). It is not clear whether it takes a cause subject ([+c]) (63b) systematically. The generalization here is that [+c] verbs allow reflexivization only in syntax languages.

Specifically, [+c] verbs allow the following derivations: i. Expletivization (external reduction), which gives rise to an unaccusative entry in the Lexicon and ii. Reflexivization (internal reduction), which applies in the Syntax. For example, the verb *zesteno* ‘warm up’ is a [+c] verb as we show by the choice of subjects below:

(64a)	I	kuverta/	o	Yanis/
	the-nom	blanket-nom	the-nom	Yanis-nom
	o	ilios	zesteni	ti
	the-nom	sun-nom	warm-up-3sg	the-acc
	Maria			
	Maria-acc			
	‘The blanket / Yanis / the sun warms Maria up’			
	[+c-m]	[+c+m]	[+c]	
	“instrument”	“agent”	“cause”	

i. The unaccusative entry is derived as follows:

The [+c] (cause) theta-cluster is reduced in the Lexicon and the [-c-m] (theme) theta-cluster moves to the subject position, in the Syntax:

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(64b) To dhomatio zesteni
 the-nom room-nom warm-3sg-up
 ‘The room is warming up’
 [-c-m]
 “theme”

ii. The reflexive alternate is derived as follows:

The [-c-m] (theme) theta-cluster is “bundled” with the [+c] (cause) theta-cluster in Syntax:

(64c) O Yanis zestenete
 the-nom Yanis-nom warms-up-3sg
 ‘Yanis is warming himself up’
 [[+c] [-c-m]]
 “cause, theme”

The latter derivation is of interest here. The example (59), (repeated here from section 2.2) is acceptable, which indicates that Greek is possibly a language of the syntactic setting:

(59) I jineka kaike apo moni
 the-nom woman-nom burnt-te-3sg by own-acc
 tis me ta spirta
 her-gen with the-acc matches-acc
 ‘The woman burnt herself on her own with the matches’

Note by contrast, that in English, which is a lexicon language, the parallel sentence ‘The woman burnt’ cannot be construed as meaning ‘The woman burnt herself’.

Further evidence for the productive nature of Greek reflexives is derived from colloquial language (i.e. spoken language):

(65a) Tripai to heri tu
pinch-3sg the-acc hand-acc his-gen
me ti velona
with the-acc needle-acc
'He pinches his hand with the needle'

(65b) Tripiete me ti velona
pinch-te-3sg with the-acc needle-acc
'He pinches himself / herself with the needle'

Example (65b) indicates that reflexivization is a creative process in Greek (cf. also *hapakonete* = to give pills to himself, which comes from the transitive verb *hapakono* = to give pills, which is derived from the noun *hapaki* = pill). These are newly formed verbs mostly occurring in spoken language. Such examples would be hard to explain if we assumed that only a small (closed) set of verbs has a reflexive variant, as is the case in Lexicon languages. In English, for example, parallel constructions are ruled out, even in spoken language:

(65c) *He pinches = he pinches himself / herself

Note also the following example, which appears as an instruction when travelling with an airplane:

(66a) Parakalo dhethite
please tie-te-2pl
'Please put your belts on'

Note also that children use the following expressions when playing games:

(66b) Elate na metrithume
 come-2pl subj/to count-te-1pl
 ‘Let us count ourselves’

(66c) Elate na horistume
 come-2pl subj/to divide-te-1pl
 ‘Let us divide ourselves (in teams)’

Note, however, that other verbs, like *jnorizete* ‘knows-*te*’ does not mean, ‘he knows himself’. The verb has only a reciprocal variant: *jnorizomaste* ‘we know each other’. Further research is required in order to understand what excludes the reflexive alternate of such a verb. This makes Greek a mixed language in the sense that it shares some characteristics with lexicon languages and other characteristics with syntax languages. I argue here that Greek is a syntax language because it displays enough positive evidence for the child to choose the syntax setting of the Lexicon/Syntax parameter. We will return to this later in this chapter.

In section 3, we will discuss the prevailing views on Greek reflexive verbs. As we will see, there is some discussion in the literature on Greek reflexive verbs regarding the module of grammar in which they are formed.

3 Approaches towards Greek reflexive verbs

The question whether reflexive verbs are formed in the Lexicon or in the Syntax is at issue in this section. The modular view of the language faculty has led researchers to different suggestions regarding the exact subsystem that is involved in the formation of reflexive verbs. It has been suggested, for example, that Greek reflexive verbs are formed in the Lexicon (Tsimpli 1989) or partly in the Lexicon and partly in the Syntax (Theophanopoulou 1981). I will argue that all reflexive verbs are formed in the Syntax, but first I will present an overview of the existing opinions.

3.1 Lexical approaches

Tsimplici (1989) argues that Greek reflexive verbs are formed by attachment of the *te*-suffix to the verb in the Lexicon. The suffix is attached to the verb in terms of a lexical rule of affixation and it saturates the internal theta-role. Given the Visibility Hypothesis (Chomsky 1981), which requires categories, which are assigned a theta-role to also have case, the suffix can only appear with transitive verbs, because only these verbs have a case to assign to the suffix. The external theta-role of the verb is assigned to the subject base-generated in the Specifier of Inflectional Phrase. Reflexives are thus unergative. This explains, according to Tsimplici, the agentive reading of the subject of reflexives, which is not attested in the case of passives or middles, although they all appear in the same morphological form (for details on Tsimplici's analysis cf. chapter 3). Reinhart & Siloni (2003a, 2003b) argue extensively that reflexives are indeed unergative. Note however that, in Greek, the evidence for unaccusativity is rather obscure (cf. Alexiadou & Anagnostopoulou 1997). This issue does not have immediate implications for my analysis. Whenever relevant, I will assume that reflexives are indeed unergatives and I will concentrate more on case-related issues.

Note here that Holton, Mackridge & Philippaki-Warburton (1997) suggest in their grammar book that only few verbs have a reflexive variant with the suffix *-te*, namely those verbs that express some activity regarding the body (body-care). For example: *plénome* 'wash', *dínome* 'dress', *hténizome* 'comb'. Although they do not specify that these are stored in the Lexicon, we may assume that this would be an immediate consequence. More precisely, within the framework of Generative Grammar, the module of Syntax (the Computational System) has the capacity to generate new items. So, any syntactic phenomenon is expected to be productive in nature. The picture is unclear with respect to the Lexicon. A lexicon phenomenon may either be productive or not. In the case of reflexivization, it is known to be unproductive universally, namely in lexicon languages only a fixed subset of agentive verbs have a corresponding reflexive entry. We may thus conclude that the lack of productivity immediately shows that the linguistic phenomenon in question is not derived by syntactic means. If a phenomenon is productive, on the other hand, it is harder to tell whether it is realized in the Syntax or in the Lexicon. Further evidence is needed.

Embick (2003) has a similar view: the reflexive interpretation is only possible with certain verbs because of their encyclopedic semantics.

Embick argues that voice morphology (i.e. the feature [nact] - nonactive) is assigned post-syntactically to the verb (or the v-V complex) when an external argument is missing. Reflexives are thus analysed as unaccusatives (for details on unaccusativity cf. chapter 3) due to the morphological suffix, which is sensitive to the absence of an external argument.

Remember here, though, the evidence in section 2.2 in favour of the productive nature of reflexivization in Greek.

3.2 Intermediate approaches (lexical and syntactic)

In this section, I will present the intermediate view on Greek reflexive verbs: one subset of the reflexive (and reciprocal) verbs with *-te* is formed in the Lexicon, while another subset is formed in the Syntax. Such approaches are motivated by a number of facts that seem to appear with one group of reflexive verbs but not with the other.

More precisely, Theofanopoulou (1981) distinguishes reflexive and reciprocal verbs that are formed in the Lexicon from reflexive and reciprocal verbs that are formed in the Syntax (note here that Theofanopoulou uses the term ‘middle’ to refer to reflexive and reciprocal verbs). The division is made on the basis of the following diagnostics (cf. also Zevgoli 2000 for a similar view^{xxxii}):

a. Only reflexive verbs that are formed in the Syntax display parallel active reflexive constructions, i.e. verbal forms that take an anaphor in the object position. For example:

Syntax:

(67a) Katastrefo ton eafto mu
 destroy-1sg the-acc self-acc cl-gen
 ‘I destroy myself’

(67b) Dhiafimizo ton eafto mu
 advertise-1sg the-acc self-acc cl-gen
 ‘I advertise myself’

Lexicon:

(68a) *Pleno ton eafto mu
wash-1sg the-acc self-acc cl-gen
'I wash (myself)'

(68b) *Htenizo ton eafto mu
comb-1sg the-acc self-acc cl-gen
'I comb myself'

b. Only reflexive verbs formed in the Syntax may appear with the prefix *afto-* 'self'. For example:

Syntax:

(69a) *Aftokatastrefome*
self-destroy-te-1sg
'I destroy myself'

(69b) *Aftodhiafimizome*
self-advertise-te-1sg
'I advertise myself'

Lexicon:

(70a) *Aftoplenome
self-wash-te-1sg
'I wash (myself)'

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(70b) *Aftohtenizome
self-comb-te-1sg
'I comb (myself)'

c. Only reflexive verbs formed in the Syntax display the possibility of a passive reading. For example:

Syntax:

(71a) Katastrefome
destroy-te-1sg
'I destroy myself' (reflexive)
OR 'I am being destroyed (by...)' (passive)

(71b) Dhiafimizome
advertise-te-1sg
'I advertize myself' (reflexive)
OR 'I am being advertized (by...)' (passive)

Lexicon:

(72a) Plenome
wash-te-1sg
ONLY 'I wash (myself)' (reflexive)

(72b) Htenizome
comb-te-1sg
ONLY 'I comb (myself)'

Theofanopoulou (1981) points out similar characteristics for reciprocals:

- a. Only reciprocals that are formed in the Syntax have active alternates using an anaphor^{xxxiii}.
- b. Only reciprocals that are formed in the Syntax appear in compounds with the prefix *alilo-* ‘each-other’^{xxxiv}.
- c. Ambiguity is attested only with those reciprocals that are formed in the Syntax^{xxxv}.

In the next section, I will argue that Greek is a language of the syntactic setting. This, however, does not exclude the possibility that a language has also some characteristics of the lexicon setting, as noted by Theofanopoulou. Siloni (2003) actually makes a similar observation for reciprocals in German and Serbo-Croatian. These are languages of the syntax type, but they also have partial characteristics of the lexicon languages. In this case, the parameter is set on the syntax value: if a child gets positive evidence for the syntactic setting, he /she will acquire a language of the syntax type. This is sufficient to set the parameter. The language may display characteristics of the lexicon type, but these should be considered as language specific properties.

To conclude, the Lexicon/Syntax parameter (Reinhart & Siloni 2003a, 2003b) concerns mainly whether a language is +/- Syntax. The characteristics that divide languages into two groups are discussed in section 4. My aim is to show that Greek displays enough characteristics to be classified as a syntax language.

4 Evidence for the syntactic setting of Greek

Reinhart & Siloni (2003a, 2003b) argue that there is evidence for the distinction of languages in two groups: those that form reflexive verbs in the Lexicon and those that form reflexive verbs in the Syntax. A language is of the syntax type if it has the following characteristics:

- Reflexivization is productive.
- There is reflexivization into ECM predicates.
- Reflexive nominals are not attested.
- Reflexive verbs in plural are ambiguous with reciprocal reading.
- Reflexivization of the benefactor is possible.

More precisely, Reinhart (1997, 2000, 2003) argues that reflexivization is the outcome of the thematic arity operation of internal reduction. Internal reduction consists of two parts: reduction of the internal theta-cluster of the verb entry and identification of the reduced theta-cluster with the remaining theta-cluster. The basic characteristics of internal reduction are taken from Chierchia (1989). Internal reduction is formalized as follows in the earlier stages of the theory (Reinhart 1997, 2000):

- (73) *Internal Reduction / Identification: Reflexivization*
- a. $V\langle\theta_1, \theta_2\rangle \rightarrow R_1(V)\langle\theta_1\rangle$ = Reduction
- b. $R_1(V)(x) \leftrightarrow \lambda x [V(x, x)]$ = Identification

The internal argument, which is marked as θ_2 , is reduced and is identified with its co-argument, marked θ_1 . More precisely, rule (73a) determines that one theta-cluster, namely the one with the index 2, will be reduced. In other words, this theta-cluster is not available for checking by a DP in the Syntax. Rule (73b) states that the reduced theta-cluster will be identified with the remaining theta-cluster. That is, the reduced theta-cluster is semantically present but in the form of a complex theta-role in combination with the remaining theta-cluster. The details of such an operation, which is named ‘bundling’ in later stages of the theory, can be found in Reinhart & Siloni (2003b). Reflexives are thus unergatives, i.e. they take a subject that is base-generated in a different position than the object DP, namely VP-externally (Reinhart & Siloni 2003a, 2003b).

I will now show how reflexivization applies in the Theta System. The verb ‘wash’, for example, selects for two theta-clusters, an agent ([+c+m]) and a theme ([-c-m]):

- (74a) wash [+c+m] [-c-m]

The verb-entry of ‘wash’ has more than one theta-cluster: marking will thus apply:

- (75) Lexicon marking

Given a n-place verb-entry, $n > 1$,

- a. Mark a [-] cluster with index 2 (internal).
- b. Mark a [+] cluster with index 1 (external).
- c. If the entry includes both a [+] cluster and a fully specified cluster [/a/, -c], mark the verb with the ACC feature.

The theme ([-c-m]) is a [-] theta cluster and so it will be marked with the index 2 (internal), while the agent ([+c+m]) is a [+] cluster and so it will be marked with index 1 (external):

(74b) wash [+c+m]₁ [-c-m]₂

Moreover, the entry includes both a [+] cluster, namely the agent ([+c+m]) and a fully specified cluster with the feature /-c/, namely the theme ([-c-m]). So, the verb will be marked with the accusative feature:

(74c) Wash_{acc} [+c+m]₁ [-c-m]₂

Now, we turn to the thematic arity operation of internal reduction. The arity operation will reduce the internal theta-cluster, i.e. the theta-cluster marked with the index 2. So, the theme ([-c-m]) is reduced. Next, the operation identifies the reduced theta-cluster with the remaining theta-cluster. The theme ([-c-m]) is thus identified with the agent ([+c+m]). The immediate question is what it means to identify one theta-cluster with another. Reinhart & Siloni (2003b) suggest that identification gives rise to a complex theta-cluster. The formation of a complex theta-cluster is called ‘bundling’.

(76) Bundling: $V\theta_1, \theta_2 \rightarrow V[\theta-\theta]_1$ (Reinhart & Siloni 2003b)

So, the outcome of ‘bundling’ is a verb entry that has only one theta-cluster with the index 1 (external), but this theta-cluster is semantically more complex than the original external theta-cluster of the verb (i.e. the agent ([+c+m])). For example, the reflexivization output of the verb ‘wash’ is, in terms of theta-features, as follows:

(74d) Reflexivization output: *wash* $[[+c+m] [-c-m]]_1$

The exact semantic characteristics of this mechanism are out of the scope of this work. I will concentrate here on the effects on case.

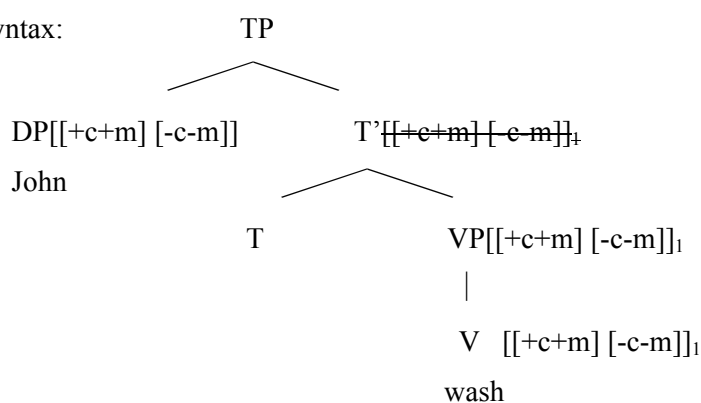
Specifically, the accusative feature of the verb is eliminated when the thematic arity operation of internal reduction applies (Reinhart & Siloni 2003b). In (74c), which represents the lexicon verb-entry of ‘wash’ after the application of internal reduction, there is no accusative feature on the verb.

Let’s take the example ‘John washes’ and see how it is derived in this model of grammar. My intention here is to show how theta-clusters appear in the Syntax and how they are checked by the appropriate DPs; all other issues, like for example verb-movement, attachment of agreement affix, are out of the scope of the analysis, so I do not mention them at all. Note also that I assume that the subject is merged in specTP:

(77a) Concepts System (Cognition): ‘wash’

(77b) Theta System $\underline{Wash}_{acc} [+c+m]_1 [-c-m]_2 \rightarrow wash [[+c+m] [-c-m]]_1$

(77c) Syntax:



The DP in the subject position will check the complex theta-cluster of the verb, because the theta-cluster has the index 1.

I assume here, based on Reinhart's class-lectures, that once the theta-role is assigned, the DP it is assigned to bears the relevant theta-features. The cluster is then on the DP but no longer on the verb. Note, though, that this is not discussed in Reinhart's publications on the Theta system.

Having established the way that reflexivization applies in the Lexicon we now turn to its syntactic realization. Reinhart & Siloni (2003b) point out that the theta-grid of a predicate cannot be changed in the Syntax. Specifically, it is not possible to eliminate or modify a theta-role nor is it possible to add a theta-role to the theta-grid after syntactic insertion. This is given by the 'Lexicon Interface Guideline':

(78) Lexicon Interface Guideline (Reinhart & Siloni 2003b)

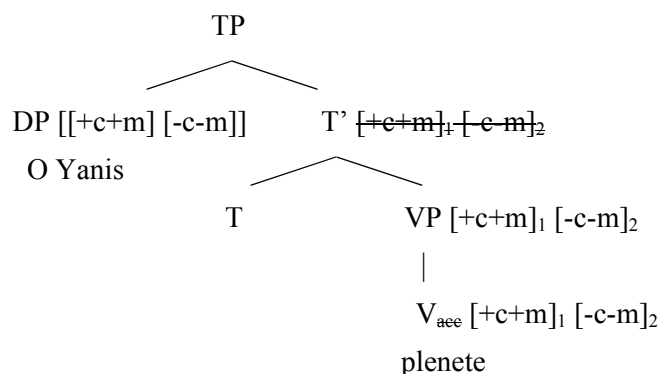
Theta-information cannot be changed by the syntactic component: Elimination, modification or addition of a theta-role are illicit in Syntax.

So, reflexivization can only apply in the Syntax upon merge, namely theta-assignment. As Reinhart & Siloni point out, the two theta-roles of a given predicate can give rise to a single, complex theta-role only upon merge of a new DP, namely upon theta-assignment (cf. Reinhart & Siloni 2003b for the exact technical way that this is realized). I limit myself here to the representation of an abstract model for the Greek example: *O Yanis plenete* 'John washes'.

(79a) Concepts System (Cognition): *pleno* 'wash'

(79b) Theta System Pleno_{acc} [+c+m]₁ [-c-m]₂

(79c) Syntax:



As shown in (79c), the VP has two theta-clusters separately as the V, because neither cluster is assigned VP-internally. According to Reinhart & Siloni (2003b), bundling applies upon merge. Namely, when the agent [+c+m] role is merged, it bundles with the other [-c-m] theme role. So, the bundle appears only on the DP. Next, the accusative feature is eliminated by the suffix *-te*.

Let us focus on the issue of case: in the Syntax, there is no ‘rule’ that eliminates the accusative feature of the verb. Reinhart & Siloni (2003a, 2003b) argue that the morphology (for example, the clitic *se* in Romance) always absorbs case. Because it absorbs case it is possible not to realize an argument in the position that checks the case. Next, a theta-problem occurs: the remaining theta-criterion problem is handled by a thematic arity operation. If there is an operation that can take care of the unassigned theta-role, the derivation will converge. In the tree above (79c), bundling applies at the stage of merging the external argument, and assigns both of the verb’s roles to that single DP. The case issue is thus solved by the presence of a clitic or verbal morphology. In Greek, the suffix is attached on the verb and absorbs case. I will return to the function of verbal morphology in chapter 3, where I will argue that the suffix has a narrower case-absorbing domain than a clitic.

First, I will provide further evidence that Greek has the syntax setting.

4.1 Reflexive Exceptional Case Marking predicates

Having established that reflexivization in Greek is more productive than usually assumed we need further evidence to confirm whether reflexivization is indeed syntactic.

Reinhart & Sioni (2003a, 2003b) argue that reflexivization into ECM predicates is only possible in the Syntax. This is so, because in the Lexicon, there is no entry corresponding to both the matrix and the embedded verb, so there is no entry that reflexivization (bundling) can apply to. In the Syntax, however, percolation of theta features is possible in the ECM structure, namely the unassigned role of the embedded verb is still available when the matrix external role is merged, so bundling can apply to these two roles. Theta-features of two different predicates can thus be unified (identified) only in the module of the Syntax (for further technical details on how this is realized, see Reinhart & Sioni 2003b). The French example in (80a) is acceptable which indicates that reflexivization (i.e. internal reduction) in French takes place in the Syntax otherwise reflexivization into ECM would remain unexplained.

- (80a) Jean se considère intelligent
Jean se considers clever
'Jean considers himself clever'

By contrast, there are no English parallels such as the example in (80b). This shows that English is a language of the lexicon type otherwise it would allow reflexivization into ECM predicates.

- (80b) *John considers clever

Greek lacks ECM predicates, in the sense that all embedded predicates manifest subject agreement. That is, Greek is a language without infinitives (Philippaki-Warbuton 1987 – but see Iatridou 1993 and Alexiadou & Anagnostopoulou 1997 for a discussion of this point). Hence, it is harder to find structures to check with the question whether reflexivization into ECM constructions is possible or not.

Partial evidence comes from the examples below:

- (81a) *Theorise Amerikanidha?*
 consider-te-2sg American-f-nom
 i. ‘Are you considered American?’ (passive)
 ii. ‘Do you consider yourself American?’ (reflexive)

- (81b) *Theorise eksipnos?*
 consider-te-2sg clever-m-nom
 i. ‘Are you considered clever?’ (passive)
 ii. ‘Do you consider yourself clever?’ (reflexive)

The passive reading is usually preferred, but the reflexive reading is also present in the relevant contexts. In the example below I am using pragmatic context to disambiguate the reflexive reading from the passive reading. Given the relevant context, the reflexive interpretation becomes the most prominent one:

- (81c) *Ti ine afta pu les tora;*
 what is-3pl these-nom that say-2sg now
 ‘What are you saying now?’
Theorise eksipnos ke ta
 consider-TE-2sg clever-m-nom and them-acc
 les;
 say-2sg
 ‘Do you consider yourself clever by saying this?’

A passive interpretation of (81c) ‘Are you considered to be clever by saying this?’ would be possible but not dominant given the relevant context. The situation that is given by the question ‘What are you saying now’ implicates that someone says certain things because he considers himself clever. Here, Greek allows for a reflexive verb to be used.

Similar is the effect when we use the adverbial *apo monos tu* ‘on his own’. The adverbial provides an adequate linguistic context to disambiguate the reflexive reading from the passive reading:

- (81d) *Theorite* *eksipnos* *apo* *monos* *tu*
 consider-te-3sg clever-m-nom by own-nom cl-m-gen
 ‘He considers himself clever (on his own)’

Also:

- (81e) *Dhioristike* *apo* *monos* *tu*
 appoint-te-3sg by own-nom cl-m-gen
proedhros *tis* *eterias*
 president-nom the-gen company-gen
 ‘He appointed himself president of the company (of his own)’

The PP *apo monos tu* ‘on his own’ is used in the above examples in order to emphasize the reflexive interpretation. That is, (81d) and (81e) can only mean that he ‘considers himself clever’ and ‘he appointed himself president’ respectively. The passive option, namely that ‘he was considered clever’ or that ‘he was appointed president’ is excluded.

We may assume that a small clause is formed and the ECM subject of the adjectival *eksipnos* ‘clever’ is identified in the Syntax with the subject of the main verb.

The fact that the above examples take a reflexive reading in relevant contexts makes Greek different from English. In English there is no verb that could form reflexive ECM predicates. For example, the construction ‘John considers clever’ cannot be used meaning ‘John considers himself clever’. The full anaphor ‘himself’ must obligatorily be present in such an example. This may be attributed to the lexicon setting of English, versus, arguably, the syntactic setting of Greek.^{xxxvi}

Given the difficulty in making a clear argument from ECM constructions, we move on to evidence from reflexives in plural.

4.2 Ambiguity of reflexives with plural subjects

Siloni (2001) argues that, in syntactic languages, reflexive verbs with plural subjects are ambiguous, as in the French example:

- (82a) Pierre et Jean se sont lavés
 Pierre and Jean se are washed
 i. ‘Pierre and Jean washed themselves’
 ii. ‘Pierre and Jean washed each other’

In lexicon languages, only one reading is available: the English example (82b) has the reading ‘John and Mary washed themselves’, but it does not have the reading ‘John and Mary washed each other’. The same holds for the Hebrew example (82c).

- (82b) John and Mary washed
 ‘John and Mary washed themselves’

- (82c) Dan ve- Ron hitraxcu
 Dan and Ron washed-*refl*
 ‘Dan and Ron washed (themselves)’

Ambiguities between reflexive and reciprocal reading are attested in the Greek literature. Example (83a) is from Rivero (1990), while example (83b) is from Rivero (1992):

- (83a) I anthropi plenonte
 the-nom men-nom wash-te-3pl
 i. ‘The men wash themselves’ (reflexive)
 ii. ‘The men wash each other’ (reciprocal)
- (83b) Ta pedhia thavmazonde
 the-nom children-nom admire-te-3pl
 i. ‘The children admire each other’ (reciprocal)
 ii. ‘The children admire themselves’ (reflexive)

Within Reinhart's (1997, 2000, 2003) Theta System, the verb *thavmazo* 'admire' is [+m], i.e. some "mental state" of the subject is involved. The "cause of change" feature /c plays no significant role here and so it is neither specified as /+c, nor as /-c. In principle, this would mean that both realizations are possible, i.e. [+m+c] (agent) and [+m-c] (experiencer). The possibility of forming the reciprocal and the reflexive variant of a [+m] (or [+m-c]) verb points towards the direction that reflexivization and reciprocalization in Greek is more productive than in English. In the latter, only a subset of the agentive verbs (i.e. verbs that take a [+c+m]-agent subject) may form either a reflexive or a reciprocal variant. Note, though, that not all [+m] or [+m-c] verbs have a reflexive variant in Greek. For example, *ajapiete* 'love-te' cannot mean "he loves himself" and *misiete* 'hate-te' cannot mean "he hates himself".

