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LIST OF ABBREVIATIONS

ACC	Accusative
CCLD	Clitic Left Dislocation (see, e.g., Anagnostopoulou 1997)
CL	Clitic
DAT	Dative (Genitive Morphology)
Def	Definite (feature)
DO	Direct Object
DRT	Discourse Representation Theory (see, e.g. Kamp & Reyle 1993)
DS	Dynamic Syntax (see Kempson et al. 2001)
GB	Government and Binding Theory (see, e.g., Haegeman 1994)
F	Focus
G	Ground (see Valduvi 1992)
GEN	Genitive
HPSG	Head Driven Phrase Structure Grammar (see, e.g., Pollard & Sag 1994)
Indef	Indefinite (feature)
IO	Indirect Object
MG	Modern Greek
MP	Minimalist Program (see, e.g., Chomsky 1995)
OBL	Oblique
P&P	Principles and Parameters framework (see, e.g., Chomsky 1981)
Pl	Plural
RC	Relative Clause
RRC	Restrictive Relative Clauses
Neu	Neutral
NOM	Nominative
non-RRC	non restrictive relative clauses, appositives
Sg	Singular
WCO	Weak cross over

Abstract

In this paper I discuss the implications and consequences of approaching a "flexible word order" language like Modern Greek from a dynamic point of view. I address the claims made in other frameworks regarding the rigidity of the MG clause structure and how this evidence can be accommodated and adapted under the dynamic analysis. The conceptual and philosophical implications of this type approach are also briefly mentioned.

1. MODERN GREEK DESCRIPTIVE PRELIMINARIES

1.a. Word order and *pro-drop*

Modern Greek (MG, henceforth) is a *pro-drop* language with relatively flexible word order. Possible word order patterns are shown in (1)-(10) below. In all of them Subject-verb agreement, in terms of person and number, is observed and the Subject is marked with Nominative, the Direct Object mainly with Accusative and the Indirect Object mainly with Genitive.

(1).   Filise o Yianis ti Maria   VSO
        kissed-$_{3Sg}$ the-$_{Nom}$ John-$_{Nom}$ the-$_{Acc}$ Mary-$_{Acc}$
        John kissed Mary

(2).   O Yianis filise ti Maria   SVO
        The-$_{Nom}$ John-$_{Nom}$ kissed-$_{3Sg}$ the-$_{Acc}$ Mary-Acc
        John kissed Mary

(3).   O Yianis ti Maria filise   SOV
        The-Nom John-Nom the-Acc Mary-Acc kissed-3Sg
        John kissed Mary

(4).   ti Maria filise o Yianis   OVS
        the-Acc Mary-Acc kissed-3Sg the-Nom John-Nom
        John kissed Mary

(5).   ti Maria o Yianis filise   OSV
        the-Acc Mary-Acc the-Nom John-Nom kissed-3Sg
        John kissed Mary

When cliticization of arguments is taken into account, the same word order options appear but this time Object arguments can optionally accompany a clitic affixed on the verb. This clitic must be appropriately case-marked according to which argument it associates with:

(6).   ti-filise o Yianis ti Maria Cl_{ACC}^{1}-V S O
        her-$_{Cl-Acc}$ -kissed-$_{3Sg}$ the-$_{NOM}$ John-$_{Nom}$ the-$_{Acc}$ Mary-$_{Acc}$
        John kissed Mary

(7).   O Yianis ti-filise ti Maria   S Cl_{ACC}-V O
        The-$_{Nom}$ John-$_{Nom}$ her-$_{Cl-Acc}$-kissed-$_{3Sg}$ the-$_{Acc}$ Mary-$_{Acc}$

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[1] Cl indicates clitic pronoun

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John kissed Mary

(8).   O Yianis ti Maria ti-filise   S O Cl_{ACC}-V
The-$_{Nom}$ John-$_{Nom}$ the-$_{Acc}$ Mary-$_{Acc}$ kissed-$_{3Sg}$
John kissed Mary

(9).   ti Maria ti-filise o Yianis   O Cl_{ACC}-V S
the-$_{Acc}$ Mary-$_{Acc}$ kissed-$_{3Sg}$ the-$_{Nom}$ John-$_{Nom}$
John kissed Mary

(10).   ti Maria o Yianis ti-filise   O S Cl-V
the-$_{Acc}$ Mary-$_{Acc}$ the-$_{Nom}$ John-$_{Nom}$ her-$_{Cl-Acc}$-kissed-$_{3Sg}$
John kissed Mary

Cliticisation and its main properties in MG are discussed below.

1.b.   Cliticisation

The term 'clitics' in the literature indicates morphemes attached on the verb stem. Traditionally, clitics are described as follows:

"Clitics are elements which share certain properties of fully fledged words, but which lack the independence usually associated with words. In particular, they can't stand alone, but have to be attached phonologically to a *host*. This makes them look a little like affixes, in particular inflectional affixes. Typically, clitics are function words, such as modal participles (e.g. interrogative participles), conjunctions, pronominals or auxiliary verbs. Historically they generally develop from fully fledged words and frequently develop into inflectional affixes." (Spencer 1991: 350)

Here we will be primarily concerned with pronominal clitics since, in recent years, those have been seen as an interesting domain of dispute in the literature regarding the identification of the appropriate grammatical level (Phonology, Morphology, Syntax) that offers the most promising prospects of treating them in an explanatory way. Phonological and Optimality accounts of clitics as in Anderson (1996) and Drachman (1997a, b) presuppose a paradigmatic view of Morphology. I will assume that this approach has been adequately argued against by Halle & Marantz (1993, 1994) both on the grounds of lack of explanatory power and for reasons of empirical inadequacy. Consequently, I will be concentrating on evaluating the morphological and the syntactic accounts on the grounds that, in my view, those two appear currently as the most promising alternatives.

Roughly, these two views about cliticisation involve a debate about whether clitics can be taken as being attached at the morphological component of the grammar (in the lexicon or at a separate level) or at the syntactic component. According to the 'morphological/lexical' view, clitics are derivational affixes modifying the lexical entry of a predicate, that is, clitics can be seen as "intransitivisers". According to the 'syntactic' view, clitics are separate words which are inserted independently on the syntactic tree and which become affixed on a host by the regular processes of syntactic movement that also affect other constituents. Both views have been argued for regarding MG clitics and, admittedly, there is no clear evidence as regards which approach should

be preferred. The properties of MG clitics which are discussed below seem to offer arguments for both views.

In contrast with, e.g., Northern Italian dialects (see Manzini & Savoia 1998) pronominal clitics in MG are restricted to Object clitics[2]. MG possesses both Direct and Indirect Object clitics with slightly different semantic properties (see Anagnostopoulou 1994). In terms of case, Object pronominal clitics in MG bear distinct morphological inflection for Accusative or Dative[3] case. In Standard Greek, object clitics precede the verb (*proclisis*) in all matrix and embedded finite environments. In the Imperative and the Gerund, taken as non-finite constructions, they must follow the verb (*enclisis*). In the Cretan, Rhodos, Chios, Cypriot and Cappadocian dialects, clitics exhibit what has been traditionally called the *Tobler-Mussafia Law* effects: Clitics appear in enclisis in root clauses but in proclisis after focus, wh-questions, negation[4] and complementisers (see Agouraki 1997 for a syntactic analysis). In Northern Greek dialects the 1st person clitic can appear infixed between the verb stem and the plural inflection (*mesoclisis*) in the 2nd person plural Imperative, a phenomenon which has been described in Rivero (1994) and Drachman (1997a, b, 1998). Phenomena of variable enclisis or proclisis have been used to support both morphological and syntactic accounts of cliticisation. However the phenomenon of mesoclisis is, in my view, a clear indication for an account of cliticisation at the level of Morphology. On the other hand, Tobler-Mussafia Law effects show interaction of cliticisation with syntactic operations like movement.

Another relevant to the debate property of cliticisation is that there can be no interruption of the clitic sequences which, according to traditional descriptions, attach very closely to the verb so that even the mood (*na*) or future particles (*tha*) cannot intervene. This seems to support the 'morphological attachment' approach to cliticisation. A problem for this approach, on the other hand, seems to be the phenomenon of *Clitic Climbing*. Nevertheless, since there is no clitic climbing in MG according to most descriptions which do not admit the existence of infinitives in MG (see Tsiplakou 1998, Anagnostopoulou 1993, 1994, Drachman 1997a, but cf. Agouraki 1993) there is no clear evidence here at least for this particular language. On the other hand, another phenomenon often associated with pronominal cliticisation cross-linguistically, the phenomenon of *Clitic Doubling*, appears extensively in MG. It involves the appearance of a clitic simultaneously with an overt DP argument. Moreover, idiosyncratically in MG, the doubled DP violates *Kayne's Generalization* since it does not need to be accompanied by a preposition in order to be present (as is the case in, e.g.,

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[2] Subject clitics have been proposed by Joseph (1993) and Drachman (1997a) for constructions analogous to *voi-ci* and *voi-la* in French but, since their distribution (if they exist) is very restricted, I think that we can safely ignore them here.

[3] What I will be calling Dative clitics bear, in fact, morphological Genitive case since morphological Dative has been eliminated from the MG case system. However, Genitive in these contexts has been treated as underlying Dative both by traditional and generative grammars. Here, the term Dative is used to refer to both the morphological Genitive and the morphological Accusative which substitute for Ancient Greek Dative in Standard Greek and Macedonian Greek respectively (see Dimitriadis 1996).

[4] To my knowledge the Cretan and Cappadocian (see Janse 1993) dialects show enclisis with negation. However, Agouraki (1997) and Rivero & Terzi (1995) present examples from Cypriot Greek where this is not the case.

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Romance). According to Anagnostopoulou's (1994) account Clitic Doubling has also interpretational effects: the doubled DP must be *prominent* (as in Heim 1982) and *specific* which to most intents and purposes of the syntactic accounts roughly translates to the requirement that the doubled DP bear the definite determiner (although not all definites can be doubled)[5]. In fact, clitic doubling of any kind is absolutely excluded with bare singulars but indefinites and quantifiers can be clitic doubled under certain restricted semantic conditions.

The morphemes that realize clitic arguments are rigidly ordered with respect to one another and, moreover, this order does not necessarily match that of the overt lexical arguments. This corresponds to the situation found with all other functional/inflectional morphemes and can be adduced in support of the 'morphological/lexical' approach. For instance, whereas in Greek it is generally possible for both the Objects of a ditransitive verb to appear immediately next to it, this flexibility is not allowed in the clitic cluster:

(11). Edosa to vivlio tou Yiani
Gave-I the book-ACC the John-DAT
I gave the book to John

(12). Edosa tou Yiani to vivlio
Gave-I the John-DAT the book-ACC
I gave the book to John

(13). Tou to dosa
Him-Cl-DAT it-Cl-ACC gave-I
I gave it to him

(14). *to tou edosa
it-Cl-ACC him-Cl-DAT gave-I
I gave it to him

Additionally, in support of the morphological approach, there are mutual exclusions among clitics that do not mirror mutual exclusions between the corresponding lexical arguments. For example, in MG, verbs which take two ACC Objects when these are realised as full NPs will take obligatorily a DAT and an ACC in a clitic construction. This shows that there is a restriction regarding the type of clitics that can appear in sequence which is independent of the syntactic argument structure properties of the predicate:

(15). Didasko ton Janni Anglika
I-teach the John-ACC English-ACC
I teach John English

(16). Didasko tou Janni Anglika
I-teach the John-GEN English-ACC
I teach John English

(17). *Ton ta didasko

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Him-Cl-ACC them-Cl-ACC teach-I
I teach him it (English).

(18). Tou ta didasko
Him-Cl-GEN them-Cl-ACC teach-I
I teach him it (English).

Furthermore, whereas a verb can take a first and a second person pronoun objects when these are full DPs, in clitic constructions this combination is disallowed:

(19). *tu se dini
him-Cl-DAT you-Cl-ACC gives
He gives you to him

(20). Dini esena aftou(nou)
gives you-ACC him-DAT
He gives you to him.

(21). * Mou se edose
me-Cl-DAT you-Cl-ACC gave
He gave you to me

(22). Se edose emena
you-ACC gave me-DAT
He gave me to you

Additionally, MG clitics can realise positions which have no counterpart in the argument structure of the verb (*ethical datives*). In these cases, the clitic does not link to any argument, nor can be replaced by a full lexical DP:

(23). mu espase to potiri tu Petrou
me-DAT broke the glass-ACC the Peter-DAT
I broke Peter's glass

(24). Ti mou kaneis?
How me-Cl-DAT are you?
How are you?