Another ambiguous example is given below:

- (83c) Ta pedhia vrehondan
the-nom children-nom wet-te-3pl
me ta lastiha
with the-acc hoses-acc
i. 'The children were throwing water to themselves with the hoses' (reflexive)
ii. 'The children were throwing water to each other with the hoses' (reciprocal)

We can thus imagine a situation where two children are in the garden, both are holding hoses and each child is throwing water to himself. In this situation, (83c) has a reflexive reading. Now, we can imagine a situation where there are two children in the garden, both are holding hoses and each child is aiming at the other child. So, each child is throwing water to the other. In this situation, (83c) has a reciprocal reading. A passive reading is also possible, namely in a situation where there are also other people in the garden. The other people are holding hoses and they are throwing water to the two children. However, the option of a passive reading is out of the scope of the argumentation here.

Siloni's (2001) idea is that the same arity operation gives rise to both reflexive and reciprocal variants. So, a language that forms reflexives in

Syntax is predicted to also form reciprocals in Syntax, if it is indeed the case that reflexivization and reciprocalization are both the outcome of the same thematic arity operation, namely internal reduction. This is based on the assumption that when a language chooses for one parameter setting, this will hold for all the phenomena that are related to the parameter in question. Siloni points out a number of phenomena that pattern together in Italian, French and German. This is attributed to the syntactic application of internal reduction (which gives rise to reciprocalization and reflexivization). Languages like Hebrew, English and Dutch, according to Siloni, behave differently with respect to the same type of facts because reciprocals are now formed in the Lexicon. Siloni uses the following tests to distinguish between the two types of languages:

- a. Reciprocalization of the benefactor: attested only in languages of the syntactic setting.
- b. Reciprocalization with a ‘with-phrase’: attested in languages of the lexicon type.
- c. Ambiguities in plural: attested in the syntax languages.

The first test will be discussed with respect to Greek in chapter 3. The second test is discussed by Dimitriadis (2003). We only concentrate here on the third test, namely the ambiguous readings of verbs with plural subject.

Context is required to distinguish the different interpretations. In lexicon languages, though, only a small group of verbs has a reflexive variant, while a different group of verbs has a reciprocal variant. Each variant is derived and stored in the Lexicon and therefore no ambiguity occurs. For example, the English construction ‘John and Mary wash’ can only mean ‘John and Mary wash themselves’, because the reflexive alternate of the verb ‘wash’ is formed in the Lexicon and so the reflexive reading is already stored. The construction, ‘John and Mary kiss’, on the other hand, can only mean ‘John and Mary kiss each other’, because the reciprocal alternate of the verb ‘kiss’ is formed in the Lexicon with the result that the reciprocal reading is stored with the verbal form ‘kiss’. So, neither the verb ‘wash’ in plural nor the verb ‘kiss’ in plural is ambiguous between reflexive and reciprocal reading. Note here that the two verbal forms are expected to be ambiguous between reflexive and transitive and reciprocal and transitive reading. In particular, the verbal form ‘wash’ can either be transitive or reflexive, while the verbal form ‘kiss’ can either be transitive or reciprocal. This syncretism in the morphology of the verbs in question can very rarely lead into ambiguous readings. This is mainly because transitive verbs in English usually require their object to be spelled out.

So, we can say ‘people wash things every day’ but we cannot say ‘people wash every day’ meaning ‘people wash things every day’. In chapter 4, I discuss Rizzi (1986), who argues that there is an (arbitrary) object pro in Italian but not in English (or in Greek, as I show there). The construction ‘people wash every day’ has only one reading, namely the reflexive one.

We now turn to reflexive nominals.

4.3 Reflexive nominals

Reinhart & Siloni (2003a, 2003b) argue that reflexive nominals are attested in languages of the lexicon setting type, like in English and in Hebrew. This is ruled out in the syntactic setting type of languages such as French. The underlying assumption here is that nominalization is realized in the Lexicon, as argued in detail in Siloni (1997).

In particular, the English example (84a) has the reading ‘she dresses herself elegantly’, whereas the French example (84b) can only mean ‘Jean dresses other people’:

(84a) She dresses slowly because she is an elegant dresser

(84b) Jean est un excellent habilleur /
Jean is-3sg an excellent dresser /
maquiller
make-up-er
‘Jean is an excellent dresser / make-up-er’

Hebrew also makes use of reflexive nominals:

(84c) hitraxcut
‘self-washing’

(84c’) histarkut
‘self-combing’

More precisely, Reinhart & Siloni look at verbs that may have a reflexive reading, that is, verbs that take an agentive subject ([+c+m]) in their transitive alternate. They observe that these verbs may have a reflexive reading also when they undergo nominalization. Other types of verbs do not have a reflexive reading when they undergo nominalization. For example:

(84d) John is always proud of himself. *He is an admirer.

The noun ‘admirer’ in (84d) cannot have the reading ‘John admires himself’, despite the relevant context. We may thus conclude that the reflexive reading of a given nominal in English is directly linked to the availability of a reflexive alternate of the same verb.

In languages of the syntactic setting there are no nominals with reflexive reading, because nominalization is realized in the Lexicon, whereas reflexivization takes place in the Syntax.

Greek patterns with French: the process of nominalization does not give rise to nouns with reflexive reading. For example, the nominal element *plistra* ‘washer’ in (85a) can be used in the sense that Maria washes clothes, but it can never mean that Maria washes herself:

(85a)	I	Maria	ine	jrijori
	the-nom	Maria-nom	is-3sg	quick-f-nom
	plistra			
	washer-f-nom			
	‘Maria is a quick washer’			

Other nominals without a reflexive reading, although they form reflexive verbs, are the following: *raftis* ‘sewer / dresser’, *makijier* ‘make-upper’ (a loan word from French), *parusiastis* ‘presenter’.

There are few points to be addressed here regarding the validity of the present test.

Firstly, there are reflexive verbs in English that do not give rise to reflexive nominals, such as ‘wash’:

(85b) *John is a washer

Next, the Hebrew nominals in (84c) are quite different from the English nominals in (84a). The former refers to a self-activity, while the latter refer to someone who does something to himself.

Greek forms certain reflexive nominals with the prefix *afto* 'self' that resemble to the Hebrew examples. However, Greek differs from Hebrew in that the prefix *afto* 'self' can attach only to certain verbs, namely not the 'typical' reflexive ones. So, (86a) is acceptable, but (86b) is ruled out:

(86a) *aftokatastrofi*
self-destruction
'self-destruction'

(86b) **aftoplisimo*
self-washing
'self-washing'

This is a puzzle for any analysis of reflexive forms in Greek. I tentatively assume that the availability of reflexive nominals of this type is directly linked to general restrictions on the attachment of the prefix to a verb (cf. chapter 3).

5 A problem: benefactor reflexivization

Reinhart & Siloni (2003a, 2003b) argue that in syntactic languages, reflexivization targets the benefactor, as in the French example below:

(87a) Jean *s'* est acheté une voiture
Jean *se* has-3sg bought a car
'Jean bought himself a car'

(87b) Jean s' est envoyé une lettre
 Jean se has-3sg sent a-acc letter-acc
 'Jean sent a letter to himself'

Note here that Italian behaves like French with respect to all the data discussed so far, and so it allows for reflexivization of the benefactor (the example is repeated from the Introduction):

(87c) Gianni si è comprato una macchina
 Gianni se has-3sg bought a car
 'Gianni has bought himself a car'

(87d) Gianni si è mandato una lettera
 Gianni se is-3sg sent a letter
 'Gianni sent a letter to himself'

However, this is not true for languages of the lexicon type, like English:

(88a) John sent a letter

Example (88a) cannot mean 'John sent a letter to himself'.^{xxxvii} The situation is similar in Hebrew, another language of the lexicon type:

(88b) *Dan hištale'ax mixtav
 Dan sent(refl) letter
 'Dan sent a letter to himself'

More precisely, Reinhart & Siloni (2003b) argue the clitic *se* in Italian and French can reduce accusative or dative. The thematic arity operation and, more precisely, syntactic bundling (cf. Reinhart & Siloni 2003b), takes place upon merge of the external argument in two place or three place predicates. This is impossible in the Lexicon either because of the

reduction rule that determines that the accusative feature of the verb is eliminated when reduction applies in the Lexicon or due to a side effect of the type of verbs that allow reflexivization in lexicon languages.

Reflexivization of the benefactor is not attested in Greek:

(89a) *O Yanis stalthike ena jrama
 the-nom Yanis-nom sent-te-3sg a-acc letter-acc
 ‘Yanis sent a letter to himself’

(89b) *O Yanis ajorastike ena
 the-nom Yanis-nom bought-te-3sg a-acc
 aftokinito
 car-acc
 ‘Yanis bought a car for himself’

(89c) *I jineka majireftike patates^{xxxviii}
 the-nom woman-nom cooked-te-3sg potatoes-acc
 ‘The woman cooked potatoes for herself’

Note here that the passive reading is also excluded.

All the evidence that we saw up to here suggests that Greek is a syntactic language and not a lexicon language. Reflexivization of the benefactor points out, though, that Greek differs from other syntactic languages. At this stage we would either have to reject benefactor reflexivization as being one of the diagnostics for syntactic languages or we could make an attempt to explain why Greek is different from French, Italian (and German).

In the next section I will explain why Greek lacks reflexivization of the benefactor. The explanation is attributed to the use of a suffix on the verb rather than a clitic, as in languages like French and Italian. The lack of reflexivization of the benefactor is thus linked to the lack of impersonals (cf. chapter 1 for a discussion on the latter).

Chapter 3

The explanation: case-absorption domains

1 Introduction

The previous chapter consisted of a discussion on (reflexive) verbs in Greek formed with the suffix *-te*. My aim was to investigate whether Greek is a language of the syntactic setting or of the lexicon setting. In the distinction I follow work by Reinhart & Siloni (2003a, 2003b), who argue that reflexive verbs are formed by a thematic arity operation that applies either in the Lexicon or in the Syntax. The Greek case turned out not to be clear. Greek shares some similarities with languages of the syntactic setting, namely the productive nature of reflexivization, the possibility of reflexivizing into ECM predicates – even though not in a straightforward way in Greek – and the lack of reflexive nominals with parallel reflexive verbal forms, but fails the diagnostic test of benefactor reflexivization. Specifically, Greek differs from French and Italian in that it does not allow reflexivization of the benefactor (examples repeated from chapter 2):

(87a) Jean *s'* est acheté une voiture
Jean se has-3sg bought a car
'Jean bought himself a car'

(87b) Jean *s'* est envoyé une lettre
Jean se has-3sg sent a-acc letter-acc
'Jean sent a letter to himself'

(87c) Gianni *si* è comprato una macchina
Gianni se has-3sg bought a car
'Gianni has bought himself a car'

(87d) Gianni si è mandato una lettera
 Gianni se is-3sg sent a letter
 ‘Gianni sent a letter to himself’

(89a) *O Yanis ajorastike ena
 the-nom Yanis-nom bought-te-3sg a-acc
 aftokinito
 car-acc
 ‘Yanis bought a car for himself’

(89b) *O Yanis stalthike ena jrama
 the-nom Yanis-nom sent-te-3sg a-acc letter-acc
 ‘Yanis sent a letter to himself’

Note here that reflexivization of the benefactor is a possible option when a full anaphor is used (this shows that reflexivization of the benefactor is logically possible in Greek):

(90) O Yanis estile ena jrama
 the-nom Yanis sent-3sg a-acc letter-acc
 ston eafto tu
 to-the-acc self-acc his
 ‘Yanis sent a letter to himself’

But the fact that it is nevertheless impossible with *te*-reflexivization raises the question whether reflexivization in Greek takes place in the syntax after all. I argue that it does, but there is an independent explanation for why the benefactor does not undergo reflexivization. This is the main issue of the present chapter. The explanation relies on issues of case. Specifically, case plays an important role when thematic arity operations apply in the module of Syntax. In order to give a clear view of the role of case, we will discuss how case interacts with reflexivization and reciprocalization.

More precisely, my aim is to provide empirical evidence that case absorption affects the range of application of arity operations. This enables the unification of a number of phenomena under the hypothesis that their (non)-appearance is due to case reasons. Reflexivization of the benefactor is linked to reflexivization of the possessor: both are unattested in a language like Greek. It is thus suggested that the two phenomena require the same explanation. Furthermore, any theoretical reason that prevents these two instances of reflexivization from appearing in Greek is argued to also explain why reciprocalization never targets the benefactor or the possessor in Greek.

2 Case-absorption domains and thematic arity operations

There are many analyses of Romance clitics. For example, Burzio (1981, 1986) views the Italian clitic *si* as a marker of suppression of the subject thematic role in the case of inchoatives and reflexives. In the case of intrinsic reflexives, the clitic indicates that the subject position is non-thematic. Hulk & Cornips (2000), on the other hand, associate the clitic *se* with aspect. They suggest that *se / zich* is not specified for case or phi-features (except for a [person] feature) and plays a crucial role for the Aktionsart (i.e. the relation between the verb and its (internal) arguments). This is achieved by creating a “transitional” aspectual perspective on the event that is expressed by the verbal predicate and its arguments. Structurally speaking, *se / zich* heads, according to Hulk & Cornips, a (aspectual) functional projection.^{xxxix} McGinnis (to appear) argues that *se* is assigned the external theta-role and is bound by a DP that moves to the structural subject position. So, McGinnis’ explanation of a number of cross-linguistic data relies to a large extent on restrictions on movement.

I assume, following Reinhart & Siloni (2003a, 2003b), that the clitic *se* in Romance is not an argument of the verb (cf. also Grimshaw 1982^{xl} and Marantz 1984), but an element that is merged on Inflection (cf. Cinque 1988) in order to absorb case. I argue that the Greek suffix-*te* has a similar function, i.e. it is a case-absorber. Note here that Reinhart (2000) differentiates the Italian reflexive clitic *si* from the Dutch reflexive clitic *zich*. The latter is argued to be an anaphor (cf. also Everaert 1986, Reinhart & Reuland 1993, Reuland 2001), behaving like a regular object when reflexivization applies. More precisely, *zich* has some case and therefore it occurs in a syntactic argument position. For Reinhart *zich* is

thus distinguished from the Italian *si*, which is not an argument, but a clitic originating on Inflection (or Tense).

We now turn to an explanation of the lack of reflexivization of the benefactor in Greek (cf. 89a, 89b). The explanation is based on the hypothesis that a suffix has a smaller absorption domain of grammatical functions than a clitic. Greek makes use of a suffix, while French, Italian have a clitic.

2.1 The case-absorption domains of the suffix

Summarizing the theoretical assumptions in Reinhart (2000, 2003) and Reinhart & Siloni (2003a, 2003b) up to now:

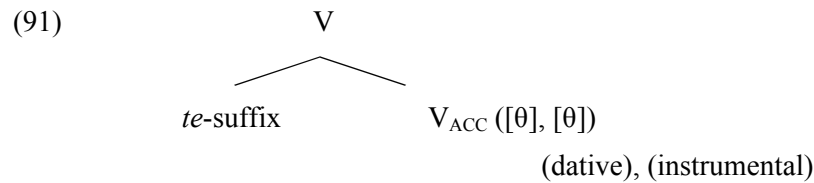
-It is argued that the verbal morphology (for example, the clitic *se* in Romance) always absorbs case. Because it absorbs case it is possible not to realize an argument in that position.

-Consequently a theta-problem occurs. There is one argument position less than there would be theta roles to be projected. The remaining theta-criterion problem is handled by an arity operation. If there is an operation that can take care of the unassigned theta-role, the derivation will converge.

-What does absorbing case mean? Reinhart & Siloni (2003b) argue that case has two parts, thematic (inherent) case and structural case and that these options are parametrized. The morphology absorbs thematic case. If the language has also structural case, an additional mechanism is needed. I will not discuss the distinction between structural and thematic case here, but I will provide evidence for the case-absorption hypothesis in Greek.

I argue here that three kinds of case absorbing morphemes are attested: suffix, clitic and argument. This corresponds to positions: the suffix is on the Verb (Greek *-te*), the clitic is on Inflection (Italian/French *si/se*) and the weak clitic is in internal argument position (German/Dutch *sich/zich*). The domain of the suffix is only accusative. The domain of the clitic is accusative, dative and nominative. The domain of the argument is the positions in which it can occur.

In particular, I argue that the suffix is merged with the verb:



Within the Theta System, the ACC is a feature of the verb and not so much a feature of a theta-role. In other words, the accusative feature is a specification of the verb itself. Other instances of case are parasitic to theta-clusters of the verb. In (91) $[\theta]$ stands for theta-clusters, the accusative case feature appears on the verb when relevant (i.e. according to the lexicon marking rules of the Theta System) and other instances of case are perhaps specified on the theta-clusters in a non-systematic way (i.e. given language-specific properties). We thus expect a suffix, which is clearly part of the verbal morphology (and thus, in the Theta System, necessarily part of the Lexicon) to absorb only the ACC (as a syntactic consequence). Clitics, on the other hand, are part of the inflectional complex, and thus, in principle, part of the Syntax.

There is indeed evidence in the literature for the different behaviour of clitics and affixes (cf. for example Zwicky 1977). That Greek *-te* is different from, for instance, French *se* is illustrated in (92) and (93).

First, an auxiliary may intervene between the clitic and the verb in French:

- (92a) Jean *s'* est lavé
 Jean se is-3sg wash-past
 'Jean has washed'

In (92a), the auxiliary *est* 'is' intervenes between the clitic *se* and the verb (in participial form) *lavé* 'washed'. If a suffix is used, the auxiliary precedes the verb-suffix complex, but it cannot intervene between the verb and the suffix. This is illustrated in the Greek examples below:

- (92b) O Yanis ehi plithi
 the-nom Yanis-nom has-3sg wash-te-past
 'Yanis has washed'

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- (92c) *O Yanis pli-ehi-*thi*
 the-nom Yanis-nom wash-has-3sg-te-3sg
 ‘Yanis has washed’

The example in (92c) is not acceptable because the auxiliary *ehi* ‘has’ intervenes between the verb (i.e. the root of the verb) and the suffix.

Furthermore, clitics may appear either before or after the verb, depending on the mood. This is illustrated in French:

- (93a) Indicative: Tu *te* laves
 you se wash-2sg
 ‘You washe (yourself)’

- (93b) Imperative: Lave-*toi!*
 wash-2sg-you
 ‘Wash (yourself)!’

Note here that the clitic changes morphological form. I will not discuss this here. I will just assume that both forms represent the reflexive paradigm (i.e. give rise to the reflexive reading). Affixes differ from clitics in that they always appear in the same position:

- (93c) Indicative: O Yanis plene*te*
 the- Yanis-nom wash-TE-3sg
 ‘Yanis washes (himself)’

- (93d) Imperative: Plis*u!*
 wash-te-2sg
 ‘Wash (yourself)!’

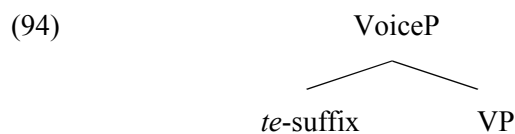
All this indicates that the Greek reflexive *-te* is clearly part of the morphology of the verb, while the French reflexive *se* is part of the inflectional system (i.e. the functional system).

There is a long debate in the literature of Generative Grammar concerning the independence of morphology. For example, Di Sciullo & Williams (1987) argue that morphology is part of the Lexicon, while Baker (1988) suggests that morphology is dependent on Syntax. Following the spirit of the Theta System I assume that morphological manipulation is strictly limited to the Lexicon, not dependent on syntactic computation, although it, of course, will be able to have syntactic consequences. In this particular area it means that the suffix has a syntactic effect, i.e. to absorb case. More precisely, morphology always affects argument structure in a uniform way, namely morphology obligatorily absorbs only the accusative case.

2.2 Existing analyses of the Greek suffix *-te*

I now turn to compare my approach to the prevailing views in Greek syntax.

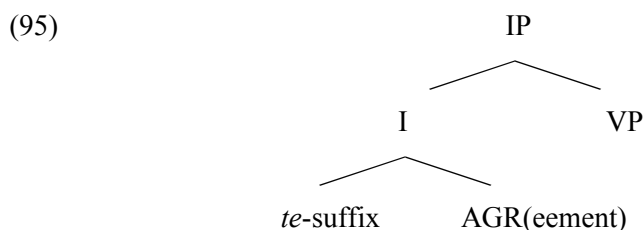
The role of the *te*-suffix as a case absorber has been widely realized in Greek syntax, cf. for example Tsimpli (1989) and Rivero (1990). More precisely, Rivero (1990) suggests that the *te*-suffix, as Voice, heads its own functional projection (NonActive Voice), along the lines of Pollock's (1989) hypothesis that other Inflectional phrases, like Tense and Agreement, also head their own maximal projection:



Rivero argues that the *te*-suffix absorbs case and builds the following argument. First, she observes that anaphor incorporation is an active process in Greek (for details on Rivero's analysis of anaphor incorporation see chapter 2). When the object anaphor incorporates into the verb, it leaves behind an empty category, which has to be anaphoric. If the verb would case-mark this empty category, it would identify it as *pro*, an undesirable result. The *te*-suffix is thus inserted to absorb case and prevent the empty category from being identified as *pro*. The *te*-

suffix is also assigned the external theta-role of the verb, and the internal argument of the verb moves to the subject position, along the lines of Marantz (1984).

Tsimplici (1989), on the other hand, suggests that the suffix *-te* is base-generated on Inflection (cf. also Vassilaki 1989^{xli}) and it absorbs case and theta-role, along the lines of Chomsky (1981, 1986), Jaeggli (1986) and Baker (1988) who have argued that the passive affix absorbs case and the agent theta-role:



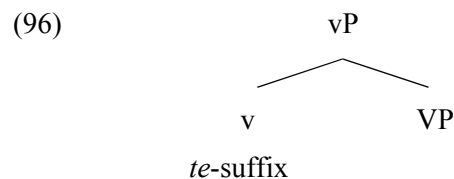
Tsimplici (and Zevgoli 2000^{xlii}) claim that the suffix absorbs only the accusative. Neither Rivero nor Tsimplici (or Zevgoli) discuss the empirical evidence that I provide in this thesis regarding the case-absorbing domains.

In addition, neither Tsimplici nor Rivero can explain the difference between Greek and the Romance languages, where similarly, the clitic (*si*) is generated on Inflection or on Voice Phrase, and absorbs accusative. All the facts that Tsimplici and Rivero capture for Greek are also witnessed in Romance. Nevertheless, in Romance the clitic can also absorb the dative and nominative case, as we saw. If Greek has the same analysis, then what would explain the difference?

On the Theta System, as we saw earlier, the accusative is a feature on V. This, in fact, is not so specific to the Theta System, and is assumed also in some other framework (early minimalism). Assuming this, only if the clitic/suffix is on V, would its ACC only domain be captured. As I will show, this is a univarsal property, which appears for example also in Russian. Everaert (1999) observes that the Russian suffix *sja* seems to absorb only the accusative case. We will return to Russian in section 5.

Similar is the problem with other analyses that assume that the *te*-suffix is merged on “small v” – cf. Theofanopoulou (1999, 2001), Embick (2003) and Anagnostopoulou & Alexiadou (2003): they cannot explain why, from the “small v” position, the Greek *-te* cannot absorb the dative.

In particular, they argue that verbal morphology is sensitive to the absence of an external argument by the means of an abstract feature [NonAct] (NonActive). Passives, reflexives and unaccusatives thus appear in the same syntactic environment:



More precisely, Alexiadou & Anagnostopoulou (2003) suggest (following Kratzer 1993 and Chomsky 1995) that little vPhrase determines the transitive vs. intransitive and the eventive vs. stative nature of a predicate. They relate the suffix *-te* to an operator denoting result, which they call *become/result*. Unaccusative verbs, which they label anti-causatives or inchoatives, are thus formed on the basis of an intransitive *v become/result*, which embeds either an AdjectivePhrase (AP) or a voicePhrase (vP) or a possessive construction. *Become* selects an AP or a possessive construction, whereas *result* selects a voice phrase. These could be viewed, in a way, as semantic consequences of the selectional properties of “small v”: if the v-head selects for an adjectival phrase or for a possessive construction, the v-head expresses the semantic function “become”. If the v-head selects for a voice phrase, then the “result” is expressed.

Embick (2003) argues that only the theoretical framework of Distributed Morphology (cf. for example Halle & Marantz 1993) can account for the underspecification of morphology with respect to Syntax, pure lexicalist theories cannot. This approach cannot explain the ambiguous readings of a *te*-verb in Greek (since one morphological form – *te*-morphology - and one syntactic structure - unaccusative derivation - is always involved).^{xliii}

Within Alexiadou & Anagnostopoulou (2003) and Embick (2003), it is presumably still possible to argue that the Romance clitic merges on a higher position than the Greek suffix (i.e. only the *te*-suffix is on “small v”, while the *se* clitic is possibly on I). However, it would still be hard to understand why the suffix on “small v” cannot absorb dative.

In addition, these analyses depend on aspect; but there are no aspectual differences between passives and reflexives in Greek and Romance. My position is not based on any aspectual properties of the *te*-suffix, but I

argue for a general property of suffixes versus clitics, and all languages with a suffix have the same ACC only case domain. Note here that Tsimpli (1989) also assumes that the suffix has an aspectual reading. Generally, the type of language variations that is discussed here cannot be attributed to aspectual properties. The semantic descriptions that Alexiadou & Anagnostopoulou give to characterize and justify the “small v” position of the suffix *-te* are precisely the same in e.g. Romance, where the clitic is on I. Rather, differences in case properties across languages should be explained morphologically. The distinction between clitic and suffix is a clear morphological distinction that we can expect to find parameters sensitive to.

Next difference is that in my system the fact that the accusative case is absorbed does not necessarily give rise to unaccusative syntax (as suggested by Alexiadou & Anagnostopoulou 2003 and Embick 2003). Specifically, following the main assumptions made in the Theta System, the suffix *-te* always absorbs ACC, but if the derivation is unaccusative or unergative depends on the type of operation that applies. If it is passive (Saturation), then the external role is absorbed and the derivation is unaccusative. If it is reflexivization, then the internal role is not realized, but “bundled” with the external role when it merges (cf. chapter 1 and 2 for a discussion of thematic arity operations and reflexivization respectively). So, the derivation is unergative.

Tsimpli (1989) also argues that the suffix gives rise to an unaccusative construction when it attaches to the verb in the Syntax. The process of *te*-affixation in the Lexicon, on the other hand, gives rise, according to Tsimpli, to unergative constructions (reflexives are thus unergatives, because they are formed, according to Tsimpli, in the Lexicon^{xliv}). I concentrate here more on her syntactic analysis of the *te*-suffix, given the evidence for the syntactic behaviour of Greek reflexive verbs that I presented in chapter 2.^{xlv}

In a nutshell, all the existing analyses (Tsimpli’s 1989, Rivero’s 1990, Alexiadou & Anagnostopoulou’s 2003 and Embick’s 2003) share the view that the *te*-suffix is in a functional projection above V – Inflection, NonActive Voice or “small” v (but not on V). Next, they all take any syntactic derivation that involves the *te*-suffix to be unaccusative and, third, aspect seems to be crucial for most of these analyses.

I am arguing here for a new hypothesis, according to which the *te*-suffix is on V. In other words, the *te*-suffix is a morpheme on the verb that does not head its own functional projection and thus is not inflectional, but, presumably, derivational. It affects the verbal stem it applies to by

preventing the accusative feature of the verb from being visible in the Syntax, and therefore, from being checked by a DP. A thematic arity operation needs to apply, which changes the meaning of the verb. My analysis explains the typological differences between Romance and Greek, namely dative can be absorbed in Romance but not in Greek. Whether the derivation is unaccusative or unergative depends on the type of thematic arity operation that applies, i.e. on the theta-cluster that is reduced (saturation / passivization targets the external theta-cluster, while internal reduction / reflexivization targets the internal theta-cluster). Note here also that no evidence is given for an unaccusative analysis of reflexives in Greek. Lastly, my hypothesis is based on a clear morphological distinction, namely the distinction between clitic and suffix.

2.3 Case-absorption domains and reflexivization

In Reinhart's (1997, 2000, 2003) Theta System, the accusative is the only case that is eliminated when reduction applies in the Lexicon (for details on the Theta System and thematic arity operations cf. chapter 1). In syntactic operations, the domain of case absorption is broader. Reinhart & Sioni (2003a, 2003b) argue that, in languages of the syntactic setting, reflexivization may target either the theme, accusative case-marked, or the benefactor/goal, generally marked by a case other than accusative; in Greek genitive. I show that this claim is consistent. Specifically, I will explain how the suffix only affects the accusative feature of the verb.

First, I will try to explain why the analysis needs to mention both theta-features and case. Reinhart (2000, 2003) points out that the theta specification of theta-clusters is not visible for the Computational System (but rather, is transmitted by the system to the interface). The Computational System can only read the indices associated with the clusters in the Lexicon, and the formal properties of the clusters (e.g. fully specified or not). However, when the arity operation of reflexivization applies in the Syntax, it targets either the theme or the benefactor. If the theta clusters 'benefactor' and the 'theme' are not visible for the Computational System, we need to assume that something else makes the two distinguishable. This is possibly one of the roles of case. More precisely, dative specification (or genitive specification in languages like Greek) of a theta-cluster signals the benefactor or goal. The theme need not be linked to a case directly, since it is associated with the DP that checks the ACC feature on the verb. Let me thus explain a bit more the way that theta specification and case specification interact when

thematic arity operations apply (I take here reflexivization as an example).

Let's take for example the verb-entry in (97a), where θ_1 is any [+] theta-cluster that gets the index 1 and θ_2 is a [-] theta-cluster and more precisely, a [-m-c] that gets the index 2 and also requires the ACC feature on the verb, along the lines of the lexicon rule (15c - from chapter 1): "If the entry includes both a [+] cluster and a fully specified cluster [a/, -c] (that is, a cluster that contains [-c] and some other feature), mark the verb with the ACC feature".

(97a) $V_{acc} [\theta_1, \theta_2]$

In (97a), the argument that checks theta cluster 2 will be merged internally and will also check the accusative feature of the verb. The argument that checks the theta-cluster 1 will be merged externally. If an arity operation applies, the accusative feature of the verb will be eliminated: by a lexicon rule, if the operation applies in the lexicon or by morphology, if the operation applies in the Syntax. For example:

(97b) John washes Mary -no arity operation
 [+c+m]₁ [-c-m]₂

(97c) Jean lave Marie -no arity operation
 [+c+m]₁ [-c-m]₂

(97d) John washes -lexical arity operation
 [[+c+m][-c-m]]₁

(97e) Jean *se* lave -syntactic arity operation
 [[+c+m][-c-m]]

Let us now turn to a verb-entry with three theta-clusters. In (98a), θ_1 is any [+] theta-cluster that gets the index 1. The two θ_2 clusters are both [-] clusters. More precisely, there is a [-m-c], that gets the index 2 and also

requires the ACC feature on the verb along the lines of the lexicon rule: “If the entry includes both a [+] cluster and a fully specified cluster [a, -c] (that is, a cluster that contains [-c] and some other feature), mark the verb with the ACC feature”. There are no feature restrictions for the other [-] cluster, let us say here that it is [-c].

(98a) $V_{acc} [\theta_1, \theta_2, \theta_2]$

In (98a), the (agent [+c+m]) argument that checks the theta-cluster 1 will be merged externally. The two arguments (theme [-c-m] and goal [-c]) that check the theta clusters with index 2 will be merged internally. The theme- θ_2 ([-m-c]) will also check the accusative feature of the verb.

(98b) John sent a letter to Mary -no arity operation
 [+c+m]₁ [-c-m]₂ [-c]₂

(98c) Jean a envoyé une lettre à Marie -no arity operation
 [+c+m]₁ [-c-m]₂ [-c]₂

If an arity operation applies on the verb-entry in (98a) it will eliminate the accusative feature of the verb, if the operation applies in the Lexicon. If the operation applies in the Syntax, there is an option of eliminating dative case. The verb-entry in (98a) will thus give rise to the following examples, for English/French:

When the arity operation applies in the Lexicon, we assume the following derivation (which gives rise to the English example in 98d):

- i. The theta-clusters θ_1 and goal- θ_2 ([-c]) are manipulated by the thematic arity operation.
- ii. Since a lexicon rule applies, the thematic arity operation eliminates the accusative feature of the verb.
- iii. At the syntactic derivation, the argument bearing the role [-c-m] (theme) is required to have case (by the case filter). As a fully specified [/-c] cluster, only the acc feature can check its case. There is no longer an ACC feature that can do this.

→ The derivation crashes:

(98d) *John sent a letter -lexical arity operation
 = Jean sent himself a letter

When the arity operation applies in the Syntax, on the other hand, we assume the following derivation, which gives rise to the French equivalent of (98d), as illustrated in (98e):

- i. *Se* absorbs the dative case; the dative argument θ_2 is not realized
- ii. The theta-clusters θ_1 and goal- θ_2 ([-c]) are manipulated by the thematic arity operation, i.e. θ_1 and θ_2 are interpreted as a complex theta role [θ_1, θ_2] as a result of the arity operation.
- iii. The theta-cluster theme- θ_2 ([-c-m]) checks the accusative feature of the verb.

→ The derivation converges:

(98e) Jean s'est envoyé_{acc} une lettre -syntactic arity operation / clitic
 = Jean sent himself a letter

Reflexivization here applies in Syntax, which means that both theta roles are available and combined into a complex theta role. The accusative case is checked independently.

Regarding the dative case, suffix language (98f) will have the same result as lexicon language (98d), but for a different reason: the suffix obligatorily eliminates the accusative feature of the verb, because only this case is in the domain of the suffix, so the goal (dative) argument [-c] cannot be reduced. If it was reduced and the suffix absorbed the accusative feature of the verb, the theme argument [-c-m] would be inserted in the derivation with no case. This would lead the derivation to crash. More precisely:

- i. The suffix absorbs the accusative feature of the verb.
- ii. The theta-clusters θ_1 (theme [-c-m]) and θ_2 (goal [-c]) are

manipulated by the thematic arity operation.

- iii. The theme- θ_2 ([-m-c]) needs to check the accusative feature of the verb, which is no longer available.

→ The derivation crashes:

- (98f) *O Yanis stal*thike* ena jrama -syntactic arity operation / suffix
= Yanis sent himself a letter

We may thus conclude that the lack of reflexivization of the dative argument does not entail a lexicon language, unless the language also displays some positive evidence for the lexicon setting.

The hypothesis that Greek is a suffix language makes a number of predictions. In particular, it is predicted that reciprocalization of the benefactor is not attested in Greek. This is borne out, as we will see in section 3. Reflexivization and reciprocalization in inalienable possessive constructions could perhaps be linked to the same hypothesis. Lastly, we turn to Russian and European Portuguese.

3 Predictions

3.1 Reciprocalization of the benefactor

We saw that reflexivization of the benefactor is ruled out in Greek. Siloni (2001) has argued that both reflexivization and reciprocalization are the outcome of the same arity operation, namely internal reduction. This would lead us to expect that reciprocalization of the benefactor is also banned in Greek, because of the use of a suffix.

As Siloni argues, reciprocalization of the benefactor is attested only in languages of the syntactic type. That is, reciprocalization of the benefactor is possible in languages like French, Italian and German, but it is ruled out in languages like English and Hebrew. Observe the English example in (99a):

- (99a) We understand but we are not being understood

Example (99a) cannot have the reading ‘we understand each other but we are not being understood by others’.

Let us look at the relevant examples in Italian and French. Reciprocalization targets the benefactor in French (100a) and Italian (100b). The theme argument is realized in the accusative case:

(100a) Jean et Marie s’ écrivent des lettres
 Jean and Marie se write-3pl some letters
 ‘Jean and Marie write letters to each other’

(100b) Gianni e Maria si sussurano dei segreti
 Gianni and Maria se whisper-3pl some secrets
 ‘Gianni and Maria whisper secrets to each other’

Like reflexives, reciprocal verbs in Greek^{xlvi} are also relatively easy to create, given an appropriate context. The following data are collected from utterances of spontaneous speech. In (99b), a ‘non-standard’ reciprocal verb is formed and it is disambiguated from the passive reading by the conjunct *ala* ‘but’ followed by a periphrastic passive construction. If the verb *katalavenomaste* ‘understand-*te*’ was read as passive, a contradiction would occur; the meaning of the sentence would be that “we are understood by others, but we are not being understood by others”, which, of course, is logically impossible. The only possible option is that the first verb is reciprocal:

(99b) *Katalavenomaste* ala dhe jinomaste
 understand-*te*-1pl but not become-1pl
katanoiti
 understood-pl-nom
 ‘We understand each other but we are not being understood (by others)’

There is thus an interesting difference between Greek (99b) and English (99a). The Greek *te*-verbs can be ambiguous between reciprocal (or reflexive) and passive reading, while the English reciprocal (or reflexive) verbs have the same morphological form as their transitive alternates (ambiguities would only occur with transitive verbs that may appear with an implicit object).

Ter Meulen (2000a and 2000b) discusses semantic paradoxes in English and Dutch that are due to different semantic readings of identical morphological structure. Ter Meulen shows how differences in reflexivization strategies can be explained by optimality considerations and a principle of linguistic economy (i.e. *se*-reflexivization can be viewed as an economical way to “encode coreference derived from ordinary transitive verbs in argument reduced form”). Ter Meulen argues that a number of constraints interact with binding condition B (“co-arguments of a predicate that are not reflexive marked must be interpreted as disjoint in reference” – cf. Reinhart & Reuland 1993) and the referential hierarchy (reflexives are easier to process than pronouns which are easier to process than proper names). The constraints regard both the producer (speaker) and the consumer (hearer) and are of the type: ^{xlvii}

Speaker constraint 1: If the agent is in control, no need to say so.

Hearer constraint 1: If there is no control information, the controller is the agent.

I assume here that ambiguities are attributed to the use of the same morphological form to express the application of different thematic arity operations. The hearer is thus obliged to resort to context in order to distinguish the reading of the verb and reconstruct the thematic arity operation that applies.

Other examples that show that reciprocalization in Greek is more productive than in English are the following:

- (101a) Mi *sfah̄tite* mono!
 neg slaughter-te-2pl only
 ‘Just don’t slaughter each other!’

(101b) Ohi aplos voithun o enas
 not only help-3pl the-nom one-nom
 ton alon ektimunde kiolas!
 the-acc other-acc appreciate-te-3pl also
 ‘Not only do they help each other, but they also appreciate each
 other!’

Note that the equivalent English examples do not have a reciprocal reading:

(101a’) “Just don’t slaughter” cannot mean: ‘Just don’t slaughter each other’

(101b’) “They appreciate” cannot mean ‘They appreciate each other’

This seems to support my observation that Greek is a language of the syntactic setting. Note also the reciprocal variants of the following examples: *heretiunde* ‘greet-*te*’, *kitazonde* ‘look-*te*’, *koroidhevonde* ‘tease-*te*’, *skotononde* ‘kill-*te*’, *vrizonde* ‘swear-*te*’.

However, Greek lacks reciprocalization of the benefactor:

(102a) *O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria jrafonde jramata
 Maria-nom write-te-3pl letters-acc
 ‘Yanis and Maria write letters to each other’

(102b) *O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria *psithirizonde* mistika
 Maria-nom whisper-te-3pl secrets-acc
 ‘Yanis and Maria whisper secrets to each other’

(102c) *O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria *ajorazonde* vivlia
 Maria-nom buy-te-3pl books-acc
 ‘Yanis and Maria buy books for each other’

Other verbs that do not allow reciprocalization of the benefactor are, for example, the following: **fonazonde* ‘shout-*te*’ ‘they shout to each other’, **pistevonde* ‘believe-*te*’ ‘they believe in each other’.

Reciprocalization of the benefactor is only available when an overt anaphor is used, as illustrated in the following examples:^{xlvi}

(103a) O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria *jrafun* *jramata* o
 Maria-nom write-3pl letters-acc the-nom
 enas *ston alo*
 one-nom to-the-acc other-acc
 ‘Yanis and Maria write letters to each other’

(103b) O	Yanis	ke	i	
	the-nom	Yanis-nom	and	the-nom
	Maria	ajorazun	vivlia	o
	Maria-nom	buy-3pl	books-acc	the-
	enas	ya ton	alo	
	one-nom	for	the-acc	other-acc
	'Yanis and Maria buy books for each other'			

Note here that there exist in Greek very few instances of reciprocalization of the dative, for example *miliunde* 'talk-*te*' meaning "they talk to each other / they are in good terms", *telefoniunde* 'call-*te*' meaning "they call each other". Such instances are so restricted that, arguably, fall outside any patterns of the language.

3.2 Reflexivization of the possessor

If reflexivization of the benefactor is possible in French thanks to the use of a clitic being able to absorb any case, while reflexivization of the benefactor is ruled out in Greek, due to the use of a suffix only being able to absorb accusative case, we would predict that reflexivization of the possessor in inalienable constructions displays a similar pattern. That is, we would predict that reflexivization of the possessor is attested in French, a language that makes use of a reflexive clitic, but it is ruled out in Greek, a language that makes use of a suffix. This is borne out, as illustrated below.

Specifically, we observe that reflexivization of the possessor is possible in French. The possessee *les mains* 'the hands' appears in the accusative case as the theme argument of the verb:

(104a)	Jean	s'	est	lavé	les	mains
	Jean	se	washed		the	hands
	'Jean washed the hands / Jean washed his hands'					

The parallel Greek example is not acceptable, as illustrated below^{xlix}:

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(104b) *O Yanis plithike
 the-nom Yanis-nom washed-te-3sg
 ta heria
 the-acc hands-acc
 ‘Yanis washed the hands / Yanis washed his hands’

(104c) *O Yanis htenistike ta malia
 the-nom Yanis-nom combed-te-3sg the-acc hair-acc
 ‘Yanis combed the hair / Yanis combed his hair’

My aim is to explain the similar behaviour between reflexivization of the possessor and reflexivization of the benefactor in Greek and French. The explanation is based on the hypothesis that reflexivization in inalienable possessive constructions involves reflexivization of an argument of the verb (which we could call the benefactor) and not reflexivization of a DP-internal possessor. The latter receives a theta-role from D or from the Noun (the possessee) and is thus not an argument of the verb. The two options, namely the option of having a possessor and the option of having a benefactor, reflect two different transitive constructions. The benefactor is presented in (105a), while the possessor is presented in (105b). The latter will turn out to be ambiguous, as we will soon see.

(105a) O Yanis htenise ta malia
 the-nom Yanis-nom combed-3sg the-acc hair-acc
 ya ti Maria
 for the-acc Maria-acc
 ‘Yanis combed the hair for Maria’
 (i.e. ‘Yanis combed his hair for Maria’)

(105b) O	Yanis	htenise	ta	malia
	the-nom	Yanis-nom	combed-3sg	the-acc hair-acc
	tis	Marias		
	the-gen	Maria-gen		
	‘Yanis combed Maria’s hair’			

Examples (105a) and (105b) involve verbal forms without the suffix *-te*. In (105a), the benefactor is expressed with a PP. The above example can have the reading ‘Yanis combed his own hair for the sake of Maria’ (i.e. to make a good impression on Maria or because Maria asked him to do so). A possible analysis of such an example would involve a PP adjoined at the sentential level (or at the VP level), as in (106). The intermediate ‘bar-levels’ are only mentioned when necessary, i.e. when the specifier position is filled.)

(106) [TP / IP [TP / IP [DP O Yanis] [VP htenise [DP ta malia]]] [PP ya [DP ti Maria]]]

gloss: [TP / IP [TP / IP [DP The Yanis] [VP combed [DP the hair]]] [PP for [DP the Maria]]]

Here, the benefactor is an adjunct. Such a structure would not allow reflexivization, at least not as an outcome of the arity operation of internal reduction. That is, reflexivization cannot target the benefactor in an adjunct position, since, by assumption, reflexivization always targets two arguments of a verb. More precisely, internal reduction targets two sets of theta-clusters that would appear on distinct arguments of the verb, unless manipulated by a thematic arity operation.

Let us now turn to the example (105b). This example is actually ambiguous. It can either have a straightforward reading of the possessor, without any further implication or it can mean that Yanis combed Maria’s hair for Maria’s sake. The latter would be an instance of the benefactor. However, this instance of the benefactor differs from the one presented above. The sentence refers to Maria’s hair and it cannot refer to Yanis’ hair, as was the case with the PP in (105a). Moreover, the benefactor here can appear in (morphological) genitive case, the same case in which the

possessor appears. This is presumably due to a syncretism: genitive and dative were distinct morphological cases in earlier stages of the language. Now, there is no dative case. Nominals that used to bear genitive now appear usually in genitive or else in accusative. The two readings of (105b) are indicated below:

- (107) O Yanis htenise ta malia
 the-nom Yanis-nom combed-3sg the-acc hair-acc
 tis Marias
 the-gen Maria-gen
 ‘Yanis combed Maria’s hair’ OR
 ‘Yanis combed the hair for Maria’
 (i.e. ‘Yanis combed Maria’s hair for Maria’)

The ambiguity corresponds to two different structures. The possessor is usually analyzed as a specifier (cf. for example, Abney 1987, Vergnaud & Zubizarreta 1992). I represent it here as a complement of a noun-head because it seems to behave like other nominal complements: for example, it bears genitive case and it immediately follows the noun-head. Moreover, the possessor can be extracted:

- (108a) Tu Kazatzaki to dhiavases
 the-gen Kazatzaki-gen cl-n-acc read-2sg
 to vivlio?
 the-acc book-acc
 ‘Did you read Kazatzaki’s book?’

- (108b) ?Pianu pires to vivlio?
 whose-gen take-2sg the-acc book-acc
 ‘Whose book did you take?’

Extraction from a complement position is easier than extraction from a specifier position and, therefore, I merge the possessor in the complement

position of the noun-head in Greek. The exact structure of possessive constructions in Greek is beyond the scope of this work. The point here is that the possessor DP must be distinguished from the benefactor in a structural way although the two are morphologically identical: they both appear in the genitive case.

In (109a) the DP in the genitive case *tis Marias* ‘Maria’s / of Maria’ is the complement of the noun *malia* ‘hair’.

(109a) [_{TP/IP} [_{DP}O Yanis] [_{VP}hthenise [_{DP}ta [_{NP} [_N malia [_{DP}tis Marias]]]]]]]

gloss: [_{TP/IP} [_{DP}The Yanis] [_{VP}combed [_{DP}the [_{NP} [_Nhair [_{DP}the Maria’s]]]]]]]

The benefactor may either be an adjunct, as mentioned earlier (in which case it appears as a PP) or an argument of the verb.¹ When it is an argument it appears in genitive case. Note here that adjuncts do not appear in genitive in Greek, but in accusative case.¹¹

In (109b) the DP in the genitive case *tis Marias* is taken to be the IO of the verb; a VP-shell is assumed below.

(109b) [_{TP/IP} [_{DP}O Yanis] [_{VP}hthenise_i [_{VP} [_{DP}ta malia] [_V t_i [_{DP}tis Marias]]]]]]]

gloss: [_{TP/IP} [_{DP}The Yanis] [_{VP}combed_i [_{VP} [_{DP}the hair] [_V t_i [_{DP}the Maria’s]]]]]]]

So far, the two readings are hard to be distinguished and it could be just one: Yanis combed Maria's hair: whether Maria is also a benefactor remains vague. However, the two structures are reflected on two different occurrences of the object clitic (for discussion on ditransitives and clitics cf. Anagnostopoulou 2003), which also reveals a difference in reading. In particular, the structure in (109a) is the equivalent of (110a), where the clitic in genitive *tis* ‘her’ appears right after the noun *malia* ‘hair’. The dominant reading here is the one of the possessor and the benefactive reading, if acceptable at all, is definitely not preferred, i.e. it would require relevant context.

(110a)	O	Yanis	htenise	ta
	the-nom	Yanis-nom	combed-3sg	the-acc
	malia	tis		
	hair-acc	her-gen		
	'Yanis combed her hair'			

The structure in (109b) is shown by the example in (110b): the clitic in genitive *tis* 'her' precedes the verb *htenise* 'combed' and is thus analysed as part of the VP-shell. Note here that the benefactive reading is far more possible in (110b) than in (110a) and could be viewed as the dominant one.

(110b)	O	Yanis	tis	htenise	ta
	the-nom	Yanis-nom	her-gen	combed-3sg	the-acc
	malia				
	hair-acc				
	'Yanis combed her hair (for her)'				

It is not my intention here to give an indepth analysis of the syntactic structures underlying (107). For a detailed analysis of double object constructions in Greek see, for example, Anagnostopoulou (2003) and for a discussion on the dative construction see, for example, Brandt (2003). My aim here is to point out that we have to distinguish two kinds of 'benefactor' given the two kinds of semantic readings. Specifically, the PP in (105a) can have the reading 'Yanis' hair' whereas the DP in genitive in (105b) cannot. This must be reflected in two different structures.

Reflexivization is in principle eligible to apply relatively freely in syntax languages. However, reflexivization cannot target the possessor. The possessor is not an argument of the verb itself, but it is contained in the argument of the verb. Even though we are talking here about the application of this operation in the Syntax, rather than in the Lexicon, reflexivization of the possessor would be problematic, because there is a barrier-NP. More precisely, in syntactic languages, reflexivization is not restricted to co-arguments, as we see in instances of reflexivization into

ECM predicates. In the possessive construction, though, there is a NP / DP that checks the internal theta-cluster of the verb and within this NP / DP there is another nominal element, namely the possessor which presumably receives an independent theta-role within the nominal projection. (Cf. for example Abney's 1987 analysis of possessive constructions and the discussion of possessives in chapter 4.) In terms of Reinhart & Siloni's (2003) analysis based on Chomsky's (2001) Phase Theory, the possessor is not accessible here for the syntactic arity operation because it is not in the same syntactic phase as the external argument at the stage of merge, i.e. the DP containing it is a different phase (for details on their analysis cf. chapter 2).

The possessor and the benefactor-adjunct could perhaps be related to the subject of the verb with some mechanism other than the arity operation of internal reduction (through binding).

To sum up, in this section I addressed the question of reflexivization of the possessor.^{lii} If what looks as reflexivization of the possessor is actually reflexivization of the benefactor, then the theoretical explanation that banned reflexivization of the benefactor in Greek (namely the use of the *te*-suffix) will also capture the data with possessives (i.e. the absence of reflexivization into inalienable possessive constructions in Greek).^{liii}

There is only one way of expressing possession with a reflexive verb in Greek, namely by a DP preceded by a preposition:

- (111a) Htipotan sto kefali
 (pro) hit-te-3sg at-the-acc head-acc
 'He was hitting himself at the head / He was hitting his head'

An open question is whether the PP *sto kefali* 'to the head' is an argument of the verb or not. If the PP is an argument of the verb, then it may appear with the reflexivized verb due to the presence of the Preposition. The DP *to kefali* 'the head' does not check the accusative case of the verb. This follows from the use of a Preposition as a case assigner (cf. Botwinik 2003). If the PP is not an argument, then again case comes from the preposition. The transitive alternate would be (although very marginal, I think):

(111b) ??O	Yanis	htipuse	ton
the-nom	Yanis-nom	hit-te-3sg	the-acc
eafto	tu	sto	kefali
self-acc	him-gen	at-the-acc	head-acc

‘He was hitting himself at the head / He was hitting his head’

4 A note on passives and ‘deponents’

4.1 Passives

In this section, we will briefly discuss passive constructions. What motivated this discussion is the existence of *te*-passive verbs that may take a DP in accusative. This appears to go against my claim that the *te*-suffix always absorbs the accusative case in Greek; but I will show that the DP in accusative could be viewed either as a PP, with a phonologically empty preposition governing accusative case, or as an adjunct, since adjuncts in Greek may appear in accusative case.

In the Theta System, passivization is derived by application of the thematic arity operation of saturation (cf. chapter 2 for details on the definition of saturation). If the operation applies in the Lexicon, the ACCUSATIVE feature of the verb is always eliminated as a result of a lexicon rule. If, on the other hand, passivization applies in the Syntax, the accusative feature of the verb is absorbed by the morphology. The two options have the same consequences with respect to case in Greek and so we will not argue for the one or the other. Specifically, the Greek suffix –*te* only absorbs the accusative case feature of the verb. Two predictions are thus made irrespectively of whether passivization applies in the Syntax or in the Lexicon: i. Passivization of the dative argument is ruled out and ii. A passive verb cannot co-occur with a DP in accusative.

For Greek the first prediction is borne out:

i. Passivization of the dative is not attested in Greek:

(112a) *I	Maria	dhothike	to	vivlio
the-nom	Maria-nom	given-te-3sg	the-acc	book-acc

‘Maria was given the book’

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Within the Theta System (Reinhart 1997, 2000, 2003), the unacceptability of the above example is due to the DP *to vivlio* ‘the book’ not being able to get case - the ACCusative feature of the verb being eliminated in the Lexicon when saturation applies. If saturation applies in the Syntax, the accusative case feature of the verb is absorbed by the suffix, as usually assumed for passive constructions (cf. Chomsky 1981).

Note here that, according to Anagnostopoulou (2003), the ungrammaticality of the above example could be related to the fact that, in Greek, indirect objects have the genitive case: it is usually DPs with accusative that become nominative under passivization.