(25). Mou gerases proora
Me-Cl-DAT got-old-2nd-Sg before your time
You got old before your time (and I am sad)

Regarding the above type of evidence, Bonet (1991) points out that, cross-linguistically, there is a great range of variation in clitic systems which does not correspond to any difference in the systems of full DP and PP arguments or adjuncts. As most current linguistic theories locate cross-linguistic variation in the specification of the features and properties associated with lexical items, it would seem desirable, on a conceptual level, to seek to attribute the observed differences to the variable lexicalisation possibilities of arguments permitted in a language. In this respect, following the approach taken in HPSG and other frameworks regarding the treatment of cliticisation I will assume here without further argumentation that clitics are attached on

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their hosts at the lexical level (for additional arguments regarding the desirability of this solution for MG, see Joseph (1988, 1992), Prokopidis (1998)).

2. DISLOCATION STRUCTURES IN MODERN GREEK: THE PHENOMENA

As was mentioned above, word order in MG displays considerable flexibility. In recent years the syntactic literature has associated this flexibility with semantic or discourse considerations which effect modification of the underlying "predicate-argument" structure and result in the displacement of constituents. As a result, a number of different constructions and clause structure positions have been proposed that produce a direct mapping between position in the string and interpretational aspects of the clause at the discourse and semantic levels. I will describe below the main constructions and operations that have been proposed and their distinguishing properties. All these proposals take as their basic starting point a rigid predicate-argument hierarchical structure (the traditionally named "deep structure" or the combinatory mechanism imposed by the theta theory) and from there operations and dependencies like movement are assumed in order to account for variable surface word order.

2.a.   Topic and Focus structures

In the GB/Minimalist literature two types of constructions are distinguished associated with two different discourse/semantic phenomena: (a) *Focus structures* which involve a movement dependency and (b) *Topic structures* which, standardly, do not. According to several researchers (e.g. Tsimpli 1990), the basic formal feature that sets apart the two phenomena is the presence of resumptive pronouns (clitics) which whereas required in Topic structures are debarred from Focus constructions. Another distinguishing property is that whereas the focused phrase attracts the main accent of the sentence (shown in capitals here) a Topic is, standardly, de-accented. Impressionistically and in theory-neutral terms, it can be seen in the data below that if a phrase carries the main accent of the sentence it cannot be accompanied by a clitic:

(26).   TI MARIA filise o Yianis
the-$_{Acc}$ Mary-$_{Acc}$ kissed-$_{3Sg}$ the-$_{Nom}$ John-$_{Nom}$
John kissed MARY

(27).   *TI MARIA   ti-filise o Yianis
the-$_{Acc}$ Mary-$_{Acc}$ her-$_{cl-acc}$ kissed-$_{3Sg}$ the-$_{Nom}$ John-$_{Nom}$
John kissed MARY

(28).   ti Maria   ti-filise o Yianis
the-$_{Acc}$ Mary-$_{Acc}$ her-$_{cl-acc}$ kissed-$_{3Sg}$ the-$_{Nom}$ John-$_{Nom}$
John kissed Mary

However, despite the claims to the contrary taken as standard in the Principles and Parameters (P&P) literature, dislocation and the absence of clitics do not necessarily signify a Focus structure: Alexopoulou (1999) has uncovered structures, analogous to the *Topicalisation* phenomenon in English, where a dislocated phrase with Topic/old

information interpretation is not accompanied by a clitic and also does not carry the main accent:

(29).   ...Tin parastasi skinothetise o Karolos Kun ...
   the performance-ACC directed-3rd-Sing-Active-Past the Karolos Kun-NOM
   the performance was directed by Karolos Kun

The existence of this structure conflicts with the claim that there is strict syntactic-semantic/discourse function correspondence in MG. Based on such evidence, Alexopoulou (1999) and Alexopoulou & Kolliakou (2000) substantiate the conclusion that this is not the case.

2.b.   Topic Left Dislocation structures

Anagnostopoulou (1997) further subdivides left dislocation structures for constituents with topic interpretation into two subtypes depending upon the degree of 'connectedness' between the moved constituent and what follows: a) in *Hanging Topic Left Dislocation* the dislocated phrase is loosely related to the subsequent clause. This type of topic creates a general context for what follows even though there is no syntactic relationship between the topicalised DP and the clause following it.   b) *Clitic Left Dislocation* displays syntactic connectedness effects between the dislocated phrase and its base position which are analogous to those reported in Focus structures:

a.   Hanging Topic Left Dislocation (HTLD):

(30).   O Yianis $\#^6$ xtes   gnorisa   tin gineka   pu   ton pandreftike
   the$_{nom}$ Yianis$_{nom}$ # yesterday met$_{1st\ sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl\ acc}$ married$_{3rd\ sing}$
         John, I met yesterday the woman who married him.

b.   Clitic Left Dislocation (CLLD) appearing in MG and Romance:

(31).   tu Yiani   tu   edosa   ena vivlio   xtes
   the$_{gen}$ Yiani$_{gen}$ him$_{cl\ gen}$ gave$_{1st\ sing}$ a$_{acc}$ book$_{acc}$ yesterday
   to John, I gave him a book yesterday.

(32).   tu   Yiani   tu   milisa   xtes
   the$_{gen}$ Yiani$_{gen}$ him$_{cl\ gen}$ spoke$_{1st\ sing}$ yesterday
         I spoke to John yesterday

According to Anagnostopoulou's proposal, there are several properties that distinguish the two phenomena. As also Cinque (1990) initially suggested, these mainly concern the connectivity effects found in CLLD but not occurring in HTLD. In particular for MG:

(a)   In HTLD, the resumptive element can be a clitic doubled tonic pronoun or epithet (doubling is necessary because it forces coreference); in CLLD it can only be a clitic:

(33).   Ipe oti ti Maria (*aftin) sinantisa (* aftin/*tin ilithia) chtes   CLLD

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[6] # indicates intonational break, pause

said-he that the Mary (*her) met (*her/*the stupid) yesterday
He said that I met Mary yesterday

(34). Ti Maria, (aftin) tin sinantisa chthes (aftin)[7]... HTLD
the-$_{ACC}$ Mary-$_{ACC}$ (her-$_{FEM-ACC}$) her-$_{CL-FEM-ACC}$ met-$_{1st-Sing-Past}$ yesterday (her-$_{CL-FEM-ACC}$)
as for Mary, I met her yesterday (whereas John, I didn't see him at all)

(35). Ti Maria, tha tin strangaliso aftin tin ilithia
the Mary-$_{ACC}$ will her-$_{CL-FEM-ACC}$ strangle-$_{1st-Sing}$ her-$_{ACC(deictic)}$ the-$_{DET-FEM-ACC}$ idiot
Maria, I could strangle that idiot.

(b) In HTLD, a sharp intonational break between the left dislocated XP and the rest of the sentence is obligatory; such pause is not necessary in CLLD:

(36). O Yianis # xtes gnorisa tin gineka pu ton pandreftike HTLD
the$_{nom}$ Yianis$_{nom}$ # yesterday met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl acc}$ married$_{3rd sing}$
John, I met yesterday the woman who married him.

(37). ton Yiani# xtes gnorisa tin gineka pu ton pandreftike HTLD
the$_{acc}$ Yiani$_{acc}$ # yesterday met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl acc}$ married$_{3rd sing}$
John, I met yesterday the woman who married him.

(38). tu Yiani tu edosa ena vivlio xtes CLLD
the$_{gen}$ Yiani$_{gen}$ him$_{cl gen}$ gave$_{1st sing}$ a$_{acc}$ book$_{acc}$ yesterday
to John, I gave him a book yesterday.

(39). tu Yiani tu milisa xtes CLLD
the$_{gen}$ Yiani$_{gen}$ him$_{cl gen}$ spoke$_{1st sing}$ yesterday
I spoke to John yesterday

(c) HTLD never occurs in embedded sentences whereas CLLD does:

(40). *Ipa (oti) ton Yiani# xtes gnorisa tin gineka pu ton pandreftike
said$_{3rd sing}$ (that) the$_{acc}$ Yiani$_{acc}$ # yesterday met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl acc}$ married$_{3rd sing}$
I said that, John, I met yesterday the woman who married him.

(41). Ipa oti tu Yiani tu edose to vivlio i Maria xtes
said$_{3rd sing}$ that the$_{gen}$ Yiani$_{gen}$ him$_{cl gen}$ gave$_{3rd sing}$ the$_{acc}$ book$_{acc}$ the$_{nom}$ Maria$_{nom}$ yesterday
(I said that) to John Mary gave the book yesterday

(d) In HTLD there is no obligatory case-agreement between the left dislocated phrase (which can be nominative) and the DP appearing in the main clause; CLLD, on the other hand requires case matching:

(42). O Yianis # xtes gnorisa tin gineka pu ton pandreftike HTLD
the$_{nom}$ Yianis$_{nom}$ # yesterday met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl acc}$ married$_{3rd sing}$
John, I met yesterday the woman who married him.

(43). Ipe oti ton Yiani ton gnorisa xtes CLLD
said-he the$_{acc}$ Yiani$_{acc}$ him-$_{Cl-acc}$ met$_{1st sing}$ yesterday
He said that I met John yesterday.

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[7] Conventionally, parentheses around a constituent indicate that it can be spelt out in any of the indicated positions (but of course not in all of them at the same time).

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(44).   *Ipe oti o Yianis   ton   gnorisa   xtes   CLLD
said-he that the$_{nom}$ Yiani$_{nom}$ him-$_{Cl-acc}$ met$_{1st\,sing}$ yesterday
He said that I met John yesterday.

(e) left dislocated idiom parts are not acceptable in HTLD but grammatical in CLLD:

(45).   *I tixi tou # tin ekane stin Ameriki
the-$_{nom}$ luck$_{nom}$ his-$_{gen}$ # her-$_{Cl-acc}$ made-$_{3rd\,Sing}$ in the-$_{acc}$ America-$_{acc}$

(46).   Tin tixi tou tin ekane stin Ameriki
the-$_{acc}$ luck$_{acc}$ his-$_{gen}$ her-$_{Cl-acc}$ made-$_{3rd\,Sing}$ in the-$_{acc}$ America-$_{acc}$
He made his luck/fortune in the States

(f) Anaphors are not permitted in HTLD; they are well-formed in CLLD:

(47).   O   eaftos tou #   o Yianis   den ton   frondizi[8]
the-$_{nom}$ self-$_{nom}$ his-$_{gen}$ # the-$_{nom}$ John-$_{nom}$ not him-$_{Cl-acc}$ takes care of-$_{3rd\,Sing}$
John doesn't take care of himself

(48).   ton eafto tou o Yianis den ton frondizi
the-$_{acc}$ self-$_{acc}$ his-$_{gen}$ the-$_{nom}$ John-$_{nom}$ not him-$_{Cl-acc}$ takes care of-$_{3rd\,Sing}$
John doesn't take care of himself

(g) bound pronouns in left dislocated position are not allowed in HTLD whereas they are grammatical in CLLD:

(49).   *I mitera tou-$_{j/i}$ # kathenas$_j$ tin agapai
the-$_{nom}$ mother-$_{nom}$ his-$_{gen}$ everyone-$_{nom}$ her-$_{Cl-acc}$ loves-$_{3rd\,Sing}$

(50).   Ipe oti   ti mitera tou$_{j/i}$ kathenas$_j$ tin agapai
said-he that the-$_{acc}$ mother-$_{acc}$ his-$_{gen}$ everyone-$_{nom}$ her-$_{Cl-acc}$ loves-$_{3rd\,Sing}$
He said that everyone loves his mother

(h) CLLD constructions in MG display (strong-) island sensitivity; HTLD constructions, on the other hand, are grammatical even when the left dislocated phrase is associated with a clitic located inside an island (relative clause islands below):

(51).   *Ipe oti ton Yiani   xtes   gnorisa   tin gineka   pu ton pandreftike   CLLD
said-he that the$_{acc}$ Yiani$_{acc}$ yesterday met$_{1st\,sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl\,acc}$ married$_{3rd\,sing}$
He said that John, I met yesterday the woman who married him.

(52).   *Ipe oti tu Yiani   gnorisa   tin gineka   pu tu   milise   xtes   CLLD
said-he that the$_{acc}$ Yiani$_{gen}$ met$_{1st\,sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl\,gen}$ spoke$_{3rd\,sing}$ yesterday
John, I met the woman who spoke to him yesterday.

(53).   O Yianis #   xtes   gnorisa   tin gineka   pu ton pandreftike   HTLD
the$_{nom}$ Yianis$_{nom}$ # yesterday met$_{1st\,sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl\,acc}$ married$_{3rd\,sing}$
John, I met yesterday the woman who married him.

(54).   ton Yiani#   xtes   gnorisa   tin gineka   pu ton pandreftike   HTLD
the$_{acc}$ Yiani$_{acc}$ # yesterday met$_{1st\,sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl\,acc}$ married$_{3rd\,sing}$

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[8] Nominative anaphors are perfectly grammatical in MG.

John, I met yesterday the woman who married him.

(i) Finally, according to Alexopoulou (1999) there is no limit to the number of dislocated phrases in CLLD whereas only one dislocated phrase can appear in HTLD:

(55). *I Maria, o Yiannis, tis edose ta vivlia
the Mary-NOM, the John-NOM her-GEN gave-he the books-ACC
As for Mary, John gave her the books

In the P&P framework syntactic connectedness effects like those displayed by CLLD above are accounted for by postulating a movement dependency. According to this criterion, whereas CLLD must involve some type of movement, HTLD must not. This distinction is thus provided as an explanation for the data above and especially for the fact that HTLD is insensitive to Subjacency and island effects whereas CLLD displays island-sensitivity.

2.c. Topicalisation, Focus movement, CLLD, HTLD

In summary, there are several construction types that have appeared in the literature concerning the analysis of left periphery phenomena: Topicalisation, Focus structures, CLLD and HTLD. Topicalisation and Focus movement involve a gap whereas HTLD, CLLD involve a clitic accompanying the verb. Regarding Topicalisation, Focus structures and CLLD:

i) all three obey strong islands
ii) the extracted XP can appear on either side of the complementiser *oti*
iii) all phenomena can appear in embedded clauses

Moreover, it has been claimed that Focus movement gives rise to WCO while Topicalisation and CLLD do not:

(56). *TO YANI$_i$ agapai i mitera tu$_i$
the John$_i$ loves the mother his$_i$
His$_i$ mother loves JOHN$_i$

(57). to Yani$_i$ ton$_i$ agapai i mitera tu$_i$
the John$_i$ him$_i$ loves the mother his$_i$
His$_i$ mother loves John$_i$

However, Alexopoulou (1999) shows that the order of constituents does not affect WCO in Greek. In-situ focus equally gives rise to WCO whereas coindexing is allowed in Clitic Doubling constructions:

(58). *I mitera tu$_i$ agapai to YANI$_i$
the mother his$_i$ loves the John$_i$
His$_i$ mother loves JOHN

(59). I mitera tu$_i$ ton$_i$ agapai to Yani$_i$
the mother his$_i$ him$_i$ loves the John$_i$

His_i mother loves John

Since Alexopoulou (1997) and Kempson et al. (2001) show that WCO can be regarded as a phenomenon governed by discourse considerations it will not be considered further here.

Another construction involving the left periphery, *wh*-movement, is discussed below.

2.d. Wh-movement

As in English, *wh*-questions in MG involve the 'displacement' of a constituent to the left periphery of the clause. There are several idiosyncratic properties of *wh*-movement in MG. First of all, according to some researchers, there is a requirement for the verb to appear in a position immediately following the *wh*-element. Secondly, *wh*-phrases in MG can be associated with clitics resulting to special interpretational effects. Furthermore, Tsimpli (1995, 1998) claims that a *wh*-phrase cannot co-occur with a focused phrase in the left periphery of a main clause. On the other hand, in embedded clauses a focused constituent and a *wh*-phrase can both be preposed as long as the *wh*-phrase follows the focused phrase in the linear order and not vice-versa:

(60). rotise TO VIVLIO pios pire
       asked THE BOOK who took
       he asked who took THE BOOK

Thus it seems that there are two positions available for focused and wh-phrases in embedded clauses but only one in matrix clauses (see also Tsiplakou 1998). However, Agouraki (1990) and others consider the following as grammatical:

(61). TO VIVLIO pios pire?
       THE BOOK who took?
       who took the book?

Another property of *wh*-constructions is the obligatory absence of a complementiser introducing an embedded *wh*-question (the *doubly-filled Comp* constraint).

(62). *rotise oti pios pire to vivlio
       asked that who took the book
       he asked who took the book

2.e. Right Dislocation

Right Dislocation in MG have been analysed by Valiouli (1994), Tsimpli (1995) and Alexopoulou (1999). According to Valiouli (1994), Right Dislocation constructions can be given roughly the following theory-neutral structural analysis:

(63). [$_s$ [$_{s'}$ ... X$_1$ ...] X$_2$]

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X_1 is either an Object clitic pronoun, or the Subject agreement morpheme that is included in the finite verb suffix. X_2 is non-vocative and a full lexical DP. X_1 and X_2 are in a type of anaphoric relation. X_2 however is quite often a semi-autonomous, i.e. optional, co-referring expression that does not function as a reference maintenance element, as it refers to presupposed, i.e. active or latent, discourse referents. There is always a clausal element in S', most often the last one, which is characterised by an intonation peak, i.e., it is the intonation centre, whereas X_2 is unstressed (i.e. is characterised by flat intonation). Moreover, usually a comma between S' and X_2 symbolises a slight pause on the part of the speaker, who especially when the intonation peak is placed on the last clausal element, has to stop a little in order to go on with unstressed (flat) X_2.

(64). $[_S [_{S'} \text{Agorase}_{X1} \text{ TO VIVLIO}], \text{o Yianis}_{X2}]$
bought the book, the John
John bought the book

(65). to AGORASA, to vivlio
it bought the book
I bought the book

(66). tu to EDOSA to vivlio tu Yiani
him-$_{CL-GEN}$ it-$_{CL-GEN}$ gave-$_{1st-Sing}$ the book-$_{ACC}$ the John-$_{GEN}$
I gave the book to John

Valiouli observes that in terms of intonation there are two types of right dislocation in MG: one type is characterised by *comma intonation*, in Chafe's (1988) terms, between S' and X_2 whereas the other has *period intonation* between the two constituents. Moreover, she shows that right dislocated constituents with period intonation are interpreted as *afterthoughts* which can also have the dislocated constituent X_2 bearing stress. With regard to anaphora, the kind of relation involved is not always the same: in some cases the anaphoric element in S' is assigned a value indexically independently of the X_2, in others the dislocated full DP is necessary in order for reference to be assigned to the anaphor.

2.f. MG Relative Clauses

According to standard syntactic accounts, Relative Clause constructions also involve the dislocation of a constituent from its base position and its appearance on the left periphery in the form of a specialised relativising element. Relative clauses (RCs) in MG are of two types: One type is introduced by a *wh*-relative pronoun (*opios*-RCs) marked for case, number and gender. The other is introduced by the complementiser *pu* 'that' (*pu*-RCs) which does not show any of these features:

(67). diavasa ena vivlio [*to opio* mu sistise i Maria]
read-$_{1st-Sing}$ a book-$_{ACC}$ [the-which$_{Sg-Neu-ACC}$ me-$_{Cl-DAT}$ introduced the Mary-$_{NOM}$]
'I read a book which Mary introduced to me'

(68). diavasa ena vivlio [*pu* mu sistise i Maria]
read-$_{1st-Sing}$ a book-$_{ACC}$ [that me-$_{Cl-DAT}$ introduced the Mary-$_{NOM}$]
'I read a book that Mary introduced to me'

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In MG a relative pronoun and a complementiser cannot co-occur. As a result, there is debate in the literature regarding whether the *pu* element should be taken as a relative pronoun or as the normal complementiser *pu* introducing other embedded clauses.

RC constructions in MG interacts with cliticisation. Clitics may appear in both types of clauses identified above:

(69). agorasa   ena vivlio [to opio   (to)   diavasa me   megalo endiaferon]
      bought.$_{1st-Sing}$ a   book.$_{Acc}$ [the which.$_{Acc}$ it-$_{Cl-Acc}$ read-$_{1st-Sing}$ with great   interest]
        'I bought a book which/that I read it with great interest'

(70). agorasa   ena vivlio [pu (to)   diavasa me megalo endiaferon]
      bought.$_{1st-Sing}$ a   book.$_{Acc}$ [that (it-$_{cl-ACC}$) read-$_{1st-Sing}$ with great   interest]
        'I bought a book which/that I read it with great interest'

In MG all positions mentioned in the *Accessibility Hierarchy*[9] (Keenan & Comrie 1977), that is, Subject, Direct Object, Indirect Object, Oblique, Possessive Genitive, Object of Comparison, relativise although with greater difficulty as we move from left to right on the hierarchy: after the Indirect Object position, which seems to be an intermediate case, all other positions require the presence of a clitic in order to relativise. Also, MG has no *complementiser-less relatives* and has obligatorily *pied-piping* relatives. In this paper for reasons of space I will largely ignore pied piping, possessive genitive and object of comparison relativisation.

3. THE DYNAMIC SYNTAX FRAMEWORK

In the Principles and Parameters framework (GB, Minimalism), natural language strings are mapped onto representations at several different levels: DS, SS, PF, LF. Under this view of grammar, it is the LF level that which provides the input to semantic evaluation and inference. Furthermore, semantic evaluation at this level is not 'translational' (see, e.g., Higginbotham 1985) but, rather, maps directly structured representations to semantic content. Therefore an additional level of 'language of thought' is not required as intervening between natural language and computation of meaning and inferential effects. Because logical form in the sense of a formal representation which serves as input for inference is defined as a 'property' of the LF level (a linguistic syntactic level) the relevant structural information for semantic evaluation and inference has to be derived by the same mechanisms as those assigned to the natural language syntactic component. This is why most interpretational aspects of the natural language string have been "grammaticalised" in the sense that they have to be derived and be represented explicitly by the same means and processes that derive surface phonological form.

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[9] the Accessibility Hierarchy can be seen as an epiphenomenon associated with the processing difficulty of recovering non subcategorised arguments without explicit encoding.

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On the other hand, the *Dynamic Syntax* (DS) framework by taking seriously the *Representational Theory of Mind* as presented in, e.g., Fodor (1981a) attempts a reduction of the levels postulated for natural language processing. The basic idea here is that if thought in general can be taken to manipulate structured representations of "concepts"[10], then there is no need to postulate a separate level of structured representations specific for linguistic objects. In this view, natural language is not treated itself as an inference system, but, rather, as a means for constructing expressions over which inference can be defined from an externally induced signal (an 'input system' in Fodor (1983)'s sense). In consequence, what in the P&P framework are separate levels of structural representation of strings and their interpretation (SS and LF) are treated here as epiphenomenal. Accordingly, *Syntax* (or the *Computational System* of Minimalism) is defined as the means of allowing the progressive and monotonic construction of binary trees of the content of natural language objects through a set of transition rules and interacting pragmatic processes. The philosophical notion of *logical form* for ordinary language, in the sense of defining a formal representation of the truth conditional aspects of a sentence string modulo context, is also treated as epiphenomenal here since linguistic objects are perceived as nothing more but procedural means for accessing and constructing the non-linguistic content that the inference mechanisms manipulate.

In terms of the implementation of these ideas now, in DS, the process of human language understanding is modelled as the incremental construction of a logical object in tree form by the hearer who receives the linguistic signal as input. This process is governed by general computational rules and the words of the language which are taken as procedures executed in a left to right sequence according to their appearance on the natural language string. Each word contributes to the transition from one partial logical object to another with the eventual aim of constructing a final complete lambda term represented as a decorated binary tree. These eventual tree descriptions with their corresponding tree structures are representations of content discrete from natural language itself and it is those representations over which the semantic evaluation associated with the utterance takes place. A formal language (*DU*) is defined in order to describe these trees at every stage of their construction. A crucial and distinctive feature of this framework is that pragmatic and computational/structural processes are allowed to interact on-line and thus derive jointly the final product of processing the linguistic string. Another distinguishing feature is that such a parsing system is able to integrate several forms of underspecification arising in the process of language understanding:

a. Pieces of structure can be introduced accompanied by *requirements* which must be fulfilled at some subsequent stage in the parsing process. Requirements can be taken as imposing constraints on the well-formedness of the completed structure. In the language DU, the language employed to describe the data structures, a *question mark* is introduced to represent requirements. For example, the root-node of the tree is introduced with the requirement for a formula of type t (?Ty(t)) to be derived by the end of parsing the string. The subcategorisation frame of a predicate is also

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[10] Cf. Fodor's views about mental representations including the contention that the mind is a "syntax-driven machine" (Fodor 1981).

introduced in the form of requirements for arguments of the appropriate type (e.g. $?Ty(e)$).

b. In transposing underspecification from the semantics into syntax and processing, long distance dependencies are analysed as involving branches which are initially projected as un(der)specified in terms of their tree node positions. This ensures the result of strings with distinct surface form giving rise to identical logical objects at the end of the parsing process. Different surface forms can be exploited in order to derive variable inferential effects in context but the representation of the core truth-conditional meaning remains stable across such variable input signals.

c. Anaphoric expressions like pronouns, definite NPs etc. lexically project *meta-variables*, that is, unspecified values that must be replaced later by some selected term through computational or pragmatic processes of *Substitution*. This exemplifies another form of underspecification, namely, the 'content underspecification' of elements of the input.

On a theoretical level, the aim here is to achieve a unified theory of *anaphora* as a form of underspecification ranging across expressions and structures. During the construction process all types of underspecification become associated with requirements which will force eventual resolution to a fully specified value. *Grammatical* strings are those for which the formalism after consuming all the lexical input can produce a completed logical form with no requirements outstanding.