Note also that the benefactor examples from section 3, where we saw that the benefactor cannot be reflexivized, are also not acceptable with a passive reading:

(112b) *I	Maria	<i>stalthike</i>	ena
the-nom	Maria-nom	sent-te-3sg	a-acc
jrama	apo tin	astinomia	
letter-acc	by the-acc	police-acc	
‘Maria was sent a letter by the police’			

(112b’) *I	Maria	<i>majireftike</i>	
the-nom	Maria-nom	cooked-te-3sg	
makaronia	apo ti	mitera	tis
pasta-acc	by the-acc	mother-acc	her-gen
‘Maria was cooked pasta by her mother’			

If a verb entry lacks an accusative feature, the operation of saturation cannot apply, as illustrated in (113b):

(113a) O Yanis milise sti
 the-nom Yanis-nom talked-3sg to-the-acc
 Maria / tis Marias
 Maria-acc the-gen Maria-gen
 ‘Yanis talked to Mary’

(113b) *I Maria milithike apo
 the-nom Maria-nom talked-te-3sg by
 to Yani
 the-acc Yani-acc
 ‘Maria was talked by Yanis’

There is a group of passive verbs, like *dhidhasko* ‘teach’, *plirono* ‘pay’, *kernao* ‘treat’, *serviro* ‘serve’, that appear with a DP in accusative (cf. Anagnostopoulou 2003, Tsimpli 1989). For example:

(114) Ta pedhia dhidhahtikan jramatiki
 the-nom children-nom taught-te-3pl grammar-acc
 ‘The children were taught grammar’

In (114), the DP *jramatiki* ‘grammar’ bears accusative case and the verb *dhidhahtikan* ‘taught-te’ bears the *te*-suffix. Such constructions seem to be problematic for the present hypothesis, according to which the suffix on the verb obligatorily absorbs only the accusative case. Note here that the suffix is argued to absorb the accusative feature of the verb. The problem is solved if we can show that the DP in (114) does not check the accusative feature of the verb.^{liv}

There are thus two options. The DP in accusative is either an adjunct or it is preceded by a preposition that is phonologically empty (cf. also Anagnostopoulou and Everaert 1999). Therefore, this type of accusative is distinguished from the one that appears on DPs after checking the accusative feature of the verb.

The possibility of having an empty preposition is supported by a comparison of the argument structure of verbs that take two DPs in accusative with the argument structure of a verb like *pliroforo* ‘inform’. In the presence of the suffix *-te*, the verb *pliroforo* ‘inform’ takes either a DP in accusative or a PP:

- (115a) O Yanis pliroforithike (ya)
 the-nom Yanis-nom informed-te-3sg about
 ti dholofonia tu apo tin tileorasi
 the-acc murder-acc his-gen by the-acc TV-acc
 ‘Yanis was informed (about) his murder from the TV’

As illustrated in (115a), the verb *pliroforo* ‘inform’ has a passive alternate, which may appear with a DP in accusative. In this respect, the verb *pliroforo* ‘inform’ has a behavior parallel to the verb *dhidhasko* ‘teach’. There are two questions to be addressed here. Firstly, is the DP *ti dholofonia* ‘the murder’ indeed an argument of the verb and secondly, does the DP *ti dholofonia* ‘the murder’ check the accusative feature of the verb? In order to answer these questions I will look at the transitive variants of the verb. There is only one available transitive construction, as illustrated by the set of examples below. The transitive construction selects one DP in accusative, namely the DP *to Yani* ‘Yani’ and one PP *ya ti dholofonia tu* ‘about his murder’:

- (115b) I astinomia pliroforise to Yani
 the-nom police-nom informed-3sg the-acc Yani-acc
 ya ti dholofonia tu
 about the-acc murder-acc his-gen
 ‘The police informed Yani about his murder’

The option of realizing the DP (*to Yani* ‘Yani’) in the genitive (the equivalent of the dative case in some languages) is ruled out:

- (115c) *I astinomia pliroforise tu Yani
 the-nom police-nom informed-3sg the-gen Yani-gen
 ya ti dholofonia tu
 about the-acc murder-acc his-gen
 ‘The police informed Yani about his murder’

Lastly, the option of realizing both DPs in the accusative is also ruled out:

- (115d) *I astinomia pliroforise to Yani
 the-nom police-nom informed-3sg the-acc Yani-acc
 ti dholofonia tu
 the-acc murder-acc his-gen
 ‘The police informed Yani about his murder’

To sum up, there is only one transitive option, namely the verb selecting one DP in accusative (*to Yani* ‘Yani’) and one PP (*ya ti dholofonia tu* ‘about his murder’). This leads us to the conclusion that the basic lexical verb-entry has two theta-clusters, namely one internal and one external. The internal theta-cluster checks the accusative feature of the verb. The PP / accusative DP is an adjunct. The PP could possibly be selected by the verb, in which case we would assume that the basic verbal entry has three theta-clusters, but one is obligatorily realized as PP.

Note here that the complement of a preposition in Greek is also in the accusative morphology (for example: *me ti Maria* ‘with Maria-acc’, *apo tin karekla* ‘from the-acc chair-acc’). This strengthens the idea that there is an empty preposition in (114).

Let us now return to the verb *dhidhasko* ‘teach’. The preposition *me* ‘with’ may be present:

- (116a) O dhaskalos dhidhakse ta
 the-nom teacher-nom taught-3sg the-acc
 pedhia me ti jramatiki
 children-acc with the-acc grammar-acc
 ‘The teacher taught the children with the grammar’

According to Tsimpli (1989) either the verb is able to assign two structural accusative cases or the non-adjacent NP (DP) receives inherent accusative (a third hypothesis would be that there is an empty preposition that functions as a case assigner). The first hypothesis predicts that either of the two DPs can passivize, whereas the second hypothesis predicts that the DP with inherent accusative cannot passivize. As Tsimpli points out, at first sight the second hypothesis seems to be wrong, because both DPs can passivize:

- (116b) Ta pedhia dhidhahtikan
 the-nom children-nom taught-te-3pl
 jramatiki
 grammar-acc
 ‘The children were taught grammar’

- (116c) Jramatiki dhidhahtike sta pedhia
 grammar-nom taught-te-3sg to-the-acc children-acc
 ‘Grammar was taught to the children’

However, a preposition must be obligatorily present in (116c). Otherwise the example is not acceptable:

- (116d) *Jramatiki dhidhahtike ta pedhia
 grammar-nom taught-te-3sg the-acc children-acc
 ‘Grammar was taught to the children’

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Tsimpli takes this as evidence that the DP *ta pedhia* ‘the children’ does not depend on the verb for case.

We could assume that the DP *jramatiki* ‘grammar’ is an argument of the verb (the DO object) when it appears with an IO that is preceded by a preposition (as in 116c), but it is a modifier (adjunct) when the DO (theme) is expressed with another DP (as in 116b). That is, the verb realizes only one internal argument (the theme), which appears as the DP *jramatiki* ‘grammar’ in (116e) and as the DP *ta pedhia* ‘the children’ in (116f):

(116e) O dhaskalos dhidhakse jramatiki
 the-nom teacher-nom taught-3sg grammar-acc
 sta pedhia
 to-the-acc children-acc
 ‘The teacher taught grammar to the children’

(116f) O dhaskalos dhidhakse ta
 the-nom teacher-nom taught-3sg the-acc
 pedhia jramatiki
 children-acc grammar-acc
 ‘The teacher taught the children grammar’

The verb *dhidhasko* ‘teach’ may also appear with just one argument (116g). The object here is not affected, i.e. the verb *dhidhakse* ‘taught’ can be interpreted as ‘transferred knowledge’ (to the children) but there is no immediate consequence that the children were affected by this activity (i.e. ‘became knowledgeable’).

(116g) O dhaskalos dhidhakse ta
 the-nom teacher-nom taught-3sg the-acc
 pedhia
 children-acc
 ‘The teacher taught the children’

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Note here that the verb *dhidhasko* ‘teach’ cannot appear with three DPs in accusative:

- (116h) *O Yanis dhidhakse ta pedhia
 the-nom Yanis taught-3sg the-acc children-acc
 arhea elinika ti jramatiki
 ancient-acc Greek-acc the-acc grammar-acc
 ‘Yanis taught the children ancient Greek (with) the grammar’

This could be attributed to independent reasons, namely restrictions on co-occurrences of adjuncts.

There is some evidence that the DP *jramatiki* ‘grammar’ in (116f) does not pattern with other arguments. For example, extraction from a complement position is usually easier than extraction from an adjunct position. Extraction from the complex DP *ti jramatiki ton arheon elinikon* ‘the grammar of ancient Greek’ is ruled out (the examples are from Anagnostopoulou 2003, who argues that the DP has inherent case).

- (117a) O dhaskalos dhidhakse ta
 the-nom teacher-nom taught-3sg the-acc
 pedhia ti jramatiki ton arheon
 children-acc the-acc grammar-acc the-gen ancient-gen
 elinikon
 greek-gen
 ‘The teacher taught the children the grammar of ancient Greek’

- (117b) **Ton arheon elinikon o*
the-gen ancient-gen Greek-gen the-nom
dhaskalos dhidhakse ta pedhia
teacher-nom taught-3sg the-acc children-acc
ti jramatiki
the-acc grammar-acc
‘*Of ancient Greek the teacher taught the children the grammar’

There is a contrast between (117b) and (117c). Extraction from the complex DP is impossible if there are two DPs in the accusative. However, extraction is acceptable, although not so good, if the complex DP is the only DP in the accusative case. This contrast possibly indicates that the DP is an adjunct in (117b) and that it is an argument in (117c).

- (117c) ?*Ton arheon elinikon o*
the-gen ancient-gen Greek-gen the-nom
dhaskalos dhidhakse ti jramatiki
teacher-nom taught-3sg the-acc grammar-acc
‘*Of ancient Greek the teacher taught the grammar’

Note here that if a phonologically empty Preposition precedes the DP *ti jramatiki ton arheon elinikon* ‘the grammar of ancient Greek’ then the extraction facts have a different explanation. Extraction from PPs is generally hard to find. So, an empty preposition might be present in (117b) where extraction is impossible. In (117c), on the other hand, there is no empty preposition and extraction is acceptable, even though not perfectly good.

In addition, clitic doubling is not allowed as illustrated below (the example is taken from Anagnostopoulou 2003).

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- (118a) **Tin* dhidhaksa ta pedhia
 cl-f-sg-acc taught-1sg the-acc children-acc
 ti *jramatiki* *ton* *arheon* *elinikon*
 the-acc grammar-acc the-gen ancient-gen Greek-gen
 ‘I taught-it the children the grammar of ancient Greek’

In general, object arguments in Greek may appear in clitic doubling constructions, while adjuncts may not.

An accusative argument (DO) can be doubled by a clitic even if it follows the IO:

- (118b) *Ta* edhosa tu Yani
 cl-3sg-n-acc gave-1sg the-gen Yani-gen
 ta *lefta*
 the-acc money-acc
 ‘I gave Yani the money’

Note, however, that clitic doubling is allowed when one DP is passivized!

- (118c) *Ta* pedhia ti dhidhahtikan
 the-nom children-nom cl-f-sg-acc taught-te-3sg
 ti *jramatiki* *ton* *arheon* *elinikon*
 the-acc grammar-acc the-gen ancient-gen Greek-gen
 ‘The children were taught the grammar of ancient Greek’

This is something unexpected and hard to explain given the evidence presented so far. I leave this problem open for further research.

Summarizing, double accusative verbs have been the main issue of this section, because they form passives with a DP in the accusative. There is evidence that this type of accusative is the one that appears on adjuncts. Another option is that an empty preposition precedes the DPs under consideration.

Other verbs with an optional preposition are:

(119a) *hreonome* (me) to *lojariasmo*
 charge-te-1sg with the-acc bill-acc
 ‘I charge myself with the bill / I charge the bill to myself’

(119b) *fortonome* (me) to *sako*
 load-te-1sg with the-acc sac
 ‘I put the sac on my back’

The argument / adjunct distinction is a complicated issue for Greek. This is because adjuncts may appear in the same case as arguments, usually the accusative case. In addition, PPs may either be arguments (i.e. check a theta-cluster of the lexicon verb-entry) or adjuncts (i.e. modifiers with no theta specification). I will present an example that shows the difficulty of such a task.

Let us look at (120a):

(120a) I Maria *anisihise* ya
 the-nom Maria-nom worried-3sg about
 tin *ijia* tis me to
 the-acc health-acc her-gen with the-acc
 jrama tu *yatru*
 letter-acc the-gen doctor-gen
 ‘Mary worried about her health with the doctor’s letter’

The question here is whether the PP *me to jrama tu yatru* ‘with the doctor’s letter’ is an argument or an adjunct. In other words, does the PP check a theta-cluster of the verb or not? (Note that the equivalent English example, as it appears in the glosses ‘Mary worried about her health with the doctor’s letter’, is meaningless in English).

The following basic entry is suggested for the verb *anisiho* ‘worry’:

(120b) anisiho(‘worry’)acc [+c] [-c+m] [-m]
 cause experiencer subject matter

Reinhart (2000, 2003) argues that an experiencer ([-c+m]) merges externally (i.e. in the subject position) only when the thematic arity operation of reduction applies. The operation here reduces the cause theta-cluster ([+c]). When this happens, the ACC feature of the verb is reduced, so the experiencer cluster is free to merge externally.

In (120a) *i Maria* ‘Maria’ is the experiencer ([-c+m]) and *ya tin ijia tis* is the subject matter ([-m]). The cause ([+c]) has been reduced. So, all the theta-clusters of the basic verb-entry have either been assigned or reduced.

What about the PP *me to jrama tu yatru* ‘with the doctor’s letter’? This is not a realization of the cause ([+c]) theta-cluster, because this has been reduced and it is not a realization of the subject matter ([-m]) because this is checked by the DP *ya tin ijia tis* ‘about her health’. There is only one option: the PP *me to jrama tu yatru* ‘with the doctor’s letter’ is an adjunct. So, the instrument PP is sometimes an argument and sometimes an adjunct (instruments are obligatorily arguments only with manner verbs; with other types of verbs they can be either arguments or adjuncts).

In (120c) the PP *me to jrama tu yatru* ‘with the doctor’s letter’ is a realization of the ([-m]) theta-cluster that has the option of being interpreted as the instrument ([-m+c]) due to its underspecified character – it has only one feature. Once again, the PP cannot be the realization of the cause ([+c]) argument because this has been reduced for the experiencer to appear externally:

(120c) I	Maria	anisihise	me	to
	the-nom	Maria-nom	worried-3sg	with the-acc
	jrama	tu yatru		
	letter-acc	the-gen doctor-gen		
	‘Mary worried with the doctor’s letter’			

To conclude, I have argued that the PP *me to jrama tu yatru* ‘with the doctor’s letter’ is either an adjunct (120a) or an argument (120c).

Along the same lines, I have suggested that a DP in the accusative may either be an argument or an adjunct. This explains why there are *te*-verbs, which appear with an accusative DP. The latter is an adjunct.

4.2 Deponents

Deponent verbs constitute an interesting group, mainly because they seem to behave like transitives, the complement taking accusative case:

- (121a) *Skeftome* *ton avriano* *ajona*
 think-*te*-1sg the-acc tomorrow-m-sg-acc fight-acc
 ‘I am thinking about the fight tomorrow’

This is very unusual, given that the suffix *-te* is systematically linked to the elimination of the accusative feature of the verb.

Zombolou (1997) specifies the following characteristics of deponent verbs. Firstly, deponents always appear with the suffix *-te* and they do not have an active voice^{lv} (cf. also Triantafilidis 1991). In other words, they display only one variant. For example:

- (121b) *Skeftome* / **skeft-o*
 think-*te*-1sg think-1sg
 ‘I am thinking’

Other verbs of the same type are: *sevome* ‘respect’, *episkeptome* ‘visit’, *ebistevome* ‘trust’, *esthanome* ‘feel’.

Some deponent verbs do have an active voice, however, which is characterized by a change in the meaning:

- (121c) *Tsakono* / *Tsakonome*
 catch-1sg fight-*te*-1pl
 ‘I am catching (someone in the act)’ ‘I am having a fight’

Other examples that display a change in the meaning are: *mirazo* ‘divide, distribute’ / *mirazome* ‘share’, *orkizo* ‘to put on oath’ / *orkizome* ‘swear’.

Deponent verbs do not allow reflexive or reciprocal or passive reading (that is, they are never ambiguous)^{lvi}. This possibly indicates that deponents are stored in the Lexicon in the same way that idioms are assumed to be stored. If this is true, deponents are not subject to thematic arity operations or any other mechanism that would result in a change of their meaning. The number of verbs of this group is relatively restricted. Zombolou (1997) reports a number of 205 deponent verbs.

I take the lack of a transitive alternate to indicate that the suffix *-te* has no (syntactic) function in the case of deponents. This is compatible with Reinhart & Siloni’s (2003a, 2003b) theory, according to which the clitic *se* has a function only in languages of the syntax setting of the Lexicon/Syntax parameter (cf. chapter 2). Moreover, the clitic *se* has a function only when it appears with those verbal forms, which are the outcome of a thematic arity operation that applies in the Syntax. For example, the clitic *se* absorbs case when it appears with a reflexive verb in French or Italian, but it has no (syntactic) function when it appears with an unaccusative verb in French or Italian. This is because unaccusatives are formed in the Lexicon even in languages with the syntax setting of the parameter. In the same vein, if deponent verbs in Greek are not formed in the Syntax, it is possible to assume that the *te*-suffix may appear on the verb without any (syntactic) function.

5 Further predictions: cross-linguistic data

In this section we will discuss the predictions made by the present hypothesis, namely that a suffix on the verb obligatorily prevents the accusative case feature from being checked by a DP. We will discuss the case of Russian, a language that also uses a suffix on the verb to indicate reflexivization/passivization, namely the suffix *-sja*. Portuguese will also be mentioned briefly. This is just a small sample of the kind of work that needs to be done in the future in order to further evaluate the approach put forward in this study. At this stage, the facts are quite promising, but further research would be required to reach firm conclusions.

5.1 Russian^{lvii}

Russian can use a suffix (Schoorlemmer 1996) to mark reflexives and reciprocals^{lviii}. A first prediction is that ambiguities are attested in Russian (Channon 1974), as is the case in Greek.^{lix} In (122a), the suffix *-sja* appears as *-s*':

- (122a) Ja brejus' v ètoj parikmaxerskoj
 I-nom shave-1sg-sja in that barbershop
 'I shave (myself) in that barbershop'
 OR 'I get my shaves in that barbershop'

Moreover, the form *moetsja* 'wash-sja' is reflexive (122b) or passive (122c) (Channon 1974). It is contextual considerations that determine the reading, as is the case in Greek (cf. chapter 2).

- (122b) Ivan moetsja mylom
 Ivan-nom wash-3sg-sja soap-instr
 'Ivan is washing himself with a soap'

- (122c) Okno moetsja rabočim
 window-nom wash-3sg-sja workman
 'The window is being washed by the workman'

Next, it is predicted that reflexivization does not target the benefactor in Russian. This is borne out:

- (123) *John posylajetsja (pis'mo)
 John-nom sent-3sg-sja letter-acc
 'John sent a letter for himself'

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A similar prediction is made for reciprocals: we expect reciprocalization to target an argument in accusative but not an argument in dative. This is borne out. Example (124a) is the reciprocal variant of a transitive verb that takes an accusative object (124b):

(124a) Vanja i Masha celovalis'
Vanja-nom and Mary-nom kiss-3pl-sja
'Vanja and Masha kissed'

(124b) Vanja celuet Mashu
Vanja-nom kiss-3sg Masha-acc
'John kisses Mary'

A full anaphor may, of course, be used as well:

(124c) Vanja i Masha celovali
Vanja-nom and Masha-nom kiss-3pl
drug druga
each other-acc
'Vanja and Masha kissed each other'

If the transitive verb takes an argument in the dative, reciprocalization is ruled out:

(125a) *Vanja i Masha
Vanja-nom and Masha-nom
pishutsja
write-3pl-sja
'Vanja and Masha write (to each other)'

The verb selects for a dative DP:

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- (125b) Vanja pishet Mashe
Vanja-nom write-3sg Masha-*dat*
'Vanja writes to Masha / corresponds with Masha'

Note here that the periphrastic variant is available:

- (125c) Vanja i Masha pishut drug drugu
Vanja and Masha write-3pl each other-*dat*
'Vanja and Masha correspond with each other / write to each other'

To express the semantics of (125a), another verb is used instead, which literally would have a slightly different meaning (125d). This verb appears with the *sja*-suffix:

- (125d) Vanja i Masha perepisyvajutsja
Vanja-nom and Mary-nom write-3pl-*sja*
'Vanja and Mary write (to each other)'

This verb takes an object in the accusative in its transitive form:

- (125e) Vanja perepisyvaet uprazhnenie
Vanja-nom copy-3sg exercise-acc
'Vanja copies an exercise'

The arity operation of reciprocalization (cf. Siloni 2001) can actually reduce a dative argument in the Lexicon. This is attested in Hebrew:

- (126a) Dan ve-ron hitkatvu
Dan and-Ron wrote-rec
'Dan and Ron wrote to each other / corresponded'

In the Lexicon, the arity operation would however also eliminate the accusative feature of the verb, as a result of a lexicon rule. A DP in accusative is thus ruled out:

- (126b) Dan ve-ron hitkatvu (*mixtavim)
 Dan and-Ron wrote-rec letters
 ‘Dan and Ron wrote to each other / corresponded with each
 other’

Reinhart & Siloni (2003b) place Russian with languages of the lexicon type. Hebrew -another lexicon language- has weak case, which is fully eliminated by the lexicon rule, when the arity operation applies. Russian, on the other hand, has strong case. Its reduction in the Lexicon still leaves a residue (i.e. some case) that needs to be checked. In Romance and Dutch this is done by Inflection (Reinhart & Siloni 2003b). But if a language has only a verbal suffix, this suffix can only reduce the residue of the accusative case and not, say, of the dative case. Thus, an operation available in the Lexicon, in a suffix language, will never have a syntactic realization of accusative, as illustrated in Russian:

- (127) *Vanja i Masha pishutsja
 Vanja-nom and Masha-nom write-3pl-sja
 (pis'mo)
 letter-acc
 ‘Vanja and Masha write (to each other) a letter’

Note here that Russian does not seem to have examples of reciprocalization of the dative at all (even when there is no DP in accusative – cf. example 125a).

The exact properties of Russian are not completely clear. It seems a lexicon language, but it could turn out that Russian is like Greek, i.e. it is a syntax language but the productivity issue is relatively restricted due to the use of a suffix that restricts the range of application of arity operations. If Russian turns out to be a language of the syntax type, then the lack of reciprocalization (and reflexivization) of the dative is

attributed to the use of a suffix in the Syntax that obligatorily eliminates only the accusative case feature of the verb.

5.2 European Portuguese^{lx}

There is strong evidence that European Portuguese is a language of the syntactic type, as I will now illustrate. Firstly, European Portuguese allows for reflexivization to apply into ECM constructions:

- (128a) Joao *considera-se* inteligente
 Joao *considers-se* intelligent
 ‘Joao considers himself intelligent’

In addition, the verb ‘love’ has a reflexive variant in Portuguese (native speakers find the example acceptable but not perfectly fine). This is a verb that does not usually have a reflexive variant unless the language is of the syntactic type.

- (128b) ?Joao *ama-se*
 Joao *loves-se*
 ‘Joao loves himself’

However, Portuguese does not allow reflexivization of the benefactor or of the possessor:

- (128d) *Joao *compra-se* um carro
 Joao *buys-se* a car
 ‘Joao buys himself a car’

- (128e) *Lavar-se as maos
 wash-se the hands
 ‘John washes his hands’

This means that Portuguese seems to be similar to Greek in this respect. If our hypothesis for Greek is correct, we would have to conclude that Portuguese *se* must be affixal in nature, and not a normal clitic as, for instance, French *se*. The fact that Portuguese uses enclisis in the unmarked case, a phenomenon described as morphological in nature (Costa & Martins 2003) might point in that direction.

If right, this would indicate that European Portuguese confirms the generalization that a suffix obligatorily eliminates only the accusative case. European Portuguese belongs to the Romance group of languages. The other Romance languages (French, Italian) have the syntactic setting of the parameter and use a clitic that usually precedes the verb. Like the other Romance languages, Portuguese seems to behave like a syntactic language as we just saw. However, Portuguese does not allow reflexivization of the benefactor. The Portuguese data provide support for the relevance of the clitic / suffix distinction within one group of languages (i.e. languages that share many similarities and therefore are grouped together). French and Italian are clitic languages and so they allow reflexivization of the benefactor, whereas Portuguese is a suffix language and it does not permit reflexivization of the benefactor (or the possessor, if this also turns out to be relevant). Further research would be required to reach firm conclusions.^{lxii}

To sum up, in this chapter we saw a number of facts that lead us to the following generalization. If a thematic arity operation applies in the Syntax, the verbal morphology determines the case that the arity operation may target. The accusative case is obligatorily eliminated if a suffix is used. The theme argument itself may stay: for example, in passive, the theme argument is realized, but since there is no accusative, it has to move. The range of application of an arity operation is different if a clitic is used. Specifically, the arity operation may target either the accusative or the dative. When the relevant arity operation is reflexivization, this entails that it eliminates either the theme or the benefactor.

Note, lastly, that only in languages of the syntactic setting, must a morphological device always be present to absorb case (Reinhart & Siloni 2003a, 2003b). This is borne out. Romance languages use a clitic, *si/se* respectively and Greek uses a suffix, which I have called *-te* here. In languages of the lexicon setting, the accusative feature of the verb is eliminated in the Lexicon, when the arity operation of reduction or saturation applies, which is not necessarily reflected morphosyntactically. The verbal form may remain just the same, as in English (cf. the reflexive verb ‘wash’), or it may undergo a morphological change, unrelated to

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case reduction/saturation, as in Hebrew (cf. the reflexive verb *hitracu* 'washed-refl'). Note here that, according to Reinhart & Sioni (2003a, 2003b) in co-operation with Eric Reuland, Dutch is viewed as a lexicon language that requires *zich* for absorption of the case residue in the Syntax. However, Dutch differs from syntax languages in that part of the accusative is also eliminated in the Lexicon as a result of a lexicon rule that applies together with the thematic arity operation of reflexivization.

Chapter 4

Non-argumental versus argumental morphology

1 Introduction

I argued in chapters 1 and 3 that a number of cross-linguistic facts can be explained under the reflexive clitic/suffix distinction. Reflexive morphology is thus not argumental, but it has a case-absorbing capacity (following Reinhart & Siloni 2003a, 2003b). The case-absorbing capacity of the suffix regards only the accusative case feature of the verb, while the clitic has more options (it can also absorb dative and nominative). An immediate question is whether there is any independent evidence for the function of the reflexive clitic as a case-absorber. Here is the structure of my argument: if reflexive clitics are case-absorbing morphemes, they are not arguments of the verb and they are thus not associated with any theta-clusters of the verb. The theta-roles are taken care of by an arity operation (along the lines of Reinhart 1997, 2000, 2003). If the language makes use of object clitics, we would expect reflexive and object clitics to behave differently. This is indeed the case, for example in French, as observed already in Kayne (1975). Kayne attributes the syntactic differences of object clitics and reflexive clitics to different types of movement that underly their derivation. Here, I attribute the difference to theta-role assignment and case (following Reinhart & Siloni 2003a, 2003b). The main problem in viewing object clitics as arguments is clitic doubling. How can we have two arguments, if they both bear the same theta-role? This is explained in section 3, where I give evidence from Greek in favour of an analysis of object clitics as argumental elements, even in clitic doubling constructions.