3.a. Data Structures and the language DU

The formalism consists of a *Labelled Deductive System* in the sense of Gabbay (1996). The heart of the system are the *Formulae* used to express the content of linguistic items. The eventual construction of a Formula of type t which is the target of the parsing process is driven by the combinatorial possibilities of a small number of logical types (e, t, cn and a small finite number of their derivatives) which accompany as *Labels* the Formula values. Other types of Labels are also defined (e.g. gender specifications, clause type, scope etc.) which act as controls in the process of constructing the eventual Formula value. The aim of the parser is to construct 'decorated' tree structures. The decorations on the nodes of such trees are represented by *declarative units*, that is, *Labels-Formula* pairs. The language used to talk about these data structures, that is the binary tree representations of content and their labels, is the formal language DU. In it, the predicate Fo defines the Formula content of each declarative unit whereas each label is associated with its distinctive predicate, e.g., for the logical type of the formula we have the predicate Ty, for the address of each node we have the predicate Tn etc. In the course of the parse *partial* declarative unit descriptions will arise, these being subsets of a description of a (full) declarative unit.

A general distinctive feature of the language is the incorporation of *meta-variables* in the language itself acting as place holders for proper terms, that is, terms belonging to the domains $D_{La} \cup D_{Fo}$. Meta-variables are not object-level variables but substitution

sites for other expressions. A proposition containing a meta-variable will be explicitly represented as incomplete in virtue of an outstanding requirement. For example, $Fo(U)$ will be accompanied by a requirement for a value from D_{Fo}:

(71).　{ $Fo(U)$, ?∃xFo(x) }

In order to end the parsing process without outstanding requirements an actual term has to replace the meta-variable U because the existential quantifier will range over elements of D_{Fo} which contains as values all objects of type e in the logical vocabulary and U is not a member of it. A further distinguished set of meta-variables are those of the form WH which is the value of the formula projected by *wh*-expressions in *wh*-questions. These are exceptional in being retained in the formula that results after processing a string.

Another idiosyncratic feature of the language for content-formulae are the *variable binding term operators*. These are operators projected by the determiners and are of type $cn \rightarrow e$. These bind variables within an individual expression to create terms with bound variables. These terms are used in quantification and will be explicated below in section 4.e.2.b.

The concept of tree growth requires also a language to talk about trees, relations between their nodes and their relations with other trees. For this reason, the DU language employs the modal logic of finite trees (*LOFT*, Blackburn & Meyer-Viol 1994) with the following modalities:

(72).　$<\downarrow>, <\downarrow^0>, <\downarrow^1>, <\uparrow>, <\uparrow^*>, <\downarrow^*>, <L>, <L\text{-}1>, <D>, <U>$

The interpretation of these operators is as follows:

(73). From node n:

$< \downarrow_0 > X$	X holds at an argument daughter of n
$< \downarrow_1 > X$	X holds at a functor-daughter of n
$< \uparrow > X$	X holds at the mother of n
$< \downarrow_* > X$	X holds at a node dominated by n
$< \uparrow_* > X$	X holds at a node that dominates n
$< L > X$	X holds at some node LINKed to the main tree node n
$< L^{-1} > X$	X holds at some node of the tree to which this node is LINKed
$< D > X$	X holds at some node related to n through the reflexive and transitive closure of the union of daughter and LINK relations
$< U > X$	X holds at some node which is related to n through the inverse of the D relation

The characterisation of the unfixed, underspecified nodes appearing in partial trees is through the modal operator $<\uparrow_*>$ and its converse defined as $<\downarrow_*>$:

(74).　$< \downarrow^* > (Fo(a)) = Fo(a) \lor < \downarrow > < \downarrow^* > (Fo(a))$

The advantage that this tree logic offers is that one can describe nodes in any part of the tree from the perspective of any other node in that tree. Together with requirements this provides the ability to establish correlations and define constraints in the development of

the tree at any point of processing. Transitions from one partial tree structure to another, up to the establishment of the eventual tree representing the propositional form, are licensed by lexically encoded instructions and by syntactically defined, optional transition rules (*Computational rules*).

3.b. Rules and Actions

Computational Rules

These are general rules which are responsible for generating the structure of the tree and computing results. They are always optional and of the following general form:

(75).

$$\frac{\Delta_1}{\Delta_2}$$

where Δ_1 is a tree description which is transformed by the operation of the rule to Δ_2.
The core computational rules for introducing fixed tree relations are:

(76).

$$\frac{\{...\{...?Ty(Y),...,\Diamond\}...\}}{\{...\{...?Ty(Y), ?<\downarrow_0> Z_0, ?<\downarrow_1> Z_1, ..., \Diamond\}, ...\}} \qquad \textbf{Introduction}$$

where either $Z_0 = (Ty(X) \wedge \Diamond)$ and $Z_1 = Ty(X \to Y)$,
or $Z_0 = Ty(X)$ and $Z_1 = (Ty(X \to Y) \wedge \Diamond)$.

(77).

$$\frac{\{...\{<\downarrow_0>(Fo(\alpha), Ty(X)), <\downarrow_1(Fo(\beta), Ty(X \to Y)),...,\Diamond\}\}}{\{...\{Fo(APL(\beta, \alpha)), Ty(Y), <\downarrow_0> (Fo(\alpha), Ty(X)), <\downarrow_1> (Fo(\beta), Ty(X \to Y)) ..., \Diamond\}\}} \qquad \textbf{Elimination}$$

The Introduction rule licenses the introduction of requirements that will enable us to deduce the type requirement of the current node from its daughters with an application of Modus Ponens. The Elimination rule deduces the required type by applying a form of Modus Ponens which is defined over the Type label (Ty) and also including parallel function application defined over the Formula label (Fo).

(78).

$$\frac{\{...\{X,...?<\#> Z, \Diamond\}\}}{\{...\{X ... ?<\#> Z' \cup \{Y\}, \{<\#^{-1}> X, ... ?Z\} \cup \{Y'\}...\}} \qquad \textbf{Prediction}$$

where $X \in ADR$ and $Z=(\psi \wedge \Diamond)$, $Y = 0$, $Z' = \psi$, $Y' = \{\Diamond\}$,
or $Z = Z' = \psi$, $Y=\{\Diamond\}$, $Y' = 0$

(79).

$$\frac{\{...\{X,...\},\{X',...\phi,\Diamond\}...\}}{\{...\{X,...<\#> \phi, \Diamond\}, \{X'...\phi\}\}} \qquad \textbf{Completion}$$

where $X \in ADR$, $X = <\#> X'$ or $X' <\#^{-1}> X$
and if $?\chi \in \{X'... \phi\}$ then $\chi = 0$

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The rule of Prediction creates new nodes according to the requirements on the node where the pointer resides and also imposes new simpler requirements on these new nodes. Completion allows transfer of information from nodes where all the requirements have been fulfilled to other nodes where it can be used to eliminate other requirements.

Lexical Rules

Lexical rules encode the contribution of individual words to the construction of the tree. Words are taken as procedures for updating partial tree descriptions and the lexical rules are similar in range and effect to computational actions. The general format for lexical information is as follows:

(80). *Format of Lexical Entries*

IF	Ty(X)
THEN	make(...),
	put (...),
	go (...),
ELSE	ABORT

The annotation [↓]⊥ on a node indicates the node in question inhabits the terminal node of a tree, that is, it cannot be expanded further by the addition of another piece of tree structure.

Pragmatic actions

Among the lexical expressions there are those whose content is underspecified (e.g. anaphoric expressions) and which in order to be fully defined require the contribution of contextual parameters. The encoded content of such expressions consists in some place-holding device (a meta-variable) and some constraints for its substitution. Pragmatic actions, which are processes external to the computational/lexical system, fulfil the role of updating the values of such underspecified expressions. These are a subset of some larger set of pragmatic actions which manipulate the final logical form in conjunction with other externally provided information in order to derive contextual effects.

3.c. The treatment of word order in DS.

In the Principles and Parameters discourse-configurational treatments of dislocation phenomena, different structures are associated with different discourse interpretations. Prince (1995) and Alexopoulou (1999) criticise this tendency by showing that the relation between syntactic form and discourse function is more or less arbitrary. In their view, constructing structural explanations for each discourse interpretation leads to multiplication of structural possibilities well beyond what is realised in any natural language. Moreover, the syntactic, as opposed to interpretational, evidence adduced for the postulation of such constructions is relatively weak and rather incidental. In this spirit, DS has only two mechanisms available for apparent dislocation structures: (a) structurally underspecified nodes to be updated later in the parsing process, and (b) LINK structures which involve the development of two separate trees and the sharing of information between them. These two mechanisms in combination with their interaction

with anaphora resolution will have to be shown adequate for the treatment of such quite diverse phenomena as the treatment of *wh*-questions, relative clauses and focus/topic structures. Below are the rules as have been developed for English.

Star Adjunction and Merge

The rule of Star(*) Adjunction is responsible for constructing an unfixed node in some position dominated by the $?Ty(t)$ node. It imposes as requirements on this newly constructed node the immediate anticipation of lexical input of the appropriate type (here $?Ty(e)$) and the search for some fixed tree address for this newly created node ($?\exists xTn(x)$):

Left * Adjunction

(81).
$$\frac{\{\{Tn(a),...\ ?Ty(t),\Diamond\}\}}{\{\{Tn(a),...?Ty(t)\},\{<\uparrow_*>Tn(a),...,?\exists xTn(x),?Ty(e),\Diamond\}}$$

At a given parse where the current node ($Tn(a)$) has a requirement for the development of a type t object ($?Ty(t)$), the introduction of an unfixed node is licensed by the *Adjunction rule and the pointer is moved there. This rule is utilised to allow for the processing of fronted constituents such as question words, focalised elements etc. It is representative of a family of rules which license the introduction of phrases with an as yet unspecified role in the structure to be projected.

The structurally underspecified node introduced by *Adjunction has to find a fixed place in the structure at some point in the parse. For this reason, the rule of *Merge* is introduced. As the simplified description of the rule below shows, Merge licenses the merging of two node descriptions (ND) provided that the address of the underspecified node is "compatible", that is, can be computed from the current pointed node according to principles specified in the definition for the legitimate extensions of partial tree descriptions to new ones:

Merge

(82).
$$\frac{\{...\ ND, ND'...\}}{\{...\ ND \cup ND'...\}}$$

Cann et al. (2001) also propose for English a rule of Right *Adjunction which introduces unfixed nodes after the construction of some type-complete propositional structure:

Right *Adjunction

(83).
$$\frac{\{\{Tn(a),...\ Ty(t),\Diamond\}\}}{\{\{Tn(a),...,Ty(t)\},\ \{<\uparrow_*> Tn(a),...,?Ty(X),\Diamond\}\}}$$

where X ranges over e, t

For this rule to lead to a well-formed outcome, there is an implicit condition that it can only take place if there is some meta-variable which has not yet been assigned a value. Then the process of Merge, which here applies at the top node as a general tree-update process, would provide that meta-variable with a value while providing the unfixed node with its tree-node address. There can be multiple applications of Right *Adjunction, giving rise to indefinite sequences of DPs following the verb.

The LINK rules

A LINK relation can be defined between nodes in two distinct trees whose nodes do not stand in a daughter or unfixed daughter relation. In such a set up, one of the trees can be taken as providing the context for the processing of the primary tree or, in some cases, to provide additional information that has to be incorporated in the main structure. An instance of the former case are topic structures in languages like Arabic whereas an instance of the latter are Restrictive Relative Clauses where the proposition supplied by the Relative is utilised to build a complex restrictor for the head nominal. A LINK analysis is employed in DS also for Non-Restrictive Relative clauses:

(84). Mary, [$_{Relative}$ who I like], is leaving tomorrow.

The Relative Clause is taken to be in a LINK relation to the head NP and moreover there is a requirement that there must be a shared formula value between the two structures. For English, the LINKed tree is the equivalent of 'an island for extraction' by which it is meant that since it is not in a daughter relation with the main structure, an unfixed node in the matrix tree cannot be fixed into a LINKed structure. Yet a LINKed structure is considered as part of the (global) tree since a copy of the formula value of the head noun has to be incorporated into it. The LINK relation is established as follows for English:

LINK Introduction
(85).
$$\frac{\{...\{X, Fo(\alpha), Ty(e) ... \Diamond\}\}}{\{...\{X, Fo(\alpha), Ty(e)\}, \{< L^{-1}>X ,?Ty(t)\}, \{< \uparrow.> < L^{-1}>X, ?Ty(e), ?\downarrow. Fo(\alpha), \Diamond\}\}}$$

The rule states that from a Ty(e) expression with some formula value, a transition is licensed in which two new LINKed nodes are built; a new root node with ?Ty(t), and a new unfixed node below the new LINKed root node which either bears identical type and formula value as the head noun or it dominates such a node (to account for pied-piping). From this point, the derivation proceeds as usual with the building of the Relative Clause. The unfixed node behaves similarly to the wh-words discussed earlier. After the due steps, subcategorisation information from the verb leads to the building of a node with a requirement ?Ty(e), where the unfixed node can be merged. The derivation then continues with the development of the matrix clause.

Crucially for MG, the LINK rules are employed in Kempson et al (2001) for the analysis of Topic structures in languages like Arabic and the Romance. The concept of the transfer of information between two trees developed in parallel can explain how one sentence can contain two elements, usually a full DP and a pronoun, seemingly sharing

the same thematic role without violation of the principle of Full Interpretation or the Theta Criterion. The information carried by the DP is usually taken to construct a complex node to which the rest of the clause provides a LINKed tree with the requirement to include a copy of the Formula value appearing on the complex node already constructed.

4. A DS ANALYSIS OF MG WORD ORDER

Let us review what are the facts that have to be accounted for with respect to MG. First, there is a parallel between Topicalisation, Focus structures and *wh*-movement. All three involve the displacement of a constituent away from its argument position and its appearance at the left periphery of the clause with a 'gap' remaining in the original position. All three processes are unbounded and display island sensitivity. In addition to that, there is the (alleged) requirement for the verb to appear in "second" position after the preposed constituent. Secondly, one has to ascertain if both a focus and a *wh*-constituent cannot appear preposed in a matrix clause whereas they can both appear introducing embedded clauses. In what concerns structures where the interpretation of the dislocated constituent is one of topic/old information, the facts that have to be accounted for are the presence of resumptive clitics in HTLD and CLLD, the island sensitivity and connectivity phenomena specific to CLLD and the confinement of HTLD to main clauses and Subject and Direct Object constituents. The combination of clitics and *wh*-phrases has also to be explained. Relative clauses pose some idiosyncratic problems because despite being apparent left dislocation structures the presence or not of a clitic in the base position is not readily predictable. Finally, there are the idiosyncrasies of the *pro-drop* phenomenon to be accounted for in combination with the case and agreement properties of verbs and nouns.

4.a. Lexical Entries For Modern Greek Verbs: *Pro-Drop*, Agreement and Clitics

4.a.1. Subject pro-drop

Kempson et al. (2001) propose that, for languages like English where the appearance of a Subject in a clause is obligatory, the rules of Introduction and Prediction construct the nodes which the Subject and the predicate will occupy. Thus verbs will have as condition in their lexical entries a requirement for $Ty(e \rightarrow t)$ on the pointed node ($?Ty(e \rightarrow t)$). On the other hand, for Subject-*pro-drop* languages, like MG and Arabic, the lexical entries for predicates have to be defined as responding to a condition of $?Ty(t)$. Subsequently, the instructions in the lexical entry for verbs will produce a sequence of actions which should include projection of the Subject node and its annotation with a (pronominal) meta-variable. This meta-variable is not accompanied by a bottom restriction like the annotations induced by other nominals and requires update to a regular Formula value either by a process of anaphoric resolution or by the process of merging some unfixed node from the periphery of the structure. The main consequence of this analysis is that all DPs preceding the verb have to be analysed as projecting either an unfixed node or a LINKed structure.

If we adopt this analysis for MG, it will imply that we do not accept that there is a canonical preverbal Subject position in the MG clause as there is in English (contrary, that is, to Horrocks 1994 and a lot of Minimalist argumentation regarding MG). In order to secure such a fixed position for the Subject in combination with the *pro-drop* feature, verbs have to have a disjunctive trigger condition either of ?Ty(t) or ?Ty($e \rightarrow t$) because, under just the latter and assuming that Introduction and Prediction build the Subject node and move the pointer there, subject-less clauses or clauses with post-verbal Subjects cannot be easily accommodated. We might have reasons to impose such a disjunctive characterisation, for example the evidence adduced by certain researchers (see e.g. Catsimali 1990) that MG is progressing towards a fixed SVO word order pattern. However, at the moment, reasons of simplicity and elegance require that we do not pursue this solution if we can avoid it. Since I will show below that there are independent factors requiring the presence of more than one unfixed nodes both in the left and the right periphery, I will adopt here the simplest solution and assume that verbs in MG respond solely to a condition of ?Ty(t). Moreover, the fact that agreement (both person and number) is obligatory with absolutely all verbs in MG[11] can also be taken as suggesting that it is the agreement morpheme that provides the meta-variable for the Subject with no need for a lexical DP if there is some antecedent contextually available. The following is a proposed lexical entry for an intransitive verb like *feugi* (=leaves):

(86). feugi (= leaves, tense omitted)

IF   {?Ty(t), ◊}

THEN   make(<↓₁>); go(<↓₁>);   put(Ty (e → t), Fo(λx(Leave(x)), [↓] ⊥);
       go(<↑₁>); make (<↓₀>); go(<↓₀>); put(Fo(U), Ty(e), ?∃x(Fo(x)).

ELSE   ABORT

According to what we said above, the verb defines the whole propositional template and inserts a meta-variable in the Subject position. This meta-variable will be substituted either from the (non-linguistic) context, or by the merging of an unfixed node, or by satisfying a requirement imposed by a tree LINKed to the main structure. The following is a first approximation of how the (simplified) lexical entry for a transitive verb would look like:

(87). Preliminary lexical entry for idhe (= saw, tense omitted)

IF   {?Ty(t)}
THEN   make (<↓₀>) ; go(<↓₀>) ; put(Fo(U), Ty(e), ?∃x(Fo(x)));
       go(<↑₀>); make (<↓₁>) ; go(<↓₁>); put(?Ty (e → t));
       make (<↓₁>) ; go(<↓₁>) ; put(Fo(λxλy(See(x, y)), Ty(e → (e → t), [↓] ⊥));
       go(<↑₁>); put(?(<↓₀>Ty(e))).

ELSE   ABORT

---

[11] except gerunds, infinitives do not exist

4.a.2. The Object node in MG

For the DPs following the verb in MG there are three choices: either they are introduced by normal Introduction and Prediction rules, or *Adjunction, or they are LINK structures. Kempson et al. (2001) propose that in English a transitive verb such as the one above will move the pointer back to the predicate node. A step of *Prediction* is then assumed to construct the Object node thus anticipating an appropriate Object DP as the following lexical input. If one adopts this mechanism also for MG the prediction would be that the order VO is always the case in MG as in English. However, many authors have claimed that the canonical word order in MG is VSO and, with most verbs, there is certainly nothing 'marked' in this order. One straightforward way to characterise this in DS is by assuming that the actions associated with the verb deposit either meta-variables or requirements at the Object positions and subsequently move the pointer to the Subject node for further development of it either by Substitution or by lexical input. The pointer will then move to the lowest open node (Indirect or Direct Object) and will proceed with its development. However, the problem that arises here is that there is no certainty as to whether the Direct or the Indirect Object will follow the Subject in VSO orders and there are no clear intuitions as to whether there actually exists a 'canonical' order. Therefore the movement of the pointer cannot be determined as simply as declaring a default that moves it in the lowest open position. For the same reason Introduction and Prediction cannot be utilised for the construction of the appropriate nodes. Moreover, added complications arise when the clitic-affixed verbs are taken into account either in isolation or in combination with overt DP arguments. Here, the main problem has to do with pointer movement and its interaction with the Substitution operation which updates meta-variables to proper Formula values. I will discuss these issues next.

4.a.2.a. Clitics and Substitution

The Substitution operation has to be defined either as operating freely in the grammar or as constrained by the presence of the pointer at the appropriate node. This issue is not a problem particular to MG because its solution will have to be consistent with the treatment of expletives and similar phenomena in English and other languages. The question that arises in this context is whether MG provides evidence in support of one or the other approach. In favour of Substitution operating freely are *cataphoric* phenomena, occurring in all languages, like the following from an actual text (Putnam 1988: 597):

(88). ...

> 1. Every word *he* uses is associated in the mind of *the speaker* with a certain mental representation ...

Regarding this example, note that there has been no mention of speakers in the previous text so the claim that we are dealing with coreference here is rather dubious. On the other hand, in favour of Substitution being restricted by pointer movement is the elegance of the treatment that expletives in languages like English could receive (see Cann et al. 2001): If we assume that an expletive just provides an element of the appropriate type (a

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meta-variable) and then moves the pointer away from the node thus leaving an open site for substitution then we would have to constrain the Substitution operation so that the presence of subsequent linguistic input in order to provide replacement for the meta-variable (by Right *Adjunction and Merge) is forced; otherwise, if Substitution can apply freely, a meta-variable could be substituted at any time and thus we would not be able to ensure further lexical development of the node occupied by an expletive. This is necessary because an expletive cannot occur on its own:

(89). *There exists.

(90). It appears/It seems that John will come

(91). *It appears.

(92). *It seems.

In fact, in a Subject *pro-drop* language like MG, it might seem that we do not face this problem since no Subject expletives occur. But even this descriptive statement requires explanation: why is it that Subject *pro-drop* languages do not have Subject expletives? The DS proposal suggests an interesting answer exploiting the fact that the meta-variable is contributed by the verb in *pro-drop* languages whereas a meta-variable has to be contributed by a necessarily specialised pronoun in non pro-drop ones. The fact that Object expletives occur in MG can be circumvented because these are clitic pronouns affixed on the verb which can appear without the accompaniment of overt lexical associates. Thus such constructions can be straightforwardly analysed as LINK structures, even if the option of Right *Adjunction was not available.

In general in the case of clitic-affixed verbs the clitic pronouns do not necessarily have to be accompanied by lexical DPs and can stand as arguments on their own. Therefore these pronouns cannot be treated as expletives of the English type which will have to require the presence of subsequent linguistic input. On the other hand, it has to be explained how they do allow the simultaneous presence of overt lexical arguments when the subcategorisation requirements of the predicate have been already satisfied. According to standard syntactic principles like the Theta Criterion and Full Interpretation, expressed in DS by the notions of requirements that must be satisfied for grammaticality, redundant structure should be disallowed. This paradox, problematic for all syntactic accounts, is resolved here by taking pronominal clitics as affixes which, even though they realise the thematic role that the verb assigns, do not cancel the possibility of a lexical argument appearing simultaneously. This is achieved not with separate lexical entries as in HPSG, but by removing the requirement that clitics provide a bottom restriction on the node they annotate as other nominal arguments do. In this respect, Subject agreement and Object clitics will receive similar treatment, i.e., both will decorate nodes with meta-variables[12] which do not carry bottom restrictions[13]. These meta-variables can be

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[12] cf. Philippaki-Warburton (1987) and Horrocks (1994) who state that both subject affixes and object clitics are pronominal elements functioning as base generated resumptive pronouns

[13] Notice that Clitic Doubling is not necessarily a root phenomenon in MG so that an analysis in terms of LINK structures cannot be all there is:

(i) ton ida ton Jiani na girisi xtes to vradi ke tu ipa na erthi na mas di

updated either by anaphoric resolution or by the process of merging nodes constructed by (optional) lexical input from the peripheries. This will lead us to conclude again that all peripheral lexical DPs accompanying clitics/agreement will create nodes either unfixed or LINKed to the main tree.

Notice now the relevance of the decision regarding Substitution and pointer movement for the analysis of MG clitic-affixed verbs: If it turns out that this operation is not freely available but rather restricted by the presence of the pointer on the appropriate node, that would have an effect in what we presume for the lexical entries for such verbs. This is because if we assume that the pointer always move to the Subject node to account for VSO as 'canonical' order and if there is no further input in the form of a lexical DP associated with the clitic, then the meta-variable on the Object node will never get the chance to be updated by a proper Formula value since the pointer will never return there. One solution to this would be to assume that the macro for the verb includes an action **substitute** which substitutes the meta-variable for a proper Formula value from context as soon as this meta-variable is introduced on the node. Since Merge will not be possible now, all DPs appearing at the right periphery would have to be assumed to have the flavour of 'afterthoughts' or reminders, that is, LINK structures, which is, in certain cases (see section 2.e), consonant with native speakers' intuitions:

(93). Preliminary lexical entry for *tin-idhe* (= saw-her, tense omitted)

IF $\{?Ty(t), \Diamond\}$

THEN $\text{make}(<\downarrow_1>); \text{go}(<\downarrow_1>); \text{put}(?Ty\ (e \rightarrow t));$
              $\text{make}\ (<\downarrow_1>); \text{go}(<\downarrow_1>); \text{put}(Fo(\lambda x \lambda y(Saw(x, y))), Ty(e \rightarrow (e \rightarrow t), [\downarrow] \perp));$
              $\text{go}(<\uparrow_1>); \text{make}(<\downarrow_0>); \text{go}(<\downarrow_0>); \text{put}(Fo(V), Ty(e));$ $\}object$
              $\text{substitute}(Fo(V)));$
              $\text{go}(<\uparrow_0>); \text{go}(<\uparrow_1>); \text{make}(<\downarrow_0>); \text{put}(Fo(U), Ty(e), ?\exists x(Fo(x)));$ $\}subject$

ELSE   ABORT

The problems for this analysis would be *reconstruction* effects and again cataphora which show that at the time the affixed verb is parsed there is no available antecedent for the pronoun to be substituted and therefore the action **substitute** will fail:

(94). Pio vivlio pu *tu*-arese echase *kathe mathitis*?
      which book that his-liked lost every student
      which book that he liked did every student lose?