2 Reflexive clitics versus object clitics

Object pronominal clitics have a different syntactic behaviour than reflexive clitics / affixes. The immediate question to be raised is why this is so since both are morphologically bound elements. Kayne (1975) was the first to demonstrate how, in French, reflexive clitics do not pattern with object clitics in a number of cases. He captures this under the assumption that object clitics and reflexive clitics undergo a different operation of movement to reach their surface position (more precisely, according to Kayne 1975, reflexive clitics move cyclically, while object clitics move post cyclically). Reinhart & Sioni (2003a, 2003b) refer to the following observations first made by Kayne (1975).

The first argument comes from constructions in French with an expletive subject: verbs with the reflexive clitic *se* may appear with an overt expletive (129a). Verbs with the object pronominal clitic, on the other hand, are banned in the presence of an expletive (129b):

(129a) Il *s'* est dénoncé trois mille
 there *se* is-3sg denounced three thousand
 hommes *ce* mois- ci
 men this month-here
 ‘There were denounced three thousand men this month’

(129b) *Il *les_i* a dénoncés *t_i* trois
 there them has-3sg denounced three
 mille hommes *ce* mois-ci
 thousand men this month-here
 ‘There have been denounced three men this month’

Next, object clitics behave differently from reflexive clitics in causative constructions. In particular, the subject of a transitive verb embedded under the causative verb *faire* ‘make’ must be introduced by the preposition *à* ‘to’:

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(130a) Je ferai laver Max à Paul
 I will-make-1sg wash Max to Paul
 'I will make Paul wash Max'

The subject of an intransitive verb, on the other hand, cannot be introduced by *à* 'to':

(130b) Je ferai courir (*à) Paul
 I will-make-1sg run to Paul
 'I will make Paul run'

When the direct object of the embedded verb is a pronominal clitic, the subject of the verb must be introduced by the preposition *à*, like in the case of transitive verbs:

(130c) Je *le* ferai laver à Paul
 I him will-make-1sg wash to Paul
 'I will make Paul wash him'

However, when the embedded verb appears with a reflexive clitic, its subject cannot be introduced by a preposition:

(130d) Je ferai *se* laver (*à) Paul
 I will-make-1sg se wash to Paul
 'I will make Paul wash (himself)'

Furthermore, verbs with a reflexive clitic in French use the auxiliary *être* 'be' to form complex tenses. As it is always the case with this auxiliary, agreement is obligatory on the past participle of the verb. Transitives, on the other hand, use the auxiliary *avoir* 'have'. Past participle agreement with direct object clitics is optional, at least in some French dialects. It has been argued that the contrast below indicates that reflexive clitics are (syntactically) different from object clitics:

(131a) Marie les a décrit(es)
 Marie them has-3sg described
 ‘Marie described them’

(131b) Marie s’ est décrit*(e)
 Marie se is described
 ‘Marie is described’

I am following to a large extent Reinhart & Sioni (2003a, 2003b), who argue that Romance reflexive clitics and Romance object clitics are used with different types of verbs. Specifically, object clitics appear with the base verb-entry, whereas reflexive clitics appear with verbs that are the outcome of a thematic arity operation (for details on Reinhart & Sioni’s system cf. chapter 2). As for the argumental status of object clitics, I will provide extensive evidence for this from Greek, even from clitic doubling constructions. Note here that clitic doubling has been the main problem for all analyses that viewed clitics as objects of the verbs. Instead of concentrating on the type of verb that is used with reflexive clitics and object clitics (i.e. whether it is intransitive or transitive), we focus here on the argumental versus non-argumental character of object versus reflexive clitics respectively. A large part is devoted to the phrasal syntax of the clitic-doubling complex in Greek.

Constructions with overt expletives (129), causatives (130) and participle agreement (131) are not valid domains for testing (non)-argumenthood in Greek, due to a number of factors. Firstly, Greek is a language that does not have an overt expletive. As illustrated below, in the case of raising verbs and unaccusative verbs the structural subject position is empty, but the constructions are acceptable:

(132a) Fenete oti irthe o Yanis
 seems-3sg that came-3sg o-nom Yanis-nom
 ‘It seems that Yanis came’

- (132b) Irthan tris anthropi
 came-3pl three-nom men-nom
 ‘There came three men’

Secondly, Greek does not have infinitives in causative constructions. That is, the embedded verb always agrees in person and number with its subject, even if the latter appears as the object of the main verb and thus bears accusative case:

- (133) Tha kano to Yani na treksi
 will make-1sg the-acc Yani-nom subj/to run-3sg
 ‘I will make Yani run’

There are two dominating views in the literature: Philippaki (1987), on the one hand, argues that there is no PRO in Greek. Iatridou (1993), on the other, shows that there are instances of PRO (cf. also Anagnostopoulou & Alexiadou 1997 for a discussion of this issue). Given the complexity of the Greek case, I will not investigate this type of constructions any further.

Lastly, Greek does not have past participle agreement. It uses the auxiliary *ehi* ‘have’ for both transitives and reflexives, as illustrated below:

- (134a) I Maria tus ehi plini
 the-nom Maria them-acc has-3sg washed
 ‘Maria has washed them’

- (134b) I Maria ehi plithi
 the-nom Maria-nom has-3sg washed
 ‘Maria has washed (herself)’

There is one observation in the literature that holds for Greek. Marantz (1984) points out that reflexive clitics behave differently from object

clitics in Exceptional Case Marking constructions. The object anaphor in Icelandic, in (135a), *sig* ‘himself’ is assigned accusative by the main predicate *telur* ‘believes’. The predicative adjective *sterkan* ‘strong’ bears accusative case in agreement with its subject *sig* ‘himself’:

(135a) Hann telur [sig vera sterkan]
 he-nom believe-3sg himself-acc to+be strong-acc
 ‘He believes himself to be strong’

However, in the presence of a reflexive verb (135b), the adjective surfaces in the nominative in agreement with *Hann* ‘he’, the subject of the reflexive verb:

(135b) Hann tel-*st* vera sterkur
 he-nom believe-3sg-refl to+be strong-nom
 ‘He believes himself to be strong’

The anaphor (*sig*) in (135a) is the object of the matrix verb in the sense that it bears accusative case, but the reflexive suffix (*-st*) in (135b) is not associated with the object position. The nominative case on the adjective *sterkur* ‘strong’ shows that it is associated with the subject of the matrix verb, i.e. *Hann*, which also bears nominative case.

Parallel examples are attested in Greek (repeated here from chapter 2):

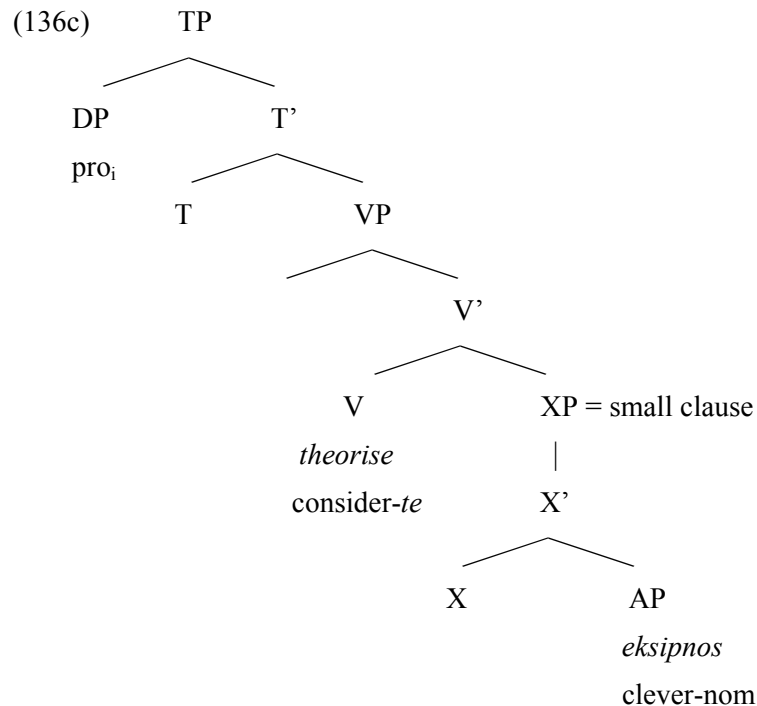
(136a) Theoris [ton eafto su] eksipno
 consider-2sg the-acc self-acc you-gen clever-m-acc
 ‘Do you consider yourself clever?’

In (136a) the object anaphor *ton eafto su* ‘yourself’ agrees with the predicative adjective *eksipno* ‘clever’. Both elements appear in the accusative. In (136b) the *te*-suffix is used and the predicative adjective *eksipnos* ‘clever’ agrees with the subject of the verb (which is implied here as Greek is a pro-drop language):

- (136b) *Theorise eksipnos?*
 consider-te-2sg clever-m-nom
 ‘Do you consider yourself clever?’

No matter what the exact analysis is for a construction like (135b) (small clause or complex predicate formation), we observe that the adjective *eksipnos* ‘clever’ bears the nominative case. The case issue, namely how does the subject and the adjective appear in the nominative, is an important one. I assume that the *te*-suffix absorbs the accusative case feature of the verb. As for the adjective, presumably there is some case sharing under a subject-predicate relationship (the subject is here phonologically empty, but if it was spelled out, it would be in nominative case).

For reasons of clarity, I give an analysis in terms of a small clause structure (for a discussion of small clauses cf., for example, Hoekstra 1988):

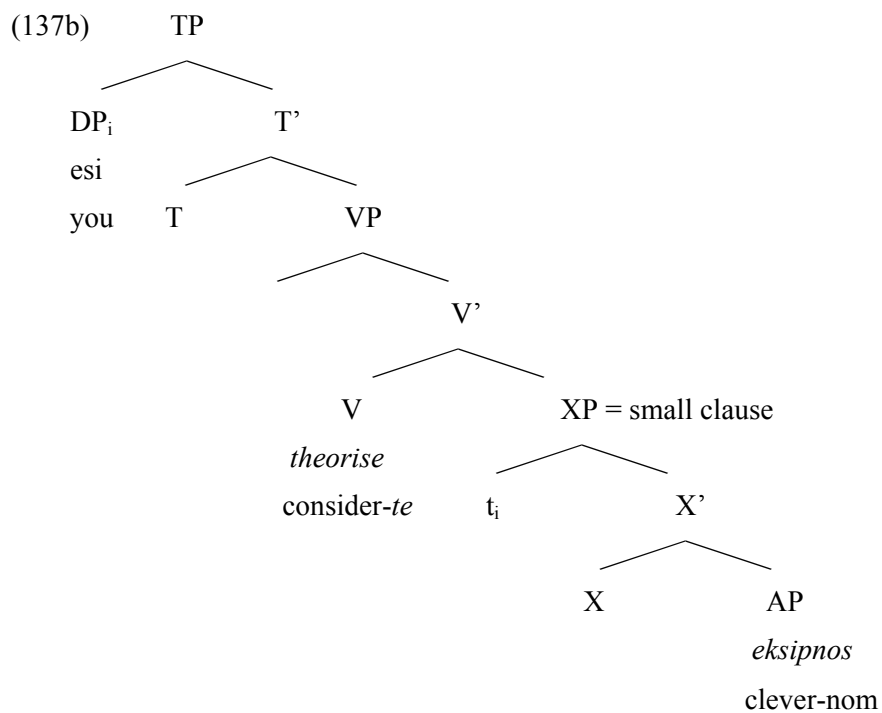


I assume here, following Reinhart & Sioni (2003b) that the specifier of the small clause does not project when reflexivization applies. More precisely, Reinhart & Sioni argue that the operation of ‘bundling’, which gives rise to a reflexive verb, applies upon merge (and insertion of the external argument -for details on the thematic arity operation of reflexivization cf. chapter 2). What allows reflexivization into small clauses, according to Reinhart & Sioni, is the observation (within Chomsky’s 2001 Phase Theory) that a small clause is not a phase because there is no CP.

This is also supported by movement facts.

For example, the Greek example *theorise* ‘consider-*te*’ has a passive reading (as well as a reflexive reading). In passive constructions, an operation of syntactic movement takes place: the DP moves from the subject position of the small clause to the subject position of the main clause, as illustrated in (137a).

- (137a) Esi *theorise* *eksipnos*
 you-nom consider-*te*-2sg clever-nom
 ‘You are considered (to be) clever’



I assume that there is a chain relation between the DP *esi* ‘you’ and its trace.

Evidence for this type of movement comes from French examples like:

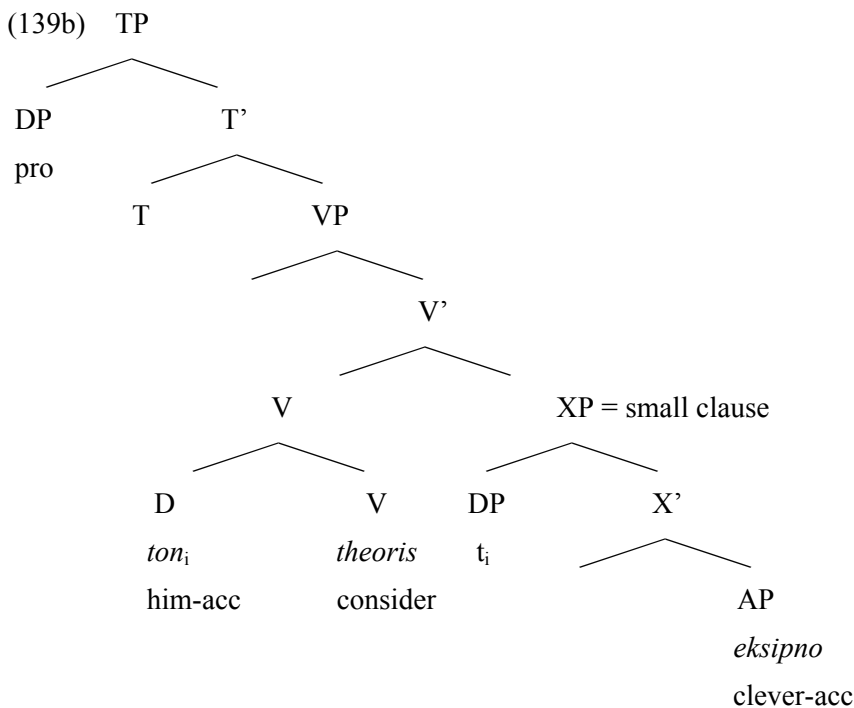
- (138) J’ en considère intelligents trois
 I of-them consider-1sg clever three
 ‘Of them, I consider three clever’

In (138), the clitic *en* ‘of them’ is extracted from the subject of the small clause. The numeral *trois* ‘three’ stays in situ. I assume that a similar operation of movement is possible in constructions with object clitics.

In the presence of the object clitic *ton* ‘him’ (i.e. the small clause subject), the predicative adjective *eksipno* ‘clever’ bears the accusative case. Object clitics thus pattern with full anaphors but not with reflexive suffixes (in the latter, we saw that the adjective is in the nominative). I

assume here that the object clitic is extracted from the subject of the small clause. (In the rest of this chapter, I provide evidence for the specifics of the syntactic analysis of object clitics, especially in clitic doubling constructions).

- (139a) *Ton* *theoris* *eksipno*
 him-acc consider-2sg clever-m-acc
 ‘Do you consider him clever?’



We are thus led to the conclusion that object clitics are arguments that check the accusative feature of the verb (in the case of accusative clitics). In (139b) the object clitic *ton* ‘him’ is exceptionally case-marked by the verb. The clitic attaches to the verb.^{lxii} (Arguably, there are further movements, for example the clitic-verb complex moves on to T or the clitic moves to I or to T; we will abstract away from this). Presumably, the adjective (in AP) gets accusative under the assumption that there is case sharing in a subject-predicate relation.

The main problem for the argumental interpretation of pronominal clitics has been clitic doubling: the double appears to be the argument of the verb (cf. work by Kayne 1975, 1991). Kayne attempted to solve this problem by suggesting that a preposition is always inserted in clitic doubling constructions -Kayne's generalization- the preposition would function as a case assigner for the nominal element that was doubled by the clitic. Note here that Kayne's generalization was put forth on the basis of Spanish. In Greek, however, there is no preposition in clitic doubling constructions.

I will show that clitic doubling is not really a problem for the hypothesis that pronominal clitics bear a theta-role. On the contrary, it is argued here that clitic doubling constructions actually provide very interesting evidence for the nature of pronominal clitics as (parts of the) arguments of verbs. In Kayne (2000) it is also argued that the clitic and the double start out as a constituent, in examples of obligatory clitic doubling in French, along the lines of Uriagereka (1995). I maintain here the idea that the clitic and the double form a constituent, but the details of the hypothesis are slightly modified. (See also Papangeli 2000).

3 Clitic doubling: object clitics are argumental

Kayne (1975) first argued that object pronominal clitics are arguments of the verb that undergo movement to their surface position. Philippaki - Warburton (1987, 1999) makes a similar suggestion for Greek. Specifically, Philippaki-Warburton suggests that object pronominal clitics start out as phrases in the verbal complement position and adjoin to the verb as heads by an operation of movement. The dual nature of object clitics is also observed in Chomsky (1995): clitics are both Xs and XPs. The main problem for such approaches is clitic doubling.

The term 'clitic doubling' usually refers to a (syntactic) configuration where two elements, a pronoun and a DP, seem to compete for the same theta-role:

- (140) *Ton idha to Yani hthes*
 cl-3sg-m-acc saw-1sg the-acc Yani-acc yesterday
 'I saw Yani yesterday'

In the above example the pronoun *ton* ‘him’ and the DP *to Yani* ‘(the) Yani’ are potential arguments of the verb. However, the assumption that both receive the same theta-role would lead to a violation of the theta-criterion. There are three possible solutions to this problem:

- i. The DP-double is in a right dislocated position (Philippaki-Warbuton 1987, 1999 for Greek), which implies that only the pronominal clitic bears the theta-role. Specifically, object pronominal clitics start out as DPs in the verbal complement position and adjoin to the verb as D-heads by an operation of syntactic movement. The DP-double in a dislocated position is associated with the clitic-head in the same way as a dislocated DP is associated with a co-referential pronoun.
- ii. The clitic is base-generated above VP (Sportiche 1992, 1998, Agouraki 1992 and Anagnostopoulou 1994 for Greek), which implies that the clitic does not bear the theta role of the verb, on the assumption that the theta-role of the object is always assigned VP-internally (or checked by a DP in a VP-internal position). A phrase-double (XP*) is merged as the complement of the verb and is presumably assigned the internal theta-role of the verb. The clitic is related to its double after movement of the XP* (which is either overt or null) to the specifier of the projection headed by the clitic.
- iii. The clitic and its double start out as a constituent (Uriagereka 1995 and Torrego 1998, Papangeli 2000 for Greek). There are two ways of dealing with such a hypothesis. Either the clitic takes the DP-double as its specifier or it selects the DP-double as its complement. Uriagereka (1995) (also Torrego 1998) have argued that at least some clitics are D-heads that take the double as their specifier. Another proposal is that a pronoun may take a DP as its complement (Papangeli 2000, 2002 – note here that there are different analyses of Greek full pronouns, for example, as specifiers – Panagiotidis 2000). This hypothesis is related to theories of object clitics as elements that select for a pro complement (Borer 1984, Jaeggli 1986). Corver and Delfitto (1999) also argue for the transitive nature of object clitics. Clitics are assumed to undergo movement to a position above the verb^{lxiii}. Corver and Delfitto argue that pronoun movement can be derived from the interaction between the lexical/semantic properties of the clitic (for example “human”) and general licensing conditions in Syntax (for example checking of case features).

I will show that:

-The double cannot be in a right dislocated or in a specifier position (i.e. in the specifier of the clitic-head), because extraction from it is possible.

-The clitic is not merged in a functional head above VP because the clitic and the double may form a constituent at some stage of the derivation.

-In the absence of clitic doubling, it is hard to assume a *pro* in the object position that would be assigned the theta-role of the verb: Greek fails Rizzi's (1986) tests for object *pro*, which means that there is no independent evidence for the availability of an object *pro* in the language.

3.1 The analysis of clitic doubling

Sportiche (1992 / 1998) argues that clitics are functional heads generated in the extended verbal projection. A phrase-double (XP*) is merged as the complement of the verb. It is thus assumed that the clitic is never assigned the internal theta-role of the Verb. The clitic is related to its double after movement of the XP* (which is either overt or null) to the specifier of the projection headed by the clitic. In the absence of a double, Sportiche is forced to assume a *pro* in the verbal complement position, which is assigned the internal theta-role of the verb. If there were no *pro* as the complement of the verb, the internal theta-role would remain unassigned and the derivation would crash (unless an arity operation would take care of the theta-role – cf. chapter 1 for a discussion of arity operations within Reinhart's 1997, 2000, 2003 Theta System). Greek lacks independent evidence for the presence of an object *pro*. More precisely, Greek behaves like English in that an understood object is not active in the Syntax (although Greek differs from English in that it allows for subject *pro*). An understood object is syntactically active in other languages, like Italian, as argued by Rizzi (1986). Specifically, an empty object in Italian (but not in English or Greek) acts as a controller of an embedded subject, it qualifies as the antecedent of a reflexive and it can be modified by a secondary predicate.

Let us look into Rizzi's tests in more detail. Italian allows for a phonologically null direct object to act as the controller of a subject that is generated in an embedded clause. In the following example, the empty direct object of the verb *conduce* 'leads' is shown to control the subject of the embedded verb *concludere* 'to conclude':

- (141a) Questo conduce [PRO a concludere
 this leads-3sg to conclude
 quanto segue]
 what follows-3sg
 ‘*This leads one [PRO to conclude what follows]’
 (Rizzi 1986:503)

The English example in the gloss is unacceptable, illustrating how Italian differs from English.

It is hard to apply the same test to Greek: the Greek examples are not clear cases of control, because the embedded verb always agrees with its subject. Philippaki-Warbuton (1987) argues that there is no PRO in Modern Greek, whereas Iatridou (1993) suggests that there are instances of PRO despite the agreement in the embedded verb. Irrespectively of whether we view the following examples as instances of control or of co-reference, we notice in (141b) that the understood object of the main verb does not control (if there is a PRO in the embedded clause) or co-refer (if there is a *pro* in the embedded clause) with the subject of the embedded verb *katalavun* ‘understand’. The object of the main verb has to be spelled out, as illustrated in (141b) and (141c):

- (141b) *Afto kani na katalavun
 this-nom make-3sg subj/to understand-3pl
 ti akoluthi
 what follow-3sg
 ‘This makes/leads to understand what follows’

- (141c) Afto kani *tus anthropus*
 this-nom make-3sg the-acc people-acc
 na katalavun ti akoluthi
 subj/to understand-3pl what follow-3sg
 ‘This makes/leads the people to understand what follows’

- (141d) Afto *tus* kani na
 this-nom cl-3pl-m-acc make-3sg subj/to
 katalavun ti akoluthi
 understand-3pl what follow-3sg
 ‘This leads them to understand what follows’

We now turn to antecedents of reflexive anaphors. In Italian, a phonologically empty object is a potential antecedent for a reflexive. In the example below, the understood object of the verb *riconcilia* ‘reconciles’ is the antecedent of the anaphor *con se stessi* ‘with oneself’:

- (142a) La buona musica riconcilia con se stessi
 the good music reconciles-3sg with oneself
 ‘Good music reconciles one with oneself’
 (Rizzi 1986:504)

Similar examples are ruled out in Greek. The understood object of the verb *simfilioni* ‘reconciles’ cannot bind the reflexive anaphor in (142a). The reflexive anaphor needs to be bound by a phonologically realized object, as shown in (142b) and (142c):

- (142b) *I kali musiki simfilioni
 the-nom good-nom music-nom reconcile-3sg
 me ton eafto tus
 with the-acc self-acc cl-3pl-m-gen
 ‘Good music reconciles with themselves’

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(142c) I kali musiki simfilioni
 the-nom good-nom music-nom reconcile-3sg
 tus *anthropus* me ton eafto
 the-acc people-acc with the-acc self-acc
 tus
 cl-3pl-m-gen
 ‘Good music reconciles people with themselves’

(142d) I kali musiki *tus*
 the-nom good-nom music-nom cl-3pl-m-acc
 simfilioni me ton eafto *tus*
 reconcile-3sg with the-acc self-acc cl-3pl-m-gen
 ‘Good music reconciles them with themselves’

Moreover, a phonologically null object can be the subject of a secondary predicate in Italian. In the example below, the understood object of the verb *rende* ‘renders’ is modified by the predicate *alegri* ‘happy’:

(143a) Questa musica rende [alegri]
 this music renders-3sg happy-3pl
 ‘This music renders people happy’
 (Rizzi 1986:505-507)

The situation is different in Greek. The understood object of the verb *kani* ‘makes, renders’ cannot be modified by the secondary predicate *eftihismenus* ‘happy’, despite the agreement marker on the latter:

(143b) *Afti i musiki kani
 this-nom the-nom music-nom makes
 eftihismenus
 happy-pl-m-acc
 ‘This music renders / makes people happy’

Only a phonologically realized object may qualify as the subject of a secondary predicate. In the following example, the object *tus anthropus* ‘(the) people’ is the subject of the secondary predicate *eftihismenus* ‘happy’:

(143c) Afti i musiki kani
 this-nom the-nom music-nom make-3sg
 tus anthropus *eftihismenus*
 the-acc people-acc happy-pl-m-acc
 ‘This music renders / makes people happy’

(143d) Afti i musiki *se*
 this-nom the-nom music cl-2sg-m-acc
 kani *eftihismeno*
 make-3sg happy-sg-m-acc
 ‘This music renders / makes you happy (i.e. This music makes one happy)’

All in all, there doesn’t seem to be much independent evidence for an object *pro* in Greek. Of course, one might argue that in clitic constructions lacking a double, it is the clitic head that licenses and identifies *pro*, so that object clitics and subject agreement play the same role as far as *pro* licensing is concerned. However, such a hypothesis would be unfalsifiable. In addition, object clitics are not required in Italian for the presence of the object *pro* (as illustrated by Rizzi’s examples above). In other words, there is at least one language, namely Italian, where object *pro* is used without obligatory presence of an object clitic. It is thus not clear why in another language, namely in Greek, the

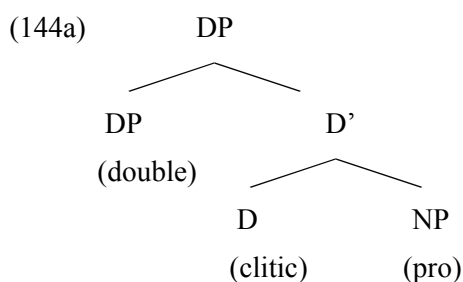
situation would be different and a clitic would have to be obligatorily present in the relevant constructions. If object *pro* were dependent on object clitics, we would expect this to be attested in all languages and not just in some languages.

To sum up, Sportiche is forced to assume that a *pro* is merged in the object position, in constructions without doubling. This *pro* is assigned the internal role of the verb. However, Greek lacks any independent evidence for the existence of object *pro*. If an object *pro* is not available in the language, only one conclusion is possible: In the absence of a DP-double of the clitic, the internal theta-role of the verb remains unassigned.

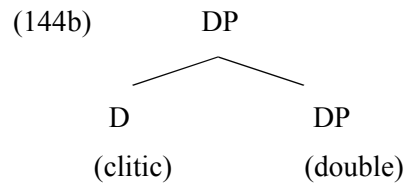
This would be a disadvantage for any analysis that assumes the clitic to be base-generated as a functional head in the (extended) verbal projection. The alternative is to assume that pronominal clitics are merged VP-internally (i.e. in a theta position).

It is thus suggested that pronominal clitics start out as complements of the verb. There are two possible theories of clitic doubling in accordance with this assumption. The DP-double is either the specifier of the clitic-head or it is its complement. The former is argued for in Uriagereka (1995) (and Torrego 1998). The latter is defended here (cf. also Papangeli 2000).

Uriagereka (1995) argues that at least some clitics are determiners that take the double as their specifier and a *pro* as their complement. The clitic undergoes movement to reach its surface position:



Uriagereka discusses the movement of the clitic and the properties of its landing site. Here, I concentrate on the position from which the clitic starts out. I suggest that clitics are functional heads (presumably D-heads) that take a DP (double) as their complement^{lxiv}:



Evidence that the clitic selects a DP (and not a NP) comes from the following examples:

(145a) *O Yanis *ton* idhe
 the-nom Yanis-nom cl-3sg-m-acc saw-3sg
 andhra
 man-acc
 ‘Yanis saw man’

This could possibly be interpreted as a semantic restriction on “doubling” (i.e. the doubled DP must always be a definite DP). It is indeed the case that the DP cannot appear with an indefinite article as illustrated in (145b). (There are very few exceptions like: *tha to epina ena ouzaki* ‘I would drink an ouzo’ - cf. Anagnostopoulou 1994):

(145b) *O Yanis *ton* idhe
 the-nom Yanis-nom cl-3sg-m-acc saw-3sg
 enan anthropo
 a-acc man-acc
 ‘Yanis saw a man, i.e. Yanis saw someone’

The lower D (article within the DP-double) and the higher D (clitic) match in certain features (case, gender, number, person).

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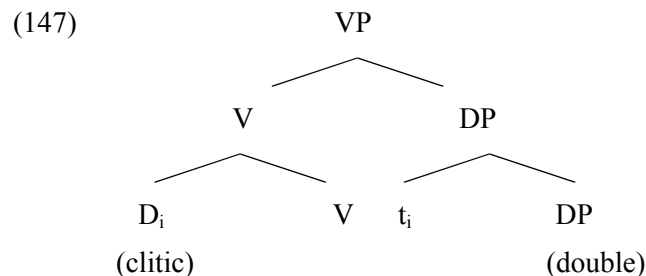
- (146a) **Tu* idha to *Yani* Case
 cl-3sg-m-gen saw-1sg the-acc *Yani*-acc
 ‘I saw *Yani*’
- (146b) *Idha* ton *kipo* tu
 saw-1sg the-acc garden-acc the-gen
spitiu
 house-gen
 ‘I saw the garden of the house’
- (146c) **Ton* idha ti *Maria* Gender
 cl-3sg-m-acc saw-1sg the-acc *Maria*-acc
 ‘I saw *Maria*’
- (146d) *Idha* ton *patera* tis *Marias*
 saw-1sg the-acc father-acc the-gen *Maria*-gen
 ‘I saw *Maria*’s father’
- (146e) **Ton* idha tus *andhres* Number
 cl-3sg-m-acc saw-1sg the-gen men-gen
 ‘I saw the men’
- (146f) *Idha* ton *patera* ton *koritsion*
 saw-1sg the-acc father-acc the-gen girls-gen
 ‘I saw the father of the girls’
- (146g) **Se* idha to *Yani* Person
 cl-2sg saw-1sg the-acc *Yani*-acc
 ‘I saw *Yani*’

- (146h) *Idha ton patera su*
 saw-1sg the-acc father-acc your-gen
 ‘I saw your father’

I assume here that the clitic and the double are related through an operation of feature sharing that applies between the (functional) heads of a single extended projection (Grimshaw 1991, 1999) –so, the clitic head agrees with the determiner head in the DP-double. Examples (146a), (146c), (146e), (146g) are unacceptable because this restriction is violated. The structure in (144a), on the other hand, does not impose any agreement restrictions, and, indeed, if we assume that this is the structure for possessives^{lxv}, it is borne out: there is no obligatory agreement between the possessor and the possessee in (146b), (146d), (146f) and (146h).^{lxvi} (Note also here that the Greek possessive constructions differ from the English possessive constructions. The possessor in Greek follows the nominal head. The argument still holds because possessive constructions in English do not display any agreement restrictions either.)

A pronominal clitic must thus always have the same grammatical features as its double (see Philippaki 1987 for a similar observation), when the two elements start out as a constituent (as opposed to constructions where the double is appositional).

Under both structural analyses (i.e. 144a and 144b), it is assumed that the clitic moves to its surface position. An immediate question is what triggers movement of the clitic. This could perhaps be attributed to semantic purposes (for example, specificity - Uriagereka 1995). This movement is only possible if the clitic is the highest head (i.e. D⁰) in the extended nominal projection, due to the Head Movement Constraint:



To sum up, it is suggested here that the derivation of the clitic-double complex consists of two steps: first, a determiner (D) merges with NP. This DP is subsequently merged with a clitic – pronominal D and as a result of that becomes the “double” of the clitic pronoun. So, the complement position of the clitic is the “doubled position”.

Evidence for the status of the “double” comes from extraction facts. In particular, it is possible to extract from the DP-double of a clitic in Greek:

(148a) To troo to pastitsio
 cl-3sg-n-acc eat-1sg the-acc pastitsio-acc
 tis manas mu
 the-gen mother-gen cl-1sg-gen
 ‘I eat my mother’s pastitsio’

(148b) ?Tis manas mu to troo
 the-gen mother-gen cl-1sg-gen cl-3sg-f-acc eat-1sg
 to pastitsio
 the-acc pastitsio-acc
 ‘My mothers, I eat the pastitsio’

The (?) is used in (148b) to indicate that the example is acceptable only under specific circumstances, i.e. an appropriate intonation is needed. The VP structure of the two examples is represented below:

(149a) [_{VP} [_V to_i [_V troo]]] [_{DP} t_i [_{DP} to [_{NP} pastitsio [_{DP} tis manas mu]]]]]

gloss: [_{VP} [_V it_i [_V eat]]] [_{DP} t_i [_{DP} the [_{NP} pastitsio [_{DP} the-mother’s mine]]]]]

(149b) [CP...[CP [DPtis manas mu]_j [VP [V to_i [V troo]]] [DP t_j [D' t_i [DP t_j [D' to
[NP pastitsio [DPt_j]]]]]]]]]

gloss: [CP...[CP [DP the mother's]_j [VP [V it_i [V eat]]] [DP t_j [D' t_i [DP t_j [D' the
[NP pastitsio [DPt_j]]]]]]]]]

The DP *tis manas mu* ‘my mother’s’ is extracted from the DP *to pastitsio tis manas mu* ‘my mother’s pastitsio’. If the DP-double of the clitic were merged in the specifier position (or in an adjunct position), we would expect extraction from the double to be banned: the specifier (or the adjunct) of a complement should be an island. The extraction facts can only be explained on the assumption that the DP-double is a complement, namely the complement of the clitic-head. As it is generally accepted, extraction from the complement (of a complement) is unproblematic^{lxvii}. There is more evidence in the literature for the status of the “double” as a complement. For example, Anagnostopoulou (1994, 2003) and Alexiadou & Anagnostopoulou (2000) also argue that the “double” of a clitic may occupy a complement position, but for them it is the complement position of V⁰.^{lxviii}

Note here that a clitic may also be “doubled” by a phrase in an adjunct position (i.e. either in a left peripheral or right peripheral position). In this case, the internal theta-role of the verb is assigned to a “bare” clitic (DP), which is associated with its double through co-reference, possibly established outside the module of Syntax. (Reinhart 1983 discusses co-reference and Cinque 1990 discusses possible analyses of Clitic Left Dislocation CLLD). For example:

(150a)	<i>Ti</i>	<i>Maria</i>	<i>tin</i>	<i>ksero</i>
	the-nom	Maria-nom	cl-3sg-f-acc	know-1sg
	<i>kala</i>			
	well			
	‘Maria, I know her well’			

(150b)	Ton	jnorisa	stin	Athina
	cl-3sg-m-acc	met-1sg	at-the-acc	Athens-acc
	perisi	ton	adherfo	su
	last-year	the-acc	brother-acc	yours-gen
	'I met him in Athens last year, your brother'			

I concentrate here on the case where a pronoun and its double are related syntactically, i.e. they start out as a constituent.

An important claim I make in this section is that clitics are argumental elements in the sense that they bear a theta-role of the verb even in clitic doubling constructions. My analysis is, in a sense, compatible with Longobardi's (1994) claim that only DPs are arguments (or argumental elements, as I use the term here). In section 3.2, I provide evidence for this claim.

3.2 Evidence that clitics are argumental in clitic doubling

In this section, it is argued that the object clitic (together with the DP-double) is an argument of the verb, on the basis of the following facts:

- i. Object clitics behave similarly to full pronouns, which are arguments of the verb.
- ii. Object clitics form a constituent with their double, in clitic doubling constructions (whereas reflexive clitics / affixes never form a constituent with the subject with which they agree).

To begin with, there is a strong morphological similarity in Greek between reduced (i.e. clitic) pronouns and full personal pronouns. Object clitics are usually identical to parts of full personal pronouns (either to an affix or to a part of the root). This observation is compatible with Horrocks (1997), who argues that Modern Greek clitic pronouns are derived diachronically from the Ancient Greek pronoun *afton* 'him', after loss of the first syllable *af*. The similarities between clitic pronouns and full personal pronouns are indicated in the table below (based on Drachman 1997:221). The similarities appear in 'italics':

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(151)			<i>Full pronominal forms</i>		<i>Clitics</i>	
			Gen	acc	gen	acc
1sg			Emena	<i>emena</i>	mu	<i>me</i>
2sg			Esena	<i>esena</i>	su	<i>se</i>
3sg	masc		<i>Aftu</i>	<i>afton(e)</i>	<i>tu</i>	<i>ton(e)</i>
	fem		<i>Aftis</i>	<i>afti(n)(e)</i>	<i>tis</i>	<i>ti(n)(e)</i>
	neut		<i>Aftu</i>	<i>afto</i>	<i>tu</i>	<i>to</i>
1pl			<i>Emas</i>	<i>emas</i>	<i>mas</i>	<i>mas</i>
2pl			<i>Esas</i>	<i>esas</i>	<i>sas</i>	<i>sas</i>
3pl	masc		<i>Afton</i>	<i>aftus</i>	<i>tus</i>	<i>tus</i>
	fem		<i>Afton</i>	<i>aftes</i>	<i>tus</i>	<i>tis-tes</i>
	neut		<i>Afton</i>	<i>afta</i>	<i>tus</i>	<i>ta</i>

Furthermore, clitics and full pronouns appear in similar configurations. Both clitics and full pronouns can either replace a DP (152b, 152c) or appear together with it (152d, 152e). In the latter, the full pronoun has a deictic interpretation^{lxix}:

(152a) O Yanis idhe *ton andhra*
the-nom Yanis-nom saw-3sg the-acc man-acc
‘Yanis saw the man’

(152b) O Yanis idhe *afton*
the-nom Yanis-nom saw-3sg him-acc
‘Yanis saw him’

(152c) O Yanis *ton* idhe
the-nom Yanis-nom cl-3sg-m-acc saw-3sg
‘Yanis saw him’

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(152d) O Yanis idhe *afton*
 the-nom Yanis-nom saw-3sg him/this-acc
 ton andhra
 the-acc man-acc
 ‘Yanis saw this man’

(152e) O Yanis *ton* idhe
 the-nom Yanis-nom cl-3sg-m-acc saw-3sg
 ton andhra
 the-acc man-acc
 ‘Yanis saw the man’

Full pronouns can remain in situ (152b) and may appear adjacent to their double (152d), while pronominal clitics always undergo movement to appear preverbally (152a, 152e).

A clitic may also appear together with a full pronoun and a “double” DP:

(153) O Yanis *ton* idhe
 the-nom Yanis-nom cl-3sg-acc saw-3sg
 afton *ton andhra*
 him-acc the-acc man-acc
 ‘Yanis saw this man’

I assume that a recursive D position is available in Greek. The phenomenon of recursivity is well known in Syntax. For example, we may have recursive CPs as in “John thinks that he should not tell anybody that he failed the exam that everybody else passed”.

In the case of full pronouns, no adverbial can intervene between the pronoun and its co-referential DP. This indicates that the pronoun and the DP form a constituent:

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(154)	*O	Yanis	idhe	<i>aftus</i>
	the-nom	Yanis-nom	saw-3sg	them-acc
	hthes	<i>tus anthropus</i>		
	yesterday	the-acc people-acc		
		‘Yanis saw these people yesterday’		

The adverbial can only precede or follow the pronoun-DP complex, showing that the pronoun and its double form a syntactic unit:

(155)	O	Yanis	idhe	(hthes)
	the-nom	Yanis-nom	saw	(yesterday)
	<i>aftus</i>	<i>tus anthropus</i>		(hthes)
	them-acc	the-acc people-acc		(yesterday)
		‘Yanis saw (yesterday) these people (yesterday)’		

If, on the other hand, the DP is in apposition, an adverbial may intervene between the pronoun and its double. This is shown below, where the appositional structure is marked by a long intonational break:

(156)	O	Yanis	idhe	<i>esas</i>
	the-nom	Yanis-nom	saw-3sg	you-acc
	hthes #	<i>tus naftikus</i>	<i>tu</i>	<i>nisiu</i>
	yesterday	the-acc sailors-acc	the-acc	island-gen
		‘Yanis saw you yesterday, the sailors of the island’ ^{1xx}		

When the pronoun forms a unit with the DP, the two elements must have matching features. If the DP-double is in apposition, the features of the pronoun do not necessarily match those of the DP. In the above example, the pronoun *esas* ‘you’ is in the 2nd person, while the DP *tus naftikus tu nisiu* ‘the sailors of the island’ is in the 3rd person. So, the following sentence is out (when there is no intonational break between *esas* ‘you’ and *tus naftikus tu nisiu* ‘the sailors of the island’):

- (157) *O Yanis idhe [esas
 the-nom Yanis-nom saw-3sg you-acc
 tus naftikus tu nisiu] hthes
 the-acc sailors-acc the-gen island-gen yesterday
 ‘Yanis saw you the sailors of the island yesterday’

Another constituency test is preposing. In particular, it is possible to prepose the pronoun together with its “double”, which indicates that they form a constituent (an appropriate intonation is required for the example to be acceptable):

- (158) Aftus tus anthropus o
 them-acc the-acc people-acc the-nom
 Yanis idhe hthes
 Yanis-nom saw-3sg yesterday
 ‘These people, Yanis saw yesterday’

Given the evidence that full pronouns may form a constituent with their double, we now turn to clitics. I will show that object clitics may also form a constituent with their double. Evidence is found in constructions of obligatory clitic doubling. The argument is structured as follows. First, I establish that clitic doubling is obligatory with certain psych verbs. Next, I observe that the pronominal element *o idhios* ‘the same / himself’ may replace the clitic and the DP-double together. Lastly, I argue that this element always substitutes for constituents. Specifically, it can replace the DO of the verb or the VP, which are both constituents, but not two arguments of the verb (i.e. the DO and the IO, without the verb), which do not form a constituent. We may thus conclude that, if it is possible for the pronoun *o idhios* ‘the same / himself’ to substitute for the clitic and the DP-double, then these elements form a constituent.

A clitic is obligatorily present with predicates that select for an experiencer argument. In the following example, the predicate *aresi* ‘likes’ requires a clitic together with the experiencer-DP:

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(159a) *Tu* *aresi* *tu* *Yani*
 cl-3sg-m-gen like-3sg the-gen Yani-gen
i
 the-nom musiki
 music-nom
 ‘The music pleases John / John likes the music’

(159b) *?*Aresi* *tu* *Yani* *i*
 like-3sg the-gen Yani-gen the-nom
musiki^{lxxi}
 music-nom
 ‘The music pleases John / John likes the music’

The clitic is absent only if the experiencer is realized as a PP:

(159c) *Aresi* *sto* *Yani* *i*
 like-3sg to-the-acc Yani-acc the-nom
musiki
 music-nom
 ‘The music pleases John / John likes the music’

When the experiencer-DP is replaced by the pronominal element *tu idhiu* ‘to the same’, the clitic is no longer required. It should be noted here that the judgements are not always straightforward, because of the length of the examples. There are certain speakers who would not use the element *tu idhiu* in the contexts below (for a discussion on this element cf., for example, Varlokosta and Hornstein 1993). Others, however, share my intuitions. Consider now example (160a):

- (160a) *Tu* *aresi* *tu* *kaliteru*
 cl-3sg-m-gen like-3sg the-gen best-gen
mathiti *tis* *taksis* *o*
 student-gen the-gen class-gen the-nom
sinajonismos, *ala* *dhen* *aresi* *tu*
 competition-nom# but neg like-3sg the-gen
idhiu *i* *apotihia*
 same-m-gen the-nom failure-nom
 ‘The best student in class likes the competition, but he does not
 like the failure’

The element *tu idhiu* ‘the same’ replaces the clitic-DP complex: *tu tu kaliteru mathiti tis taksis* ‘the best student of the class’.

Another option is that only the lower DP is substituted, as illustrated below:

- (160b) *Tu* *aresi* *tu* *kaliteru*
 cl-3sg-m-gen like-3sg the-gen best-gen
mathiti *tis* *taksis* *o*
 student-gen the-gen class-gen the-nom
sinajonismos, *ala* *dhen* *tu*
 competition-nom# but neg cl-3sg-m-gen
aresi *tu* *idhiu* *i*
 like-3sg the-gen same-m-gen the-nom
apotihia
 failure-nom
 ‘The best student in class likes the competition, but he does not
 like the failure’

The clitic-DP complex starts out as one constituent (as was illustrated in 160a). Within this complex, the DP-double also forms a constituent, as illustrated in (160b).

The crucial point in both examples is that the pronominal element *o idhios* ‘the same’ always replaces constituents. This is illustrated in the examples below. The pronoun can replace the DO (161a) or the VP (161b), which are constituents, but not both the DO and IO (161c), which are not a constituent:

(161a) O Yanis edhose tis
 the-nom Yanis-nom gave-3sg the-gen
 Marias *to vivlio tu Chekhov*
 Maria-gen the-acc book-acc the-gen Chekhov-gen
 ke o Vasilis tis edhose
 and the-nom Vasilis cl-3sg-f-gen gave-3sg
 to idhio
 the-acc same-n-acc
 ‘Yanis gave Maria Chekhov’s book and Vasilis gave her
 the same’

(161b) O Yanis edhose tis
 the-nom Yanis-nom gave-3sg the-gen
 Marias to vivlio tu Chekhov
 Maria-gen the-acc book-acc the-gen Chekhov-gen
 ke o Vasilis *to idhio*
 and the-nom Vasilis the-acc same-n-acc
 ‘Yanis gave Maria Chekhov’s book and Vasilis did the same
 (i.e. gave Maria Chekhov’s book)’

Note here that no (finite) verb is needed in the Greek example (161b). It is, of course, possible to also use the phrase *ekane to idhio* ‘did the same’, where the Greek verb *ekane* is the equivalent of the English “did”.

The two arguments of the verb cannot be replaced, as illustrated below:

(161c)	??*O	Yanis	edhose	<i>tis</i>
	the-nom	Yanis-nom	gave-3sg	the-gen
	<i>Marias</i>	<i>to vivlio</i>	<i>tu</i>	<i>Chekhov</i>
	Maria-gen	the-acc book-acc	the-gen	Chekhov-gen
	ke o	Vasilis	edhose	<i>to</i>
	and the-nom	Vasilis-nom	gave-3sg	the-acc
	<i>idhio</i>			
	same-n-acc			
		‘Yanis gave Maria Chekhov’s book and Vasilis gave the same		
		(i.e. Maria Chekhov’s book)’ ^{lxxii}		

Some speakers find (161c) marginally acceptable given the right context. All speakers, though, agree it is worse than (161a) and (161b).

More precisely, in (161a), *to idhio* ‘the same’ replaces the Direct Object *to vivlio tu Chekhov* ‘Chekhov’s book’, which is a constituent. In (161b), *to idhio* ‘the same’ replaces the VP *edhose tis Marias to vivlio tu Chekhov* ‘gave Maria Chekhov’s book’, which is also a constituent. The option of the verb being gapped is excluded, since this would mean that only the Direct Object and the Indirect Object are replaced by the pronoun. In (161c) *to idhio* ‘the same’ cannot replace both the IO *tis Marias* ‘the Maria’ and the DO and *to vivlio tu Chekhov* ‘Chekhov’s book’, since they do not form a constituent.

As further evidence that the element *to idhio* ‘the same’ replaces constituents note here that it may also substitute for a full pronoun that appears together with a DP. The pronoun-DP complex is preceded by a preposition:

(162)	Aresi	[s'	[afton	to	mathiti]]
	like-3sg	to	him-acc	the-acc	student-acc
	o	sinajonismos,	ala	dhen	aresi
	the-nom	competition-nom	but	neg	like-3sg
	[s[<i>ton</i>	<i>idhio</i>]]	i	apotihia	
	to-the-acc	same-acc	the-nom	failure-nom	
	'This student like the competition, but the same doesn't like the failure'				

To sum up, we have seen that the pronominal element *to idhio* 'the same' always replaces a constituent. In addition, we have seen that this element replaces the clitic-double complex, in environments where the clitic is obligatorily selected together with the DP. Therefore, we may conclude that the clitic and its double form a constituent (also in cases where the clitic and its double are discontinuous; cf. 160a).

4 Conclusion

Object clitics are argumental, even in clitic doubling constructions. This is consistent with the standard view (cf. Kayne 1975) that object clitics are arguments of the verb and contributes towards a uniform analysis of object clitics in all their manifestations. I take argumental elements to be assigned a theta-role and check case. Object clitics are thus contrasted to the verbal morphology that absorbs case (i.e. *se* morphology in Romance or *te*-morphology in Greek). Their distinct function with respect to theta-assignment and case explains their different syntactic behaviour.

Lastly, the present analysis also contributes to the Theta Criterion issue (Chomsky 1981):

(163) Theta Criterion

1. Each argument is assigned one and only one theta role.
2. Each theta role is assigned to one and only one argument.

Object clitics and *te*-morphology seem to violate the Theta Criterion in the following ways: in (164a) -reflexive verb-, one argument, namely *o Yanis* ‘Yanis’, looks as if it is assigned two theta-roles, one external and one internal. If this were true, it would violate the first part of the Theta-Criterion (Chomsky 1981): “each argument is assigned one and only one theta role”.

In (164b) -object clitic-, two nominal elements, namely *ton* ‘him and *to Yani* ‘Yani’, appear to be assigned the same theta-role. This would violate the second part of the Theta criterion: “each theta role is assigned to one and only one argument”.

(164a) O Yanis *plene*
 the-nom Yanis-nom wash-*te*-3sg
 ‘Yanis washes (himself)’

(164b) Ton *idha* *to* Yani
 cl-3sg-m-acc saw-1sg the-acc Yani-acc
 ‘I saw Yani’

Given the discussion so far, we are able to solve these problems:

In (164a) the *te*-morphology absorbs case and the thematic arity operation of reflexivization takes care of the internal theta-role and identifies it with its external co-argument (Reinhart & Siloni 2003a, 2003b). Reflexivization is an operation on theta-clusters and not on arguments (like syntactic binding), which results into one complex theta-role. A single theta-role is assigned to a single argument, but the nature of this theta-role is semantically complex.

In (164b), the object clitic forms a syntactic unit with the DP-double (i.e. an object DP). The clitic-DP complex is thus assigned a theta-role.

General Conclusions

I have discussed a variety of issues with the aim to shed light on the complicated phenomenon of argument realization.

The most important question regards the universal nature of argument alternations. My first task has been to identify a pattern in one language, namely Greek: the change in the semantic reading of a given verb may affect only one type of argument, namely the one that would otherwise appear in the accusative case. In more technical terms, thematic arity operations (as these were presented in chapter 1) in Greek are always characterized by elimination of the accusative feature of the verb. I have argued that this is captured under Reinhart's (1997, 2000, 2003) theory of the Theta System and Reinhart & Siloni's (2003a, 2003b) analysis of the verbal morphology as having a case-absorbing capacity. (See also, for example, Cinque 1988 for nominative absorption in impersonals and Chomsky 1981 for accusative absorption in passives).

A comparison of Greek to French and Italian has revealed that Greek uses a suffix when the valency of the verb is reduced, while French and Italian use a clitic (i.e. morphology that is part of the inflectional system rather than the verb itself). As I have argued in detail, it is exactly this morphological factor that determines the uniform absorption of the accusative in all instances of argument alternations in Greek. A clitic on the inflectional system, on the other hand, may have a larger variety of case-absorbing domains (my hypothesis was introduced in chapter 1 and was further elaborated in chapter 3).

I have shown this to be true: clitic languages in principle (cf. Italian) allow for nominative to be absorbed in impersonal constructions (this is only possible if the language has also a number of other properties that were discussed in chapter 1). I argued that suffix languages, like Greek, lack this type of impersonals.

The question could be raised whether the comparison between Greek, on the one hand, and Italian and French, on the other, is valid? That is, do we have any indication that the distinction between suffix and clitic case-absorbing morphology makes sense? Chapter 2 has shown exactly this. More precisely, it revealed a number of similarities between Greek, French and Italian reflexivization. These similarities found a uniform explanation under Reinhart and Sioni's (2003a, 2003b) hypothesis: all three languages have the same setting with regard to the Lexicon/Syntax

parameter that Reinhart & Siloni propose. All three languages thus share the characteristics of syntax languages (except for those characteristics that depend on the use of a clitic, as I argued).

The syntactic setting of Greek was mainly illustrated on the basis of productivity. Reflexivization in Greek is more productive than usually assumed, as was shown for example by the choice of adjuncts. Moreover, we saw that Greek allows for reflexivization into ECM constructions, although marginally. In addition, I pointed out that Greek does not have reflexive nominals of the English type and Greek displays ambiguities when reflexive verbs are used with plural subjects. However, we saw that Greek rules out reflexivization of the benefactor. This was attributed, in chapter 3, to the use of a suffix.