(95). kathe andras pu *tin*-ide na feugi ipe sti *Maria* oti ekane lathos
      every man who her-saw to leave said to Mary that made mistake
      every man who saw her leave told Mary that she made a mistake

One other solution would be to assume that the verb creates the clitic node as unfixed. This is compatible with the surface form of the verb string since the clitic string precedes

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him-ACC saw-I the-ACC John-ACC to come-3rd-Sing back yesterday evening and him said-I to come to us see-he
I saw John coming back yesterday and I told him to come and see us.

the predicate and therefore at the time the clitic is processed the predicate word has not appeared yet. The node that was decorated by the clitic will get the pointer back as the regular processes of update attempt to provide it with a proper node address at a later stage of the parsing process (see the 'normal form constraint' Kempson et.al (2001) ch 9). Thus it will get the chance to be substituted by a contextually available Formula value while the pointer remains there during the positional update:

(96). Preliminary lexical entry for *tin-idhe* (= saw-her, tense omitted)

IF   {?Ty(t), ◊}

THEN   make(< ↓• >); go(< ↓• >); put(?∃xTn(x), Ty(e), Fo(V), ?∃x(Fo(x), ?<↑₀> Ty(e → t));
              go(< ↑•>); make (<↓₁>); go(<↓₁>); put(?Ty(e → t));
              make (<↓₁>); go(<↓₁>); put(Fo(Saw), Ty(e → (e → t), [↓] ⊥));
              go(<↑₁>); make(<↓₀>); go(<↓₀>); put(?Ty(e), ?∃x(Fo(x)));   }*object*
              go(<↑₀>); go(<↑₁>); make(<↓₀>); put(Fo(U), Ty(e), ?∃x(Fo(x)));   }*subject*

ELSE   **ABORT**

The clitic as decorating an unfixed node will solve the problem of the update of the meta-variable after the Subject has been processed when there is no linguistic input at the peripheries. For the reconstruction effects, (94), we still have no solution other than special provisions regarding the possibilities of partial update of Formula values during attempts to update nodes in terms of their tree-node address (see Cann et al. 2001b). For the cataphora phenomena shown in (95) and (88) only a more abstract co-reference solution seems available. Thus it is not obvious whether restriction of Substitution by pointer movement has any clear benefits for the analysis of the interaction of word order and the presence of clitics. For further suggestions we proceed with examining verbs not carrying clitic affixes and the consequences that a restricted Substitution operation will effect.

4.a.2.b.   The lexical entries for verbs without clitics and Substitution

Whichever of the two solutions regarding clitic-verbs is adopted, notice that in both the above lexical entries the pointer ends up at the Subject node. This is because we assume that there is an expectation for the Subject position to be developed after the verb has been processed, either by the process of Merge or by Substitution of some value provided by the (linguistic or non-linguistic) context. But now an issue arises if, as it seems desirable, the same an analysis is adopted for verbs which do not carry a clitic morpheme. Consider such a lexical entry for a verb without a clitic morpheme[14]:

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[14] Notice that we still need to insert meta-variables on the Object node since, as we said above, the imposition of simply requirements will have to be handled by a default like 'move the pointer to the lowest open node' and so predict a rigid order of the IO and DO post-verbally, something which is not the case in MG. There are other solutions like disjunctive lexical entries but these have to be preliminary rejected on simplicity grounds. On the other hand, if we insert meta-variables with a restricted Substitution we can attempt to enforce their update by overt lexical input.

(97). Preliminary lexical entry for *idhe* (= saw, tense omitted)

IF $\{?Ty(t), \Diamond\}$

THEN make $(<\downarrow_1>)$; go$(<\downarrow_1>)$; put$(?Ty (e \rightarrow t))$;

make $(<\downarrow_1>)$; go$(<\downarrow_1>)$; put$(Fo(Idhe), Ty(e \rightarrow (e \rightarrow t), [\downarrow] \perp))$;

go$(<\uparrow_1>)$; make$(<\downarrow_0>)$; go$(<\downarrow_0>)$; put$(Fo(V), Ty(e), ?\exists x(Fo(x)))$;   }*object*

go$(<\uparrow_0>)$; make$(<\downarrow_0>)$; go$(<\downarrow_0>)$; put$(Fo(U), Ty(e), ?\exists x(Fo(x)))$.   }*subject*

ELSE   ABORT

After constructing the Object node and putting there a meta-variable and a requirement for some formula value to be provided later the pointer moves to the Subject node perhaps by parsing the agreement morpheme which always follows the verb and supplies the meta-variable for the Subject. The Subject node can be expanded either by the rule of Substitution with a value supplied from the context or by merging an unfixed node on the left or on the right periphery. The Object, on the other hand, can only be finished off by merging an unfixed node from the left or the right because, according to what we said above about Substitution, the pointer has been moved away and a value from the context for the node cannot be provided. This, indeed, will force a value to be provided for the Object by a node unfixed either on the left or on the right, similarly to what happens with expletive pronouns in English. This is a nice consequence of the assumption that Substitution is indeed constrained by the presence of the pointer on a node since, otherwise, there is no way to force the presence of a linguistically realised Object in the absence of a clitic pronoun.

Nevertheless, in case we want to allow Substitution to apply freely, a more drastic solution to the problem of updating the meta-variable would be to assume that, in fact, there is no need to force it by means of overt lexical input. This is equivalent to saying that MG is Object-*pro-drop* too, a claim for which there is some limited amount of evidence in the literature: Joseph & Philippaki (1987) point out that for Direct Object nominals which are indefinite and non-specific there is the possibility of deletion anaphora[15]:

(98). xriastika gramatosimo ala den vrika
   needed-1st-Sing stamp-ACC but not found-1st-Sing
   I needed a stamp but didn't find one

(99). Ithela na paro ena spiti konta sti thalassa ala den vrika
   wanted-1st-Sing to buy-1st-Sing a house-ACC near the sea but not found-1st-Sing
   I wanted to buy a house near the sea but I didn't find one

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[15] However, definite or specific Objects can never be deleted anaphorically:
   (i)   *xriastika to ble gramatosimo ala den vrika
      needed-1st-Sing the blue stamp-ACC but not found-1st-Sing
      I needed a blue stamp but didn't find one
In such cases, an overt anaphoric pronoun must appear.

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In the same vein, Dimitriadis (1994a, b) and Giannakidou & Merchant (1997) explore the phenomenon they name *Indefinite Object Drop* in MG. Dimitriadis observes that an indefinite object in MG can be dropped when it is obvious from the context what is meant:

(100). Question: - Foras yialia?
       Do you wear glasses?

    Answer: -Forao
            wear.1st-Sing
            I wear (glasses).

(101). Question: - Vrikate isitiria gia tin tenia?
       Answer: -ne, boresame na bume giati vrikame
       Question: Did you find tickets for the film?
       Answer: -Yes we could get in because we found

Giannakidou& Merchant (1997) observe that when a yes/no question contains a weak DP (see (102) below) then the answer cannot refer back to this DP by means of a clitic since, in their opinion, clitics can refer only to strong referential DPs as the ones in (103) where the omission of the clitic renders the answer ungrammatical:

(102). Question: Efere o Yianis merika vivlia?   Did John bring several books?
                              kapia   some
                              liga   a few
                              deka   ten
                              tulaxiston tria   at least three
                              parapano apo tria   more than three
                              tipota   any
                              Ø   Ø

        Answer A: -*Ne ta efere
                     yes, them brought.3rd-Sing
        Answer B: -Ne efere
                     Yes, brought.3rd-Sing

(103). Question: Efere o Yianis ola   ta vivlia?   Did John bring all the books?
                              ke ta dio   both
                              ta perissotera   most
                              kathe vivlio   every book
                              to kathe vivlio   each book

        Answer A: -Ne ta efere
                     yes, them brought.3rd-Sing
        Answer B: -*Ne efere
                     Yes, brought.3rd-Sing
                     Yes he brought them

I cannot be certain as of their judgements regarding the *obligatory* exclusion of the clitic in answers to questions like (102) above but, certainly, the omission of the clitic is *possible* in these environments (moreover, it is indeed required when the indefinite is not accompanied by a determiner in the question). Giannakidou & Merchant propose that

MG possesses a null indefinite pronominal *pro* which has a semantics similar to the English indefinite 'one'. This *pro* must be distinguished from the definite *pro* which occurs in Subject position (which is referential or generic) although the indefinite *pro* can also appear in Subject position too. However, instead of multiplying the number of invisible categories, a simpler solution can be offered in the present framework if we assume that indeed MG could be characterised as Object *pro-drop* too and that contextually salient Objects do not require linguistic signalling. In this respect, consider the following Imperatives:

(104). (throwing the ball to somebody:)
    -Piase
    Catch (it)

(105). (to somebody who's holding a chocolate:)
    -Dose mou ki emena
    give me and me
    Give (some) to me too

(106). (showing a strange building:)
    -kita
    look
    look (at it)

It seems from the above that when the referent of an Object argument is very salient in the discourse environment then the lexical realisation of it can be cancelled. Nevertheless, one cannot claim that this is conclusive evidence for Object *pro-drop* because there are cases even in English where both salient Subjects and Objects can be dropped in restricted discourse conditions (diary entries, casual style in narratives, recipes, instructions etc. see Ariel 1990):

(107). Woke up with a headache this morning...

(108). gone to the shops

(109). Handle with care

(110). Mix thoroughly

If we want to preclude the possibility of characterising English as *pro-drop* by offering alternative characterisations of the above data we might use the same means to explain the MG Object *pro-drop* evidence too. Nevertheless, the qualitative properties of the omitted arguments seem to be different in both languages, a fact which could indicate that a syntactic solution might be preferable to a general pragmatic one. Whether grammaticalised *pro-drop* is the right approach is not clear to me at this point and it is an issue that has to await further research. For our purposes what is relevant though is that from a technical point of view, the possibility of analysing MG as Object *pro-drop*, if it can be substantiated, would allow us to keep Substitution as applying freely, that is, not being restricted by pointer movement.

4.b. A more radical alternative: the free word order solution

The above are all options which can be pursued in attempting to account for word order in MG with the means that have been developed primarily for strict word order languages like English. They presuppose that, similar to languages like English, MG makes some use of word order for the signalling of grammatical functions albeit with a rather more freer use of displacement mechanisms (this is because even without Introduction and Prediction there are expectations built into the system and the lexical entries that the input should occur in a certain order). In this connection, note too that even though the same characterisation as annotating unfixed nodes has been applied both to English and MG dislocated phrases, nevertheless, the amount of underspecification displayed in the two languages is not the same. Whereas in English an 'unfixed' node is genuinely unfixed, that is, positionally unspecified, in MG the place that this node will occupy on the tree is known at the time of its processing because of the clear and indispensable case marking[16]. (Moreover, unlike Japanese, island violations are generally not permitted in MG and therefore there is no radical uncertainty as to where in the tree a node will end up). Thus, if we take seriously the traditional characterisation of MG as a 'free word-order' language and also take into account the overt case marking of nominals another, simpler, solution to the word order puzzles we faced above suggests itself. Since DPs in MG are clearly and distinctly case-marked it could be proposed that those too have a trigger of ?Ty(t) like the verb above. Under this analysis the lexical entry for DPs must contain instructions to build locally unfixed nodes from the root ?Ty(t) node. These nodes will finally merge with the canonical argument positions whether those are occupied with some meta-variable (supplied by a clitic or agreement morpheme) or not. Under this assumption, the verb-actions will firstly construct the Subject node and deposit a meta-variable there (which can be identified from context) thus accounting for Subject *pro-drop*. They will then construct the Object nodes and place requirements there for objects of Ty(e) and no Formula values except if the verb carries clitic morphemes. The pointer will subsequently move back to the top ?Ty(t) node ready for the processing of DPs that would follow at the right periphery or for the merging of unfixed DPs that have preceded the construction of the verb frame[17]. In continuing the parse if there is further lexical input, more unfixed nodes will be constructed. When the processing of lexical input has been completed the pointer by default moves to the lower open node where it will start the Merging process according to the compatibility of Case

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[16] This indicates that less processing costs will be incurred in MG than in English by the employment of such nodes and it is reasonable to expect that more extensive use of them will be made in the former language.