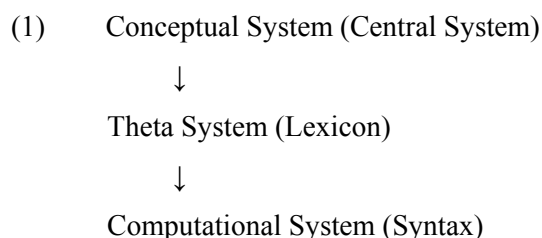
Moreover, in chapter 3, I briefly presented Russian and European Portuguese that are possibly suffix languages and seem to pattern with Greek in all instances of argument alternations. This was a first indication that the present generalization is not a specific property of Greek, but might hold for a wider class of languages. Of course, further research with a typological perspective would be required to draw a firm conclusion.

Lastly, chapter 4 established a clear distinction between argumental and non-argumental morphology. Argumental morphology (i.e. object clitics) is always assigned a theta-role and checks case. Non-argumental morphology (i.e. *te* suffix or *se* clitic), on the other hand, is not assigned any theta-role (nor does it reduce any theta-role, as very often argued – cf. for example Chomsky 1981, Baker, Johnson & Roberts 1989), but only absorbs a case of the verb. The remaining theta-role is taken care of by an arity operation, along the lines of Reinhart (1997, 2000, 2003). The distinction is thus mostly case-related: case checking differs from case-absorption, as illustrated by the “small clause” Greek facts (examples 137, 139). Specifically, case absorption means elimination of the accusative (in passives and reflexives the adjectival predicate of the small clause appears in nominative), whereas case checking means that case is present in the Syntax, as was illustrated by the accusative case on the adjectival predicate (when an object clitic is used). Impersonals, reflexives, reciprocals (and passives) were thus argued to result from the use of non-argumental morphology *-se* in Romance, *te* in Greek- which absorbs case and prevents an argument from being realized in the Syntax. Argumental morphology, on the other hand, i.e. object clitics, participates in checking theta-role and case, even in clitic doubling constructions, as shown in the last part of chapter 4.

Summary

Main issue of my thesis is to discuss the morpho-syntactic factors that affect the realization of arguments of the verb. In particular, I concentrate on theta-assignment and case.

Following Reinhart (1997, 2000, 2003), I assume the Theta System, the interface of the System of Concepts and the Computational System (Syntax) as illustrated in (1) –repeated here from chapter 1, section 2.1:



The Theta System determines the theta-specification of a given lexicon verb-entry and provides instructions for the merging of arguments. The latter become relevant at the Computational System (Syntax). Moreover, the Theta System consists of a number of thematic arity operations, which changes the semantic reading of a given verb and usually also affects the theta-specification of the verb. In other words, thematic arity operations affect the number of theta-roles (theta-clusters) that the verb has.

Reinhart and Siloni (2003a, 2003b) argue that thematic arity operations may also apply in the Computational System (Syntax). Specifically, they suggest the Lexicon-Syntax parameter (repeated here from chapter 2, section 1):

(2) *The Lex-Syn Parameter*

UG allows thematic arity operations to apply in the Lexicon or in Syntax

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Languages are thus divided into two groups: languages that display the lexicon setting of the parameter (English, Hebrew, Dutch) and languages that display the syntax setting of the parameter (French, Italian, German).

This thesis is more about what happens at the Computational System (Syntax). At this stage of the derivation, the verb realizes its arguments within structure and, if the language displays the syntax setting of the Lex-Syn parameter, thematic arity operations apply. My thesis is structured as follows:

In chapter 1, I argue for an analysis of impersonal constructions as the result of an arity operation affecting (nominative) case absorption (following Cinque 1988). I assume along the lines of Chomsky (1995) that nominative is a case on Tense and thus not specified in the lexicon entry of the verb. Therefore, if nominative is eliminated, it has to be eliminated in the Syntax. An immediate consequence is that only languages of the syntax setting display impersonals of this type. This is borne out, as also argued in Reinhart and Siloni (2003b). Italian is a language of the syntax type and has impersonals where nominative is absorbed (section 3.2). Greek is different; it only has impersonal passives and middles, constructions where the accusative is absorbed as explained in section 3.1. If Greek would be a language of the lexicon setting, this would explain the lack of impersonals of the Italian type. However, in section 3.3, I show, based on a discussion of Hebrew, French, Russian and Rumanian, that such a conclusion is not necessary.

In chapter 2, I discuss the behaviour of Greek with respect to the Lexicon-Syntax parameter (on the basis of reflexivization). In particular, I investigate how Greek behaves in relation to the phenomena that Reinhart and Siloni (2003a, 2003b) group together as characteristics of the syntax setting of the parameter. Although Greek seems to have a mixed behaviour, I conclude that Greek is a language of the syntax type. This is because I believe that there is sufficient positive evidence for the child to select the syntax setting of the parameter. Specifically, reflexivization in Greek is more productive than in a language like English, as shown in section 2.3. In addition, Greek allows reflexivization into Exceptional Case Marking predicates (section 4.1), reflexive verbs with plural subjects are ambiguous with reciprocals (section 4.2) and, lastly, it does not have reflexive nominals (section 4.3). However, it must be noted that Greek does not allow reflexivization of the benefactor, another characteristic of syntax languages suggested by Reinhart and Siloni.

In chapter 3, I argue that the lack of reflexivization of the benefactor in Greek is due to the use of a suffix that obligatorily absorbs only the accusative case feature of the verb. A clitic, on the other hand, (i.e. a morphological element in the inflectional system and not on the verb itself) may have a wider case-absorbing capacity, namely nominative, dative or accusative. I thus link the lack of benefactor reflexivization with the lack of impersonals: both are attributed to the use of a suffix in Greek versus a clitic in Italian. To sum up, I show that Greek has the syntax setting of the Lex-Syn parameter and I suggest that there is another factor that determines the variety of case configurations in which all instances of argument alternations may appear: the use of a suffix on the verb. This hypothesis makes certain predictions. In particular, reciprocalization of the benefactor is expected not to appear in Greek (given Siloni's 2001 hypothesis, according to which reflexivization and reciprocalization involve the same thematic arity operation). This is borne out, as illustrated in section 3.1. A further prediction concerns the lack of reflexivization of the possessor: the lack of reflexivization of the possessor in Greek is possibly also linked to the use of a suffix. The prediction is borne out, as shown in section 3.2. Next, I included a brief discussion on passives and, more precisely, on passives of double accusative verbs (section 4.1) and on deponents (section 4.2). I explained why these constructions allow for a suffix to appear together with a nominal in accusative case. Lastly, in section 5, I show that the generalization, that a suffix obligatorily absorbs only the accusative feature of the verb, holds also in other languages, like Russian (section 5.1) and European Portuguese (section 5.2). These two languages use a suffix and display a behaviour that is similar to Greek.

The first part of chapter 4 (section 2) is an explanation of what case absorption actually means; or at least of the way that I use this term here. Specifically, I distinguish elements that function as case-absorbers from elements that check a case (and also theta-features) of the verb. The different syntactic behaviour of reflexive and object clitics/affixes is thus attributed to the different syntactic function that they have: reflexive clitics/affixes absorb case, whereas object clitics/affixes check case (and theta-features). In the second part of the chapter (section 3), I argue that object clitics participate in case and theta checking, also in clitic doubling constructions. Clitic doubling is considered a problem for any theory that views object clitics as pronominal elements that bear a theta-role of the verb. I provide a possible way to analyse object clitics consistently as argumental elements in all their realizations.

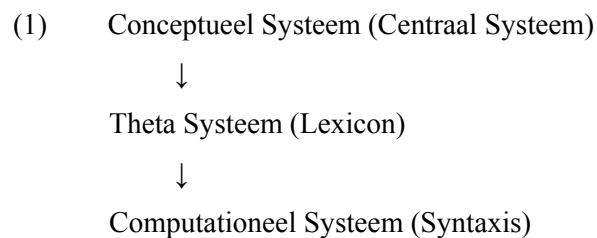
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Samenvatting in het Nederlands

(vertaald door Mario van de Visser)

In deze dissertatie bespreek ik de morfosyntactische factoren die van invloed zijn op de realisatie van verbale argumenten. Ik richt mij daarbij in het bijzonder op de toekenning van theta-rollen en naamval.

In navolging van Reinhart (1997, 2000, 2003) veronderstel ik het Theta Systeem, de interface tussen het Conceptueel Systeem en het Computationele Systeem (Syntaxis), zoals geïllustreerd in (1) – afkomstig uit hoofdstuk 1, paragraaf 2.1:



Het Theta-systeem bepaalt de theta-specificatie van een gegeven verbale ingang uit het lexicon en geeft instructies met betrekking tot het toevoegen van argumenten. Deze instructies worden relevant in het Computationele Systeem (Syntaxis). Bovendien bestaat het Theta Systeem uit een aantal thematische ariteitsoperaties die de semantische lezing van een gegeven werkwoord veranderen en gewoonlijk ook de theta-specificatie van het werkwoord beïnvloeden. Met andere woorden: thematische ariteitsoperaties beïnvloeden het aantal theta-rollen dat een werkwoord uitdeelt.

Volgens Reinhart en Siloni (2003a, 2003b) kunnen thematische ariteitsoperaties ook van toepassing zijn in het Computationele Systeem (Syntaxis). Zij introduceren de volgende Lexicon-Syntaxis parameter (afkomstig uit hoofdstuk 2, paragraaf 1):

(2) *De Lex-Syn Parameter*

UG staat toe dat thematische ariteitsoperaties worden toegepast in het Lexicon of in de Syntaxis

Hierdoor kunnen talen in twee groepen worden ingedeeld, te weten: i. Talen met de Lexicon-instelling van de parameter (Engels, Hebreeuws, Nederlands) en ii. Talen met de Syntaxis-instelling van de parameter (Frans, Italiaans, Duits).

Dit proefschrift gaat voornamelijk over wat er gebeurt in het Computationale Systeem (Syntaxis). In dit stadium van de derivatie realiseert het werkwoord zijn argumenten op structurele wijze en, als de taal de syntaxis-instelling heeft op de Lex-Syn parameter, zijn thematische ariteitsoperaties van toepassing. Mijn dissertatie is als volgt opgebouwd:

In hoofdstuk 1 pleit ik ervoor om onpersoonlijke constructies te analyseren als gevolg van een ariteitsoperatie die (nominatieve) naamval absorbeert (in navolging van Cinque 1988). Met Chomsky (1995) neem ik aan dat de nominatief op Tense wordt gerealiseerd en daardoor niet gespecificeerd is in de lexicale ingang van het werkwoord. Wanneer de nominatief wordt geëlimineerd, dan moet dat dus in de Syntaxis plaatsvinden. Hieruit volgt onmiddellijk dat alleen talen met de syntaxis-instelling dit soort onpersoonlijke constructies kunnen vormen. Dit blijkt juist te zijn, zoals ook Reinhart en Siloni (2003b) beargumenteren. Het Italiaans is een taal van het syntaxis-type en heeft onpersoonlijke constructies waarin de nominatief wordt geabsorbeerd (paragraaf 3.2). Zo niet in het Grieks: er zijn alleen onpersoonlijke passieven en mediale constructies waarin de accusatieve naamval typisch wordt geabsorbeerd, zoals uitgelegd in paragraaf 3.1. Als het Grieks de lexicon-instelling zou hebben, zou dat het ontbreken van de Italiaanse onpersoonlijke constructies verklaren. In paragraaf 3.3 laat ik op basis van talen zoals het Hebreeuws, Frans, Russisch en Roemeens echter zien dat deze conclusie niet onvermijdelijk is.

In hoofdstuk 2 bespreek ik het gedrag van het Grieks met betrekking tot de Lexicon-Syntaxis parameter (op basis van reflexivisatie). In het bijzonder onderzoek ik hoe het Grieks zich verhoudt tot de verschijnselen die Reinhart en Siloni (2003a, 2003b) gezamenlijk aanduiden als kenmerkend voor de syntaxis-instelling van de parameter. Hoewel het Grieks gemengd gedrag lijkt te vertonen, concludeer ik dat het een taal is van het syntaxis-type. Ik baseer mij hierbij op de gedachte dat er

voldoende positieve evidentie is voor het selecteren van de syntaxis-instelling wanneer een kind de taal verwerft. In het bijzonder geldt dat reflexivisatie in het Grieks productiever is dan in een taal als het Engels, zoals geïllustreerd in paragraaf 2.3. Ook staat het Grieks reflexivisatie toe in ECM-predikaten (paragraaf 4.1), kunnen reflexieve werkwoorden met meervoudige subjecten een extra reciproke lezing krijgen (paragraaf 4.2) en mist het Grieks reflexieve nomina (paragraaf 4.3). Echter, belanghebbende voorwerpen kunnen in het Grieks niet worden gereflexiviseerd, wat volgens Reinhart en Siloni wel een kenmerk is van syntaxis-talen.

In hoofdstuk 3 beargumenteer ik dat het onvermogen van het Grieks om belanghebbende voorwerpen te reflexiviseren te wijten is aan een suffix dat verplicht alleen het accusatieve naamvalskenmerk van het werkwoord absorbeert. Het absorptievermogen van een clitic daarentegen (dat wil zeggen van een morfologisch element in het inflectionele systeem en niet op het werkwoord zelf) is breder en betreft nominatief, datief of accusatief. Zo koppel ik het gebrek aan reflexivisatie van belanghebbende voorwerpen aan onpersoonlijke constructies: beide worden toegeschreven aan het gebruik van een suffix in het Grieks versus een clitic in het Italiaans. Samengevat toon ik aan dat het Grieks de syntaxis-instelling heeft op de Lex-Syn parameter en suggereer ik dat een andere factor verantwoordelijk is voor de verschillende naamvalsconfiguraties waarin alle voorkomende alternanties van argumenten verschijnen: het gebruik van een suffix op het werkwoord. Deze hypothese leidt tot bepaalde voorspellingen. In het bijzonder kan worden verwacht dat reciprokalisatie van een belanghebbend voorwerp niet voorkomt in het Grieks (gegeven de hypothese in Siloni (2001) volgens welke reflexivisatie en reciprokalisatie eenzelfde thematische ariteitsoperatie betreffen). Dit wordt bevestigd, zoals geïllustreerd in paragraaf 3.1. Verder wordt voorspeld dat reflexivisatie van possessoren niet mogelijk is: ook dit wordt mogelijk verklaard door het gebruik van een suffix. Deze voorspelling komt eveneens uit, zoals wordt geïllustreerd in 3.2. Dan volgt een korte bespreking van passieven, en, meer specifiek, van passieven met dubbele accusatief-werkwoorden (paragraaf 4.1) en van deponenten (paragraaf 4.2). Ik tracht hier te verklaren waarom een suffix in deze constructies samengaat met een nomen in de accusatieve naamval. In paragraaf 5 tenslotte toon ik aan dat de generalizatie dat een suffix verplicht alleen het accusatieve naamvalskenmerk van het werkwoord absorbeert ook in andere talen van toepassing is, zoals het Russisch (paragraaf 5.1) en het Europees Portugees (paragraaf 5.2). Deze talen gebruiken een suffix en hun gedrag lijkt op dat van het Grieks.

172 Samenvatting

Het eerste gedeelte van hoofdstuk 4 (paragraaf 2) is een verklaring van wat naamvalsabsorptie eigenlijk betekent; of ten minste van de manier waarop ik deze term hier gebruik. Ik maak daarbij onderscheid tussen elementen die fungeren als naamvalsabsorbeerder en elementen die een naamvalskenmerk (alsmede theta-kenmerken) van het werkwoord checken. Het verschillende gedrag van reflexieve- en objekt-clitics/-affixen wordt zodoende toegeschreven aan de verschillende syntactische functies die zij hebben: reflexieve clitics/affixen absorberen naamval, terwijl objekt-clitics/-affixen naamval (en theta-kenmerken) checken. In het tweede deel van het hoofdstuk (paragraaf 3) beargumenteer ik dat objekt-clitics ook een rol spelen bij het checken van naamvals- en theta-kenmerken in clitic-dubbelingsconstructies. Clitic-dubbeling wordt vaak als probleem gezien voor elke theorie die objekt-clitics beschouwt als pronominale argumenten die een theta-rol van het werkwoord dragen. Ik stel een mogelijkheid voor om objekt-clitics in al hun realisaties consequent als argumentele elementen te analyseren.

Notes

ⁱ Abbreviations in the glosses are used throughout the thesis as follows:

nom for nominative case
acc for accusative case
gen for genitive case
sg for singular number
pl for plural number
cl for clitic
m for masculine gender
f for feminine gender

Case, number, gender, tense and aspect specifications are used only when these are morphologically distinguishable in the language.

The label *-te* is used for what is traditionally called ‘medio-passive’ suffix in Greek. A more extensive discussion of the suffix *-te* is included in chapter 2.

ⁱⁱ Verbs or phrases like *vrehi* ‘it is raining rain’, *prepi* ‘must’, *ine efkolo* ‘it is easy’ are called ‘impersonals’ or ‘3rd personals’ (i.e. the subject is obligatorily in the 3rd person) – cf. the grammar book by Clairis & Babiniotis (1999). The term ‘impersonals’ is used here in a very different way: it captures constructions with arbitrary subject interpretation.

ⁱⁱⁱ The determiner *ton* ‘the-acc’ / *o* ‘the-nom’ is obligatorily present in (6) but not in (7c). The possibility of using the determiner in both examples makes the comparison valid. Further research is required to determine what kind of relation exists between the Greek determiner and arbitrary interpretation, if any at all.

^{iv} My first attempt to analyse impersonals is discussed in Papangeli (2003).

^v For suggestions regarding the EPP checking in Greek (and other languages) see Philippaki-Warbuton (1987), Alexiadou & Anagnostopoulou (1998).

^{vi} French has examples like:

- (1a) Il se mange des spaghettis
 he se eat-3sg the spaghettis
 ‘He is eating spaghettis’

It could be that *se* absorbs dative in (1). This type of dative is possibly absorbed also in the following Spanish example:

- (1b) Ella se come la sopa
 she se eat-3sg the soup
 ‘She is eating the soup’

Such examples are not attested in Greek or Russian (suffix-languages, as will be elaborated in chapter 3).

^{vii} Russian also seems to have an empty expletive (cf. Franks 1995). This is shown in (2).

- (2) Možet byť čo ona ujedet
 may-3sg be-infl that she leave-perf-3sg
 ‘It may be that she’ll leave’

^{viii} The Russian data are due to Olga Borik, Galina Gordishevsky and Ora Matushansky, unless cited from the literature.

^{ix} Note here that Polish, a language with very similar properties to Russian, displays a very different behaviour. Specifically, impersonals are attested in Polish with the clitic *się*. The contrast between Russian and Polish is attributed to the Polish *się* being a clitic versus the Russian *sja* being a suffix. Further research would be required to reach firm conclusions on this issue.

^x Note here that the clitic *se* is attested with a raising verb, as illustrated below:

- (3a) *Se* pare ca Ion este fericit
 se seem-3sg that Ion is happy
 ‘Ion seems to be happy’

It is generally assumed that raising verbs don't assign accusative case. In other words, raising verbs do not have an accusative feature that needs to be checked by Logical Form (LF). So, the presence of the clitic cannot be associated with the accusative case (feature).

Moreover, the Rumanian clitic *se* may appear with a raising verb and another (pronominal) clitic, when the latter is in dative case:

- (3b) I *se* *pare* *ca* Ion *este* *fericit*
 to-him *se* seem-3sg that Ion is happy
 'It seems to him that Ion is happy'

The presence of the clitic *se* with the raising verb *pare* 'seems' above could perhaps simply be taken as an idiosyncratic property of this verb (Dobrovie-Sorin p.c.); i.e. whether the clitic *se* appears with all raising verbs or not would be an issue in this respect. The clitic *se* cannot be associated with the accusative case in (3a) and (3b), given that raising verbs do not assign accusative. Moreover, the clitic *se* cannot be associated with the dative case in (3b), given that it appears together with the pronominal dative clitic *i* 'to-him'. It would be hard to assume that we have two dative cases in one derivation. The only possible option is that *se* absorbs nominative. What remains unexplained is the contrast between the Rumanian data here and the Italian data in (35) in the main text. The Rumanian clitic is compatible with raising verbs, while the Italian clitic is not.

^{xi} The only exception would be nominative in Icelandic infinitival constructions (Marantz p.c.). In Icelandic, nominative appears as the subject of infinitives, an unexpected phenomenon. However, this could be a language-specific idiosyncrasy.

^{xii} An outline of the behaviour of Greek reflexive verbs can be found in Papangeli (2003a).

^{xiii} Everaert (1998) discusses whether Binding Theory relies on principles inside the Computational System (Syntax) or whether it refers to principles that belong to the Conceptual-Intentional System and he opts for the former.

^{xiv} Fillmore (1968) argues that a two-place predicate is reflexive if, whenever the same object is mentioned in both positions, the predicate necessarily holds (a predicate is a term, which identifies some property of an object or some relation between two or more objects). According to Fillmore, The English verb *equal* is reflexive, because everything equals itself. The verb *differ-from* is anti-reflexive, because *a* cannot differ from *a*, while the verb *love* is mesoreflexive, because it is possible, but not restrictive, that a person loves himself.

Fillmore argues for a Lexicon that is the list of minimally redundant descriptions of the syntactic, semantic and phonological properties of lexical items, accompanied by a system of redundancy rules, the latter viewed as a set of instructions on how to interpret the lexical entries. He points out the necessity to specify the number and the nature of the roles, what he calls the ‘cases’ that are conceptually inherent to the basic sense of the verb. According to Fillmore, these roles can be identified by terms like Agent, Instrument, Object Place, etc.

^{xv} There is a distinction in the literature between proper reflexive verbs and “pseudo-reflexive” verbs. The distinction is based on syntactic grounds (cf. Channon 1974: 72).

When two identical noun phrases are dominated by different argument nodes, and, in particular, when the nodes are an Agentive and an Objective, the verb is a proper reflexive verb.

When two identical noun phrases are dominated by identical argument nodes, the verb is a “pseudo-reflexive” verb – i.e., it will have the same form as a reflexive verb, but will not have a reflexive meaning.

In the case of a proper reflexive verb, one argument is performing an act upon another, and the two arguments are co-referential. That is, an agent is performing an act upon itself. In the case of a “pseudo-reflexive” verb, nothing is performing an act upon itself.

^{xvi} The diatheses can also be expressed with analytic expressions (4a) and (4b) or with compounds (4c) and (4d) (Setatos 1997):

(4a)	Misun	o	enas	
	hate-3pl	the-nom	one-nom	
	ton	alon		(middle diathesis)
	the-nom	other-acc		
	‘They hate each other’			

- (4b) Misun i men
 hate-3pl the-nom ones-nom
 tus dhe
 the-acc others-acc (middle diathesis)
 ‘They hate each other’
- (4c) Alilo-misiunde (middle diathesis)
 each-other-hate-te-3pl
 ‘They hate each other’
- (4d) Afto-katastrefome (middle diathesis)
 self-destroy-te-1sg
 ‘I destroy myself’

^{xvii} The term ‘middle’ is used here for constructions with a theme structural subject and arbitrary interpretation of the agent (cf. Sioupi 1998). For example:

- (5) To krasi pinete efharista
 the-nom wine-nom drinks-te-3sg pleasantly
 ‘The wine drinks with pleasure’

^{xviii} The following example is reported by Setatos (1997: 206) as a reflexive construction without the suffix *-te*:

- (6) Jlitono = jlitono ton eafto mou
 save-1sg save-1ag the-acc self-acc mine-gen
 ‘I save = I save myself’

Tzartanos (1946:245) also reports that few reflexive verbs appear without the suffix *-te*, such as *jirizo* ‘to turn’. However, it is hard to tell whether such verbs are reflexives or unaccusatives.

Theofanopoulou (1981) also observes that the following verbs may have a reflexive reading, although they appear without the *te*-suffix: *ktizo ena spiti* ‘I build a house for myself or for someone else’, *ravo ena forema* ‘I sew a dress for myself or for someone else’. Due to the lack of any systematic pattern underlying these facts, I take such options to be attributed to semantic vagueness (note here that also in English ‘I cook pasta’ can mean that I cook pasta for myself or for someone else).

^{xix} The following example is reported by Setatos (1997: 206) as a passive construction without the suffix *-te*:

- (7) Trizi to patoma apo ta
 creak-3sg the-nom floor-nom by the-acc
 vimata
 footsteps-acc
 ‘The floor creaks by the footsteps’

^{xx} Note here that the term ‘impersonal passive’ appears in the Greek literature for constructions of the type:

- (8) Ipenthimizete oti apajorevete to
 remind-te-3sg that forbid-te-3sg the-nom
 kapnisma
 smoking-acc
 ‘It is reminded that smoking is forbidden’

Tzartanos (1945) suggests that example (8) is a fixed expression and that the embedded sentence is the subject of the verb. The term ‘impersonal passive’ and ‘impersonal’ is used in a very different way here. The first refers to passive constructions with arbitrary interpretation, while the second refers to constructions with arbitrary subject interpretation and absorption of nominative case – cf. chapter 1.

^{xxi} The following example is reported by Setatos (1997) as a reciprocal construction without the suffix *-te*:

- (9) Pou tha antamosoun;
 where will meet-3pl
 ‘Where are they meeting (with each other)?’

^{xxii} Unaccusative verbs are hard to define in traditional grammar. They are characterized as active verbs (Babiniotis-Kontos 1967) or as passive verbs (Tzartanos 1946).

^{xxiii} Rivero (1992) distinguishes between adverbs functioning as complements (directional/manner/aktionsart) and adverbs functioning as predicates or non-complements (time/aspect). Rivero argues that adverbs of the first class may incorporate into the verb by head movement - Baker (1988):

- (10a) I Maria tha to
 the-nom Maria-nom will it-acc
 anapodho-jirisi
 upside+down-turn-3sg
 ‘Mary will turn it upside down’

Adverbs of the second class are, according to Rivero, external to the VP and they cannot incorporate:

- (10b) *O Yanis tha akomi+milai
 the-nom Yanis-nom will still+speak-3sg
 ‘Yanis will still be speaking’

Non-argument adverbs may form a compound with the verb, which differs from incorporation.

^{xxiv} As further argument to her claim Rivero takes (11b) to be derived from (11a) through Noun Incorporation:

- (11a) I kinotita dhini
 the-nom community-nom give-3sg
 fajito stus ftohus
 food-acc to-the-acc poor-ac
 ‘The community gives food to the poor’
- (11b) I kinotita trofodhoti
 the-nom community-nom food+give-3sg
 tus ftohus
 the-acc poor-acc
 ‘The community gives food to the poor’

^{xxv} Manney (1995, 1999) argues for a number of semantic differences between examples (12a) and (12b):

- (12a) Kitaksa ton eafto mu ston
 looked-1sg the-acc self-acc cl-1sg-gen to-the-acc
 kathrefiti
 mirror-acc
 ‘I looked at myself in the mirror’

- (12b) *Kitahthika* *ston* *kathrefti*
 saw-te-1sg to-the-acc mirror-acc
 ‘I looked at myself in the mirror’

Manney refers to construction (i) as a noun phrase active reflexive, along the lines of Faltz (1977) and to construction (ii) as a verbal inflection middle reflexive. Manney argues that (i) has the following characteristics: the construction is emphatic, the subject is an agent and thus acts volitionally. In addition, there is some psychological distance between the agent subject and the ‘self’-object. In (ii) Manney suggests that three distinct readings are attested: on the first reading, no agency is implied. On the second reading, the subject is viewed as partly agentive (responsible for the action denoted by the verb). On the third reading, the subject is agentive. The agentive reading is not emphatic when the inflectional middle verb is used, but greater personal involvement is observed (than in the active construction).

^{xxvi} The adjunct *apo moni tus* ‘on their own’ may appear with the transitive form of the verb and the full anaphor. However, the adjunct seems to be semantically redundant:

- (13) ?I *anthropi* *plenun* *apo*
 the-nom men-nom wash-3pl by
moni *tus* *tus eaftus* *tus*
 own-nom their-gen the-gen selves-gen their-gen
 ‘Men wash themselves on their own’

^{xxvii} We also find examples of the type:

- (14a) I *Maria* *irthe* *me* *to*
 the-nom Maria-nom came-3sg with the-acc
aftokinito
 car-acc
 ‘Maria came on her own with the car / by car’

The phrase *me to aftokinito* ‘with the car / by car’ is not an instrument but a ‘manner’ phrase. Similarly, the PP *me mia dhiadhilosi* in (14b) is the cause and not the instrument:

- (14b) I kavernisi epese me mia
 the-nom government-nom fell-3sg with a-acc
 dhiadhilosi
 demonstration-acc
 ‘The government fell with a demonstration’

^{xxviii} Another test would be examples of control:

(15a) He shaved [without PRO cutting himself]

(15b) *He was shaved [without PRO cutting himself]

However, it is not clear whether Greek has instances of control (PRO): the embedded verbal form (i.e. the equivalent of the English ‘cutting’) always agrees with its subject.

^{xxix} Note however that verbs of the ‘love’-type (*ajapo* ‘love’, *miso* ‘hate’, *latrevo* ‘adore’) cannot usually reflexivize in Greek (or in some other languages like Serbo-Croatian). Only the passive reading is available when these verbs bear the suffix *-te*:

- (16) Latreflike ap’ olon ton kosmo
 adored-te-3sg by all-acc the-acc world-acc
 ‘He was adored by the whole world’

Note, though, that the verb *thavmazo* ‘admire’, which is of the same type, seems to have reflexive and reciprocal variants.

^{xxx} Technically, it has only two spell outs: [+c+m] and [+c-m], but the latter is interpretable as either a cause or an instrument (Reinhart 2003).

^{xxxi} The following example is acceptable in some contexts:

- (17) I vrohi epline
 the-nom rain-nom washed-3sg
 to aftokinito
 the-acc car-acc
 ‘The rain washed the car’

The point here is that the verb *pleno* ‘wash’ cannot take three types of subjects, whereas the verb *keo* ‘burn’ can take three types of subjects, as was illustrated earlier.

^{xxxiii} Zevgoli (2000) distinguishes between reflexive verbs formed in the Lexicon (intrinsic reflexive verbs) and reflexive verbs formed in the Syntax (extrinsic reflexive verbs). This division is based on Reinhart & Reuland (1993). A predicate is extrinsically reflexive if one of its arguments is a complex anaphor that denotes an identity relation between two arguments. In intrinsically reflexive predicates, the heads (verbs) are marked as such in the Lexicon. Reflexivization here is an operation on the verb’s theta-grid, absorbing one of its theta-roles. Languages vary in whether the absorbed role is realized in the overt Syntax (as in Dutch) or not (as in English).

^{xxxiii} For example:

Syntax:

(18a) *Ipostirizume* *o* *enas* *ton* *alo*
 support-1pl the-nom one-nom the-acc other-acc
 ‘We support each other’

(18b) *Vrizi* *o* *enas* *ton* *alo*
 swear-3sg the-nom one-nom the-acc other-acc
 ‘We swear at each other’

Lexicon:

(19a) **Filame* *o* *enas* *ton* *alo*
 kiss-1pl the-nom one-nom the-acc other-acc
 ‘We kiss each other’

(19b) **Ajapai* *o* *enas* *ton* *alo*
 love-3sg the-nom one-nom the-acc other-acc
 ‘We love each other’

^{xxxiv} For example:

Syntax:

(20a) *Aliloipostirizomaste*
 each-other-support-te-1pl
 ‘We support each other’

- (20b) *Alilovrizomaste*
 each-other-swear-te-1pl
 ‘We swear at each other’

Lexicon:

- (21a) **Alilofiliomaste*
 each-other-kiss-te-1pl
 ‘We kiss each other’

- (21b) **Aliloajapiomaste*
 each-other-love-te-1pl
 ‘We love each other’

^{xxxv} For example:

Syntax:

- (22a) *Ipostirizomaste*
 support-te-1pl
 ‘We support each other’ (reflexive)
 OR ‘We are being supported (by...)’ (passive)

- (22b) *Vrizomaste*
 each-other swear-te-1pl
 ‘We swear at each other’ (reflexive)
 OR ‘We are being swore at (by...)’ (passive)

Lexicon:

- (23a) *Filiomaste*
 kiss-te-1pl
 ONLY ‘We kiss each other’

- (23b) *Ajapiomaste*
 love-te-1pl
 ONLY ‘We love each other’

^{xxxvi} Note here the obscure picture of Greek with respect to the following verbs: *kitazo* ‘look’ has the reflexive variant *kitazome* ‘look-te’. For example:

- (24a) O Yani kitazete ston
 the-nom Yanis-nom look-te-3sg at-the-acc
 kathrefti
 mirror
 ‘Yanis looks himself at the mirror’

Reflexivization into ECM is arguably possible:

- (24b) O Yani kitazete na
 the-nom Yanis-nom look-te-3sg to / subj
 kani grimatses
 make-3sg grimaces-acc
 ‘Yanis looks at himself making grimaces’

The verb *akuo* ‘hear’, on the other hand, does not have a reflexive alternate *akujome* ‘hear-te’ can only mean ‘I am being heard’ and not ‘I hear myself’. Reflexivization into ECM is also ruled out:

- (24c) O Yanis akujete na
 the-nom Yanis-nom hear-te-3sg to /subj
 trajudhai
 sing-3sg
 ‘People listen to Yanis singing’
 ‘*Yanis listens to himself singing’

The contrast between these two verbs, namely the observation that *kitazo* ‘look’ has a reflexive alternate, while *akuo* ‘hear’ does not is problematic for the idea that Greek is a language of the syntax type. However, in section 2.3, I explain that a language has the syntax setting of the parameter as long as it displays enough evidence for the child to set the parameter.

Another explanation would be that Greek is in a transit stage, i.e. it is changing from syntax to lexicon setting of the parameter. Possibly such a process happened in Romance, namely the parameter switched from lexicon (Latin) to syntax (French, Italian). Portuguese would be a more unclear case (cf. a discussion of Portuguese in chapter 3).

^{xxxvii} Note here that examples like ‘John cooked pasta’ can have a reflexive reading ‘John cooked pasta for himself’ given the right context.

^{xxxviii} There are few exceptions (Theophanopoulou 1981):

- (25a) O Petros promitheve*te* (me) trofima
 the-nom Petros-nom provides-te-3sg with food-acc
 ‘Petros provides food to himself’
- (25b) O Petros promithevi trofima
 the-nom Petros-nom provides-3sg food-acc
 ston eafto tu
 to-the-acc self-acc his-gen
 ‘Petros provides food to himself’
- (25c) O Petros promithevi
 the-nom Petros-nom provides-3sg
 ton eafto tu (me) trofima
 the-acc self-acc his-gen with food-acc
 ‘Petros provides himself with food’

One could argue that the basic verbal entry is (25c). In (25a) and (25c) the preposition can be empty. According to Tsimpli (1989) the nominal phrase receives the accusative case inherently.

^{xxxix} Hulk & Cornips (2000) distinguish two types of languages: Romance, German and Heerlen Dutch use the reflexive marker to indicate aspectual differences, whereas Standard Dutch and English resort in other means.

^{xl} Grimshaw (1982) argues that in reflexive verbs, the external role is bound in the lexical entry.

^{xli} More precisely, Vassilaki (1989) takes the reflexive use of the suffix *-te* as the most dominant one, contrary to other approaches. According to Vassilaki, the function of the inflection (suffix) is to show the establishment of a reflexive predicative pattern in which only the second argument slot is filled. This leads to a non-active relation.

^{xlii} Zevgoli (2000) points out, along the lines of Tsimpli (1989), that the suffix *-te* checks the theta feature / role of the direct object but not the one of the indirect object. The *te*-suffix also checks the accusative case feature of *v*. Zevgoli observes that, if the suffix checked the theta-feature of the indirect object, a nominal phrase in accusative would enter the derivation. However, it would not be possible for the nominal phrase to check its accusative case given that light *v* would have the accusative

case features already checked and erased. Note here that Zevgoli does not provide any empirical evidence for this hypothesis.

In the case of all reflexive verbs, Zevgoli argues that the suffix is a lexical category, which is fully specified for nominal features and it recovers the missing phi-features via its fusion with the AgrS morpheme of the verb. Because it lacks an inherent specification for phi-features, the suffix is referentially defective and so it is interpreted as bound by a subject antecedent, giving rise to a reflexive interpretation. The *te*-suffix in passives, on the other hand, is functional, according to Zevgoli, and, therefore, it cannot be interpreted as an argument. In order to be assigned content it is associated with the nominal complement of an *apo*-phrase ('by-phrase').

^{xliii} Embick (2003) observes certain differences between reflexive, unaccusative and passive constructions, which would presumably explain the ambiguities. For example, he argues that reflexives (in Greek and Romance) are formed by cliticization of an anaphoric external argument to the v-head, satisfying the case feature of v. The object is then raised to a position from which it binds the anaphor and checks nominative case. Unaccusatives and reflexives thus differ: only reflexives are agentive because they have an external argument in the initial stages of the derivation.

^{xliv} Tsimpli (1989) observes that the subject of a reflexive verb can control the subject of a purposive clause in Greek. This is a characteristic behaviour of unergative verbs and not of unaccusative verbs:

- (26) I Maria htenistike ja na
 the-nom Maria-nom comb-te-3sg for subj
 vji ekso
 go-3sg out
 'Maria combed herself to go out'

^{xlv} Specifically, Tsimpli argues that, in Syntax, the *te*-suffix absorbs the external theta-role. Given the Visibility Hypothesis (Chomsky 1981), which requires categories, which are assigned a theta-role to also have case, the suffix *-te* receives the accusative case of the verb, due to V-movement to I. The object NP subsequently moves to a case position (Spec IP). Note here that Philippaki-Warburton (1985, 1990) has argued that there is no movement for case in Greek i.e. the suffix *-te* is not an

element in need of case. Philippaki suggests that the suffix *-te* absorbs the agent theta-role.

Tsimpli gives a similar analysis for some experiencer verbs (cf. Pesetsky's 1995 analysis, who assumes that the experiencer must also be internal for English) and for middles. In particular, she argues that these are derived by an internal argument that moves to the subject position.

Note here that according to Sioupi (1997, 1998), middles with the mediopassive suffix *-te* are derived in the Lexicon, by the presence of a generic operator in the lexical entry (GEN). Specifically, Sioupi suggests that the verb is always selected from the Lexicon with the suffix *-te* and it is the word order that gives rise to different readings. Middles, for example, occur in SV order.

^{xlvi} The reciprocal reading is also attested with the anaphor *o enas ton alo* 'each other', with an adverbial or with the prefix *alilo* 'each other' (Sinopoulou 2001):

(27a) Ta pedhia pirazun
 the-nom children-nom tease-3pl
 to ena to alo
 the-acc one-nom the-acc other-acc
 'The children tease each other'

(27b) O Nikos ke o
 the-nom Nikos-nom and the-nom
 Hristos *tsakothikan metaksi tus*
 Hristos-nom fought-te-3pl between them-gen
 'Nikos and Hristos fought with each other'

(27c) I sinadherlfi *aliloipostirizonde*
 the-nom colleagues-nom each-other-support-te-3pl
 'The colleagues support each other'

There are also few verbs that have a reciprocal reading without bearing the suffix *-te*, such as *malonume* 'we are fighting with each other', *miazume* 'we look like each other', *teriazume* 'we get along with each other', *horizume* 'we are splitting', *antallasume* 'we are exchanging' (Sinopoulou 2001). In addition, there are a few reciprocal verbs that do not have an active alternate, such as *sinenoumaste* 'we are reaching an understanding', *tsakonomaste* 'we are fighting' (Theofanopoulou 1981).

^{xlvii} Other constraints suggested by ter Meulen (2000):

Speaker constraint 2: Using words cost effort (the more complex they are, the more they cost).

Hearer constraint 2: Use default constraints when ambiguities arise.

Speaker constraint 3: Be consistent and coherent.

Hearer constraint 3: Avoid contradictions.

^{xlviii} Similar is the situation in French:

(28a) Jean et Marie écrivent des lettres
 Jean and Marie write-3pl some letters
 l'un à l'autre
 the-one to the-other
 'Jean and Marie write letters to each other'

(28b) Jean et Marie achètent des livres
 Jean and Marie buy-3pl some books
 l'un pour l'autre
 the-one for the-other
 Jean and Marie buy books for each other'

^{xlix} Reciprocalization of the possessor is also ruled out:

(29a) *O Yanis ke i Maria
 the-nom Yanis and the-nom Maria
 filithikan ta heria
 kissed-te-3pl the-acc hands-acc
 'Yanis and Maria kissed each other's hands'

(29b) *O Yanis ke i Maria
 the-nom Yanis and the-nom Maria
 plithikan ta podhia
 washed-te-3pl the-acc feet-acc
 'Yanis and Maria washed each other's feet'

Reciprocation of the possessor is possible, if an anaphor is used:

(30a) O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria filisan ta heria
 Maria-nom kissed-3pl the-acc hands-acc
 o enas tu alu
 the-nom one-nom the-gen other-gen
 ‘Yanis and Maria kissed each other’s hands’

(30b) O Yanis ke i
 the-nom Yanis-nom and the-nom
 Maria eplinan o enas
 Maria-nom washed-3pl the-nom one-nom
 ta podhia tu alu
 the-acc feet-acc the-gen other-gen
 ‘Yanis and Maria washed each other’s feet’

¹ Note that at least some instances of the benefactor can passivize in a language like English (for example “John was sent a letter by the police”), which possibly indicates that it is the argument of the verb.

ⁱⁱ The accusative case on adjuncts is a fact, although unexplained within current linguistic theories that assume that a main distinction between arguments and adjuncts is that the former but not the latter have case.

ⁱⁱⁱ The Greek possessive example below is taken by Tsimplici (1989) to support the claim that reflexives are intransitives:

(31a) *O Yanis plithike
 the-nom Yanis-nom washed-te-3sg
 to prosopo tu
 the-acc face-acc his-gen
 ‘Yanis washed his face’

Note that examples with a possessive pronoun together with a reflexive element on the verb are ruled out also in French:

(31b) *Jean s’ est lavé ses mains
 Jean se has washed his hands
 ‘Jean washed his hands’

Thus, reflexivization into inalienable possessive constructions is unavailable in both French and Greek, if a possessive pronoun appears as part of the object DP. This requires an independent explanation. A thought would be that both the operation of reflexivization and the use of a possessive pronoun aim to the same interpretive effect, namely to identify the possessor / benefactor with the subject. It is thus not necessary to make use of both means.

^{liii} Note here that Ancient Greek differs from Modern Greek: a DP in accusative may appear with a reflexive verb in inalienable possessive constructions:

- (32) *Luete* *tas* *hiras*
 wash-te-3sg the-acc hands-acc
 ‘He washes his hands’

However, Ancient Greek is a language that allows for adjuncts in (morphological) accusative. Therefore, the transitive alternate of (32) could be something like ‘he washes himself the hands’, where the two DPs are ‘himself’ and ‘the hands’ are in accusative and the DP ‘the hands’ modifies the object of the verb ‘himself’. We would thus opt here for an analysis of the DP *tas hiras* ‘the hands’ as an adjunct (and not an argument of the verb). This would perhaps explain why it is possible to say ‘Jean s’est lavé les mains’ but not ‘*Jean s’est lavé la voiture’. The DP ‘the car’ cannot modify the reduced object ‘himself’, because it is not a part of it. In section 4.2, we will discuss further the obscurity of the argument – adjunct distinction in a language like Greek (and in other languages). If there is an adjunct involved in inalienable possessive constructions, then Modern Greek lacks the equivalent of French (and Ancient Greek examples), because the adjunct appears as a PP.

^{liv} Note here that such constructions may also have a reflexive reading, as shown clearly by the example: *O Yanis kerastike ena poto* ‘Yanis treated himself a drink’. The DP *ena poto* ‘a drink’ appears in the accusative.

^{lv} There are few verbs like *kano* ‘do / make’, *treho* ‘run’ that only have an active voice.

^{lvi} The verb in (33a) is used instead of the unavailable passive reading of (33b) and the periphrastic expression in (33c) is used instead of the unavailable passive reading of (33d) (Babiniotis–Kontos 1967: 228):

- (33a) Hrisimipiithikan
use-te-3pl
'They were used'
- (33b) Metahiristikan
use-te-3pl
'They used / *They were used'
- (33c) Ejine anepitihis epekserjasia
did-3sg unsuccessful-nom processing-nom
'They were processed unsuccessfully / There was an unsuccessful
processing'
- (33d) Epekserjastikan
process-te-3pl
'They processed / *They were processed /
*There was a processing'

^{lvii} The Russian data in this section are due to Olga Borik and Galina Gordishevsky.

^{lviii} The Russian suffix *-sja* differs from the Greek suffix *-te* in that it does not change form depending on person, number, mood, aspect and tense.

^{lix} Channon (1974) analyzes Russian reflexive verbs by using two rules, the subject-copying rule and the noun-phrase reduction rule. Channon argues that, in proper reflexive verbs, the 'agentive' argument is fronted as the subject. The "objective" argument is reflexivized. In "pseudo-reflexive" verbs, on the other hand, i.e. verbal forms with passive reading, the "objective" argument is fronted and thus occupies the subject position. The suffix *-sja* is assumed to originate from a copy of the objective argument, by application of the subject-copying and noun-phrase reduction rules. In sum, Channon argues that all instances of reflexive verbs (i.e. proper reflexive verbs, passive "pseudo-reflexive" verbs and intransitive "pseudo-reflexive" verbs) follow from a unique analysis that is based on Fillmore (1968) and subsequent work.

^{lx} The European Portuguese data in this section are due to Victor Pinto and Hose Nuno Meira Santos.

^{lxi} Lastly, a prediction is made with respect to the interaction of two arity operations. Due to the need for further research on this issue in order to clearly explain the facts, I only include this here as a footnote.

In languages that use verbal morphology, the reflexive marker obligatorily absorbs the accusative only. Given that the operation of passivization also eliminates the accusative, we do not expect to have both *se*-reflexivization and passivization. Either the passive or the reflexive reading is possible but the two are not attested simultaneously (this has been discussed for Romance – cf. for example Rizzi 1986).

This is borne out in Greek:

- (34a) O Yanis tripiete
 the-nom Yanis-nom pinch-te-3sg
 ‘i. Yanis pinches himself’
 OR ‘ii. Yanis is being pinched’

Moreover, it is predicted that, in syntax languages, the operations of reflexivization and passivization can apply simultaneously if reflexivization targets the dative rather than the accusative argument: passivization existentially binds the external argument and eliminates the accusative. This is borne out in German:

- (34b) ?Ein Haus wurde *sich* gekauft
 a-nom house-nom was-3sg se bought
 ‘A house was bought for him (by him)’

The (?) is used to indicate that context is necessary for the example to be acceptable. The context is given as follows: “Johann and Mary got married. They got kids, a house was bought for themselves.” (The judgements are attributed to Patrick Brandt, Silke Hamann and Thomas Wolle). Note that German (like Italian and French) displays the characteristics of a syntax language, as argued by Reinhart & Sioni (2003a, 2003b). For example, reflexivization of the benefactor/goal is possible: *Hans schickte scheinen* ‘Hans sent himself a letter’.

German differs from Italian. In the latter, two arity operations are banned from applying simultaneously. This is illustrated in the following example (from Rizzi 1986):

- (34c) *Gianni *si* è stato affidato
 Gianni se has-3sg been entrusted
 ‘Gianni was entrusted to himself’

The example is acceptable if a full anaphor is used instead of the clitic *si*:

- (34d) Gianni è stato affidato à
 Gianni has-3sg been entrusted to
 se stesso
 himself
 ‘Gianni was entrusted to himself’

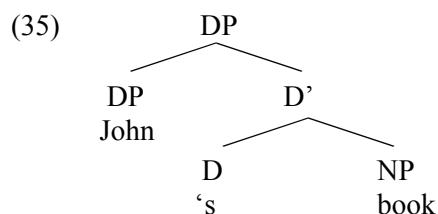
The difference between the German example and the Italian example is the following. The theta-clusters of the benefactor are identified with the theta clusters of an (implied – existentially bound) agent (but not with the theme *ein Haus* ‘a house’ that has undergone passivization). In the Italian example, however, the theta clusters of the benefactor are identified with the theta clusters of an (implied – existentially bound) agent. In this case, the theme argument moves to the subject position. In order to get the intended reading we would expect the moved DO argument to bind the IO argument. However, the clitic *si* not an argument and thus cannot be bound. A full anaphor, on the other hand, is an argument that is bound by the moved theme *Gianni*.

^{lxii} Incorporation could mean case-checking, i.e. by incorporation the clitic checks the accusative case.

^{lxiii} For suggestions on the movement of clitics and their hosts in Greek, see Philippaki (1999) and Terzi (1999).

^{lxiv} This idea is compatible with analyses that assume a DefP (Definiteness Phrase) merged on top of the DP in Greek. According to such analyses (Stavrou 1996, Tsimpli & Stavrakaki 1999) the full pronoun *aftos* ‘he’ is generated as a Def head when it functions as a demonstrative (cf. also Marinis 2001).

^{lxv} The double=specifier analysis (cf. 144a) resembles very much to Abney’s (1987) analysis of possessives:



There is, however, a crucial difference between clitic doubling and possessives: in possessive constructions, following Abney (1987), the possessor-possessee complex is assigned one theta-role (if it is an argument of the verb) and the possessor is assigned another theta-role DP-internally either from the D-head or from the N-head. This does not seem to hold for clitic doubling: the clitic-double complex is assigned one theta-role from the verb, but there does not seem to be any other operation of theta-role assignment DP-internally.

^{lxvi} In the same vein, it is predicted that the clitic always has the same categorial feature as its “double”. This is borne out in the Greek indirect objects. In particular, the IO is expressed either with a DP carrying genitive case or with a PP. However, it is only possible to double a reduced pronoun by an IO DP:

(36a) *Tu* *edhosa* *tu* *Yani*
 cl-3sg-gen gave-1sg the-gen Yani-gen
ta *lefta*
 the-acc money-acc
 ‘I gave Yani the money’

(36b) **To* *edhosa* *sto* *Yani*
 cl-3sg-gen gave-1sg to-the-acc Yani-acc
ta *lefta*
 the-acc money-acc
 ‘I gave Yani the money’

The presence of a P-head c-commanding the pronominal clitic (but not the verb) would prevent incorporation of the clitic to its host (due to the Head Movement Constraint).

A preposition may precede a full pronoun:

(36c) *Edhosa* *s'* *afton* *ta* *lefta*
 gave-1sg to him-acc the-acc money-acc
 ‘I gave him the money’

The presence of a P-head that c-commands the full pronoun is fine, because full pronouns stay in situ. That is, there is no incorporation of the pronoun into the verb and so there is no movement that the P-head would block.

lxvii Extraction from the DP-double of a clitic is ruled out in Italian and in Spanish:

(37a) *L'* abbiamo vista # *la*
 cl-3sg-f-acc have-1pl seen-f the
sorella di Maria
 sister of Maria
 'We have seen # the sister of Maria'

(37b) **Di Maria, l'* abbiamo vista *la*
 of Maria cl-3sg-f-acc have-1pl seen-f the
sorella
 sister
 'We have seen the sister of Maria (not of someone else)'

(37c) *La* vimos *a la hermana*
 cl-3sg-f-acc saw-1pl to the sister
de Juan
 of Juan
 'We saw Juan's sister'

(37d) **De Juan la* vimos *a*
 of Juan cl-3sg-f-acc saw-1pl to
la hermana
 the sister
 'Juan's we saw the sister'

Extraction is easier in the absence of a clitic: the PP is no longer a "double", but presumably the complement of the verb. The fact that extraction is possible here suggests that the preposition *a* does not project a real PP (PPs normally are strong islands and thus do not allow extraction). Note also that the preposition can be omitted (and, therefore, appears in brackets in the examples below):

(37e) *Vimos* (a) *la hermana* *de Juan*
 saw-1pl to the sister of Juan
 'We saw Juan's sister'

(37f) ?*De Juan vimos* (a) *la hermana*
 of Juan saw-1pl to the sister
 'Juan's we saw the sister'

^{lxviii} Coordination facts also seem to indicate that the clitic originates from the object position: extraction from one conjunct is banned as illustrated in (38):

- (38) *Ton idha ke ti Maria
 cl-sg-m-acc saw-1sg and the-acc Maria-acc
 ‘I saw him and Maria’

^{lxix} Holton, Mackridge & Philippaki-Warburton (1997) provide further examples where the pronoun *aftos* ‘he’ functions as a demonstrative.

^{lxx} Note here that the situation is different in other languages, like Italian: the only available option is that clitic and full pronouns are co-referential with a DP in apposition. Moreover, a demonstrative in Italian can only precede a NP (not a DP), unlike Greek:

- (39) Ho visto quell’ uomo
 have-1sg seen this man
 ‘I have seen this man’

^{lxxi} Some speakers find this marginally acceptable. All speakers, though, agree that (159b) is worse than (159a) and (159c).

^{lxxii} Note that the following example is acceptable:

- (40) O Yanis edhose tis
 the-nom Yanis-nom gave-3sg the-gen
Marias *to* *vivlio* *tu* *Chekhov*
 Maria-gen the-acc book-acc the-gen Chekhov-gen
 ke o Vasilis ekane to
 and the-nom Vasilis-nom did-3sg the-acc
idhio
 same-n-acc
 ‘Yanis gave Maria Chekhov’s book and Vasilis did the same’

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Curriculum Vitae

Dimitra Papangeli was born in Athens on the 9th of September 1974. She graduated (Apolytirion) from the French-Greek school of Athens (Lycée Franco-Hellénique) in 1992 and then entered the University of Athens, School of Philosophy, Faculty of Philology, where she completed her first degree (Ptychion) in 1997. After this, she went to University College London, where she obtained her masters degree (MA) in Theoretical Linguistics in 1999 and then began her research in Syntax at the same university. In autumn 2001 she joined the Utrecht Institute of Linguistics OTS as an International PhD student. The present thesis is the result of research she carried out the last years.