[17] In fact, alternatively, repeated application of the *Adjunction rule could provide nodes for the processing of all DPs. Notice that for MG we do not need to require that *Adjunction on the right has to apply when a Ty(t) complete object has been constructed since, now, all arguments will be processed as unfixed. The choice between the computational or lexical actions for the construction of unfixed nodes will also depend on implementational grounds since the latter, arguably, will achieve more efficient computation.

induced requirements and tree positions. Note that despite appearances this approach does not discard pointer movement even if its usefulness in the construction of the predicate frame is limited. Strict word order phenomena in MG, like the inseparability of a preposition from its Object or of the determiner from the noun etc., must be handled by the movement of the pointer. This approach is also neutral regarding the constraints on the Substitution operation. However, the spirit of the proposal is more in support of allowing Substitution to apply freely since now all of the alleged evidence from MG in support of restrictions on it are removed.

Evidently, if such a radical analysis is to be adopted here there is a need to respond to the arguments that have been advanced by most researchers regarding the rigid clause structure of MG in the mould of strongly configurational languages like English. One should mention here the possibility, noted by Catsimali (1990), that the historical change from Ancient Greek to Modern Greek exemplifies an advancement from a non-configurational free word order language towards rigidification in the service of providing for the signalling of grammatical functions. For example, unlike Ancient Greek which was flexibly OV, MG is VO, Objects of prepositions are invariably placed immediately after the P head in MG, unlike Ancient Greek which had freer distribution etc. It could be assumed that the evidence reported below regarding the markedness of structures where some argument seem to be displaced could be attributed to this transitional phase of the language and the acceptability intuitions of speakers can be explained in this way if one took a functionalist point of view. Nevertheless, it is, I think, widely accepted that a formalism should provide the explanatory means for the synchronic analysis of a language independently of the particular historical point of its development since speakers/hearers who learn and use this language are not necessarily aware of historical stages. On the other hand though, if we require that the formalism is explanatory, that is, it appropriately models the actual mental capacity of the user of one of the possible human languages, then it should incorporate the means to account for historical change in a natural way. In this respect, we would like the formal framework proposed to be able both to express accurately the grammar in the mind of an idealised speaker/hearer at a particular stage but also to provide suggestions of how reanalysis of the structures proposed by language users leads to progression towards a different grammar. At least in the case of MG, DS is capable of providing this suggestions because of (a) the predicted ambiguity of strings with respect to the logical form constructed (unfixed or LINKed nodes), discussed below, and (b) the fact that minute changes in the instructions provided by the lexical entries can have cascading effects (e.g. loss of pro-drop properties can lead to the development of clitic pronouns, expletives etc.). Moreover, in general terms, underspecification of structure with respect to interpretation is more conducive to change than rigid templates, postulated as internalised and innate. In terms of theory construction, as will be discussed below in section 5, it has been pointed out many times that sources of confirmation for the truth of a linguistic theory proposed can originate from any source that can be shown relevant and not just by the structural analyses proposed. Successful modelling of historical change is therefore one of those factors that will contribute to the choice among theories, despite standard Saussurian concerns with synchronic analysis.

Therefore the spirit of the proposed alternatives below will not be to deny that there are indeed strong preferences governing choices of expression in actual discourse but rather to provide the formal tools for setting out the complete set of choices available to the language user. Otherwise all observed deviations from what the formalism dictates as grammatical, however marked, will have to be attributed to performance considerations or errors, a methodology too restrictive for explaining uniformities in the occurrences of these data in similar environments.

We proceed to examine the evidence advanced in the Minimalist literature on MG which seem to establish rigid clause structure and how a contrasting DS approach can account for them.

4.c. The phenomena accommodated under *Adjunction: Wh-movement, Focus movement, Topicalisation, CLLD.

The P&P treatment of MG syntax presupposes that MG shares a similar clause structure with other languages in that it includes one Focus position on the left periphery and recursive Topic positions above it. These claims are based on data that purport to show that only one DP per clause can be fronted leaving a gap in its base position whereas several phrases can be dislocated and be associated with clitics clause internally. The assumption regarding the fronting of just one phrase seems well founded for English and in DS it is analysed by the rule of *Adjunction restricted by definition to apply only once from a node with an empty surrounding context. A similar proposal for MG has been made by Tsiplakou (1998). However, I will attempt to show below that there are reasons that lead to the conclusion that recursive applications of the *Adjunction rule are needed for MG both on the left and the right periphery (especially, of course, if we assume that the verbs in MG involve a condition ?Ty(t)).

The evidence that *Adjunction should apply recursively

First of all, the order OSV which several authors have considered as ungrammatical has been shown in several corpus and experimental studies not to be so. For example, in the Tzanidaki (1996) corpus analysis it is established that the OSV order has to be generated by the grammar and that its presence cannot be attributed to performance error (see also Laskaratou 1989). Keller & Alexopoulou (2000)' s experimental results report the same conclusion. Moreover, the same holds for the SOV order which, in fact, is an acceptable pattern in all analyses. Additionally, in my view, orders like SIOOV do not sound ungrammatical:

(111). i Maria tu Yiani ena KOKINO vivlio edose xthes
the Mary.NOM the John.GEN a RED book.ACC gave-3rd-Sing yesterday
Mary gave John a RED book yesterday

Since DS seeks to extend the data-base accounted for, the systematic appearance of such data cannot be ignored as of reduced grammaticality.

Secondly, quantifiers can easily appear before a dislocated Object clause initially. It does not seem plausible to assume that these quantifiers occupy a LINKed tree, as they would have to be if just one unfixed node was allowed pre-verbally:

(112). Kathe vivlio TU YIANNI tha dosi i Maria
every book.ACC THE JOHN.GEN will give.3rd-Sing the Mary.NOM
Mary will give every book to JOHN

(113). Liga vivlia TU YIANNI tha dosi i Maria
few books.ACC THE JOHN.GEN will give.3rd-Sing the Mary.NOM
Mary will give few books to JOHN

From the above the conclusion emerges that, even without taking into account the contribution of clitics in the clause, we need several unfixed nodes at the left periphery. Additional corroborating evidence is provided by Relative Clauses, which we will assume involve an unfixed node contributed by the relative pronoun appearing clause initially. But in these cases too, a Subject or some other fronted phrase can appear in second position before the verb:

(114). O Yianis, pu i Maria ton vlepi ke feugi...
the John, that the Mary him sees-she and leaves-she
John who Mary sees and leaves...

(115). O Yianis, pu tin psichi tis tu edose i Maria...
the John that the soul her him gave-she the Mary
John who Mary gave him her soul...

(116). O Yianis, pu xtes to vradi sinantise ti Maria...
the John, that yesterday the evening met-he the Mary
John who met Mary yesterday evening...

(117). pion i Ana (ton) kani parea ine diki tis ipothesi
whom the Ana.NOM (him.CL) makes company is her own affair
Whom Anna hangs out with is her own affair   (from Androulakis 1998: 145)

(118). sixenome ton tipo ton opio i Ana (ton) kani parea
despise-I the guy the whom the Anna.NOM (him.CL) makes company
I despise the guy whom Anna hangs out with   (from Androulakis1998: 145)

(119). i gineka i opia ton Petro ton agapa den ton prodidi pote
the woman the who the Peter him loves-she not him betrays-she never
the woman who loves Peter never betrays him   (from Androulakis 1998: 142)

I conclude from the above that, even without taking into account the proposal below that CLLD should be analysed as involving unfixed nodes, there is clear evidence that we should allow for several unfixed nodes contributed by material from the left periphery of the MG clause. In fact, even for English the restriction to one unfixed node occurring before the verb is processed seems arbitrary especially if the following data from Culicover (1996) are admitted as acceptable (as they should be given the liberality regarding the data proclaimed by DS):

(120). I stress that if you call, whatever I find I will keep

(121). Terry mentioned that on Sundays, all of the promises that you make you have to keep

(122). I suggest that on your vacation the beers that you drink you should keep a record of.

(123). ? I stress that whatever you find, if you call, I will keep

(124). ? Terry mentioned that all the promises that you make, on Sundays you have to keep

(125). ? I suggest that the different beers that you drink, on your vacation you should keep a record of.

(126). the man to whom liberty we would never grant

(127). To that man, liberty we would never grant

(128). They told me that to that man, liberty they would never grant

(129). Liberty, to that man we would never grant

(130). They told me that liberty, to that man they would never grant

Given the above conclusions, I will proceed to examine the different uses of *Adjunction that appear in MG. I will attempt to show that all the phenomena that have been argued to involve different construction types can now be structurally accommodated under this single rule given the dynamic approach to structure building. This will highlight the fact that the syntactic component can be liberated from the burden of accounting for the different discourse effects and instead be allowed to deliver underspecified structures which general pragmatic/inferential processes can exploit for different uses.

4.c.1. Wh-Movement

The rules of *Adjunction and Merge can be utilised to provide a description of *wh*-questions in MG. *Wh*-questions are characteristically signalled by the presence of a *wh*-phrase appearing early in the clausal sequence (obligatorily before the verb in MG). In these cases we can assume that the rule of *Adjunction first introduces a node with an unfixed address requiring input of Ty(e) and moves the pointer there. The processing of the *wh*-word, being of type e, subsequently will provide this input. *Wh*-expressions, when in such an unfixed position, annotate the node with Fo(WH) which is a special type of meta-variable not requiring update in the same structure. This takes the place of the quantificational accounts for *wh*-questions. The wh-phrase will also annotate the dominating node requiring Ty(t) with the clause-typing formula Cat(Q) thus identifying it as a question. If the *wh*-expression is found in-situ, as in double *wh*-questions in MG, then it simply provides an annotation Fo(WH) on a fixed node. For MG, where *wh*-expressions are case marked we also need to take the relevant case specification as a requirement for the *wh*-expression to be dominated by a node that satisfies certain type specifications. The relevant (abbreviated) lexical entry for *pjon*, the accusative *wh*-expression, is given below:

(131). *Lexical Entry for* pjon (= whom)

IF	{?Ty(e)}	
THEN	IF	{< ↑• > ?Ty(t)}
	THEN	put(Fo(WH), Ty(e), ?< ↑₀> Ty(e → t), [↓]⊥);
		go(<↑•>); put(Cat(Q))
	ELSE	put(Fo(WH), Ty(e), ?< ↑₀> Ty(e → t), [↓]⊥)
ELSE	ABORT	

One of the most convincing arguments regarding the rigidity of the MG clause is the verb-second phenomenon claimed to be triggered by *wh*-movement: according to Tsimpli's (1995) claim, a fronted *wh*-phrase must be immediately followed by the verb. This strict adjacency requirement is treated by the *wh*-criterion which enforces movement of the verb to the head of the phrase hosting the moved *wh*-DP. This stipulation is incompatible with the assumption above that there is no "theoretical" limit as to how many nodes can appear unfixed before the verb because the alleged adjacency can only be achieved in the present framework by allowing just one unfixed node in the left periphery. In this connection, notice that there is evidence in the literature that this alleged adjacency requirement is simply a preference which can be nulled in environments where factors like the length of the sentence or the type of argument displaced are altered. Consider the following:

(132). Posa apo ta abstracts i epitropi tu GLOW (ta) aperipse omophona?
how-many of the abstracts the committee the Glow (them-$_{CL}$) rejected unanimously
How many of the Glow abstracts did the GLOW committee reject unanimously?
(from Anagnostopoulou 1994, ex. (47))

(133). giati i Maria apofasise na figi?
why the Mary decided to leave
Why did Mary decide to leave?

(134). me pion i Maria apofasise na figi?
with whom the Mary decided to leave
With whom did Mery decide to leave

(135). pjo pedi o Nikolis (to) agapai?
which child the Nikolis (it-$_{CL}$) loves-he
Which child does Nikolis love?   (from Androulakis 1998: 142)

(136). pio pedi to vivlio to agorase?
which child the book it-$_{CL}$ bought-he
Which child bought the book?

(137). pios ton Nikoli (ton) agapai?
who the Nikolis (him-$_{CL}$) loves-he
Who loves Nikolis?   (from Androulakis 1998: 142)

The acceptability of such examples indicates that the verb appearing in second position after *wh*-words must be only a preference in MG and not an absolute requirement. Therefore it is reasonable that we should not disallow the framework to

provide for more than one unfixed nodes processed before the verb. The verb-second requirement, mainly observed in root *wh*-questions (especially short ones), has to be considered as a pragmatic or processing requirement which can be cancelled under different conditions. Given this conclusion, there is a minor adjustment that needs to be made to the *Adjunction rule presented above for English in order to adapt it for MG. The stipulation that the rule applies when the context is empty has to be removed and instead the rule will just specify that there is no restriction as to which point it will apply as long as the pointer is at the root node. Note also that for MG we will not need a different variant of the rule to apply for material at the right periphery. Moreover, if we adopt the proposal above that all lexical actions in MG have triggers of $?Ty(t)$ and decorate unfixed nodes initiated from the root, then the rule could become redundant since lexical actions could build the relevant nodes. Alternatively, general application of the *Adjunction rule can be retained even under that solution and the lexical actions associated with DPs can retain $?Ty(e)$ condition. For simplicity here we will persevere with the latter orthodox approach keeping track of the alternatives where relevant:

(138). * *Adjunction for MG*

$$\frac{\{...\{Tn(a),...\ ?Ty(t), \Diamond\}\ ...\}}{\{...\{Tn(a),...?Ty(t)\}, \{<\uparrow_*>Tn(a),..., ?\exists xTn(x), ?Ty(e), \Diamond\}...\}}$$

Except *wh*-movement, this rule will also cover both Focus and Topicalisation constructions despite their different semantic/discourse effects. In that I follow the suggestion of Alexopoulou (1999) who assumes that such discourse functions of syntactic constructions in MG are disambiguated by intonation and not word order or syntactic hierarchical position.

4.c.2. Focus Movement and Topicalisation

Accordingly, the same mechanism of *Adjunction and Merge can be exploited to deal with what Tsimpli analyses as *focus constructions* and the phenomenon of *Topicalisation* (Alexopoulou 1999) as follows: The rule will apply initially and this time the lexical input will be a regular (non-*wh*) DP which will decorate the unfixed node and require a specified address at some later point in the parse. The case specification on the DP will be expressed as a requirement for the eventual dominating node to be of the appropriate type. The discourse function of the fronted constituent as (contrastively) focused or (contrastively) topicalised will be disambiguated by attraction of the main stress of the sentence (*nuclear accent*) or not.

Here, once more, the problem arises of whether the formalism has to ensure that a phrase which will annotate an unfixed node at the left periphery must be directly followed by the verb, as Tsimpli (1995) claims. The picture is similar as the previous one as there is debate in the literature (see, e.g. Tzanidaki 1996) as to whether such a requirement exists or not. According to my judgements, the following are acceptable

although, admittedly, focus-verb adjacency produces better results especially with shorter sentences:

(139). STO GIANNI to vivlio   to edose   i Maria
        TO JOHN$_{-acc}$ the$_{-acc}$ book$_{-acc}$ it$_{-Cl-acc}$ gave the$_{-nom}$ Mary$_{-nom}$
        It was to John that Mary gave the book

(140). TO VIVLIO sto Gianni   edose   i Maria
        THE BOOK$_{-acc}$ to John$_{-acc}$ gave the$_{-nom}$ Mary$_{-nom}$
        It was the book that Mary gave to John

(141). TI MARIA o Petros ide sto sinema
        THE MARY the John saw in-the cinema
        John saw MARY at the cinema   (from Alexopoulou (1999)

Regarding the better results that focus-verb adjacency produces, Alexopoulou (1999) claims that this preference can be explained indirectly if one assumes that the order of constituents in MG is regulated by discourse and not syntactic constraints. She proposes that in MG (and other languages) the linear order of discourse items is as follows:

(142). LINK < FOCUS < TAIL

LINK[18] is roughly a topicalised constituent which indicates where in the discourse model the information update should occur (in more recent versions links are taken to impose conditions on discourse referents, see Hendriks & Dekker 1996, Alexopoulou & Kolliakou 2000). FOCUS is new or contrastive information regarding the topic (link) and TAIL is a constituent that indicates that the new information should contribute by modifying an existing condition in the link's file-card. (142) above expressed as a constraint in word order patterns in MG requires that topicalised elements precede focused ones and, therefore, by default contrastively focused elements will be nearer to the verb than elements construed as given/topic information. The constraint is not an arbitrary stipulation but is related to notions like 'back'- and 'fore-grounding' in Relevance Theory (see Sperber & Wilson 1995) and elsewhere: backgrounded elements are those which set the context within which foregrounded elements are to be processed whereas foregrounded elements are those which give rise to contextual effects. Placing backgrounded elements earlier in the sentence facilitates processing by making available a context to which the foregrounded part of the sentence is anchored (see also the functionalists' *given before new* principle). The reverse state of affairs is also predicted though if the extra processing effort could be justified by means of guaranteeing extra effects for the hearer. Alexopoulou attributes the verb-second preference both with focused and *wh*-constituents to the above discourse constraint[19]. But, as she points out, discourse constraints differ from syntactic ones in that the former can be overridden. For example, even though focused constituents are usually fronted according to the discourse constraint above, heavy ones can be shifted to the right edge of the clause even if focused:

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[18] the discourse term LINK here should not be confused with the structural notion of a LINKed tree in the Dynamic Syntax framework
[19] see Alexopoulou & Kolliakou 2000 for a more accurate formulation in HPSG and DRT terms.

(143). [G Tis ipe tis Marias] [F oti tha ti di sto SINEMA]
    [her told the Mary] [that will her see in the CINEMA]
    He told Mary that he will see her in the cinema

Here a focused constituent follows ground information because the focus constituent is heavy. In this respect, Hawkins (1994) formulates a parsing condition that requires that languages order constituents in such a way that recognition of constituents by the parser is available as soon as possible. This has the effect that, universally, heavy constituents are pushed towards the end of the sentence since their parsing delays the recognition of the other constituents present in the clause. It follows from the above that the interaction of processing requirements and discourse considerations can effect variable ordering patterns especially in languages where word order is not utilised as the primary means of indicating grammatical functions. A formalism therefore must provide the means for accounting for these ordering possibilities required by other components of language use without resorting to characterising the relevant sentences as "ungrammatical" or to be accounted for in a separate 'stylistic' or other component.

Despite claims in Tsimpli (1995), Alexopoulou (1999) shows that constructions with a left dislocated phrase and a "gap" in the argument position do not necessarily receive a contrastive-focus interpretation in MG. In fact, the interpretation assigned to them can also be a type of 'given' or presupposed information analogous to that found in the Topicalisation construction in English. These data are difficult to accommodate under Tsimpli's analysis which presupposes an isomorphic relation between discourse/semantic function and syntactic analysis (although in previous work she has characterised them as CLLD phenomena which in turn is inconsistent with Anagnostopoulou (1997)'s analysis since they do not involve a clitic in argument position). On the other hand, the DS characterisation in terms of unfixed nodes and update in an argument position captures these facts without problems since this approach does not require a deterministic correlation between position and interpretation. The common distinctive properties of all such constructions noted by Alexopoulou (1999) and Alexopoulou & Kolliakou (2000), that is, unboundedness and island sensitivity can be handled, as in English, with allowing the unfixed node to find an address update only through the daughter tree-relation (the *local* tree environment) and not across a LINK transition (the *global* tree). Note, however, that in order to maintain the explanatory force of this account and not appear to resort to a descriptive stipulation we have to assume that all and only *Adjunction rules are so restricted, at least within the description of one language. This is the method that will be followed here and for this reason CLLD, which also displays the same properties, will also be subsumed under *Adjunction as I argue below.

4.c.3. Clitic Left Dislocation (CLLD)

The CLLD phenomenon as analysed by Anagnostopoulou (1997) has to be accommodated under the *Adjunction analysis too since it also displays unboundedness

and (selective[20]) island sensitivity. Additional clues pointing towards such an analysis are provided by the obligatory case matching of the left dislocated phrase and the clitic and also the lack of intonational break between the dislocated phrase and the main clause. Both these indications point to the fact that the node at the left periphery has to be merged with the rest of the structure. An alternative to this analysis, which has been proposed in the context of DS, would be to treat CLLDed constituents as LINK structures. However, the presence of quantifiers and *wh*-phrases in such positions is counterevidence for such an analysis:

(144). Polus/Merikus anthropus tus vlepis ke xerese
many/some people them see-you and pleased-you
Many/Some people you just see them and you become happy

(145). kanena den ton agapai i pethera tu
nobody not him loves-she the mother-in-law his
Nobody does his mother-in-law love

(146). pia pedia (ta) maloses?
which children (them) punished-you
Which children did you punish?

Moreover, the fact that CLLD, unlike HTLD, is not an exclusively root clause phenomenon also point to the fact that the LINK solution is not appropriate. Consequently, in this case too, we will take the left dislocated phrase to be processed as an unfixed node and later merging with some argument node created by the verb. The first problem that arises is the treatment of the clitics duplicating the dislocated DPs. As we said above there is plenty of evidence in MG that such clitics are affixes and we will adopt this analysis here. In parallel with the Subject-agreement morpheme we will take such clitic affixes to decorate the Object node with a meta-variable to be substituted either by anaphoric resolution or by the processes of Merge following linguistic input from the peripheries. In this respect, it seems necessary to assume that the tree nodes occupied by such meta-variables can be expanded further in order to accommodate dislocated phrases. Kempson & Meyer-Viol (2000) suggest that such resumptive clitics must have lost (or being in the process of losing) their bottom restriction and can therefore be updated by an unfixed node. This claim is certainly corroborated by the fact that a strong tonic pronoun or epithet cannot appear instead of the clitic in these structures[21]:

(147). ipe ot ti Maria (*aftin) sinantisa (* aftin) chtes   CLLD
said that the Mary (*her) met (*her) yesterday
He said that I met Mary yesterday

In contrast to CLLD, in HTLD and focus structures the strong tonic pronoun is possible. HTLDed phrases will be analysed below as involving a LINK relation with the main tree

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and therefore the node decorated by the pronoun and that annotated by the dislocated phrase do not have to merge. Focus constructions like (149)-(150) involve unfixed nodes which, in the cases below, are decorated by the focused pronouns:

(148). ti Maria #   (aftin)   tin   sinantisa   chthes   (aftin)... HTLD
the-ACC Mary-ACC (her-FEM-ACC) her-CL-FEM-ACC met-1st-Sing-Past yesterday   (her-FEM-ACC)
as for Mary, I met her yesterday (whereas John, I didn't see him at all))

(149). sinantisa   AFTIN   chthes   Focus
met-1st-Sing-Past her-FEM-ACC(deictic) yesterday

(150). AFTIN   sinantisa chthes   Focus
her-FEM-ACC(deictic) met-1st-Sing-Past   yesterday
It was her that I met yesterday

This clearly indicates that clitic pronouns are different from regular DPs, like strong pronouns and epithets, which are required to provide a bottom restriction and thus would prevent Merge of a node produced by another DP in the position they occupy. One could attribute this idiosyncrasy of the MG clitic pronouns to the fact that such pronominals are on their way to becoming proper agreement morphemes and, in fact, there is evidence that such a process is on its way at least for the Dative clitics (see Anagnostopoulou 1994). Notice now how this approach to CLLD solves in an elegant way "Cinque's Paradox", namely, the fact that CLLDed phrases display movement properties when, apparently, they are base-generated: it is idiosyncratic properties of the clitic pronouns in the language and their interaction with a principled distinction between dominated and LINKed nodes that causes the apparent paradox.

We turn now to address certain data that purport to show that the constructions examined so far, wh-movement, Focus movement, Topicalisation, and CLLD, display distinct properties and therefore cannot receive similar structural analyses.

4.c.4. Similarities and Differences among constructions

The assumption in the literature is that whereas only one focus phrase can appear in the clause, the number of clitic left dislocated phrases is "theoretically" unlimited (see, e.g., Cinque 1990). This would have raised a problem here if we had required that only one application of *Adjunction can occur per clause in MG as in English (as we said above this might have been proposed as a solution to the apparently obligatory adjacency of the verb with the focused or wh-phrase). But then we would have no explanation for how more than one CLLD phrases can appear clause initially, or, indeed, how any CLLD phrase can appear at all in the same clause preceding a wh- or a focused phrase (which is a grammatical option for MG). However, since this is a parsing model we could claim that, in fact the options are "theoretically" limited, that is, technically, the framework provides the means to specify exactly as many unfixed nodes as are observed in the data. This though does not seem to be a satisfactory solution from a theoretical point of view. The main problem facing a claim regarding an upper bound on the number of unfixed nodes would be the treatment of adjuncts, which can be unlimited and 'dislocated' freely,

but since at the moment there is no satisfactory solution to their analysis we can ignore them. Disregarding adjuncts, the crucial case appears to be a ditransitive verb where the Subject and the two Objects all appear in the left-periphery, which is, indeed, a structure of marginal acceptability. If one wishes to maintain the restriction of unfixed nodes to one, we could take the first node as in a LINK relation to the main structure and the rest as unfixed. In principle we can generate any number of LINK nodes in the periphery but the fact that quantifiers can appear in the first position followed by the rest makes the analysis of those as LINKed unlikely. It seems therefore that there are good reasons to maintain that application of the *Adjunction rule should not be restricted by the formalism itself. The degraded status of structures with several fronted elements, it seems reasonable to assume, can be attributed to processing difficulty (see below).

Complications may arise for this view when we consider the interaction between *wh*- and focus constituents noted in Tsimpli (1995). According to her, we have to ensure that in main clauses either a focused or a *wh*-phrase can appear since both occurring together results to ungrammaticality.

(151). *O YIANIS pjon idhe?
      THE JOHN whom saw
      Who did JOHN see?

However, a CLLD phrase can appear together with either of them without problems. Another related difference between focus and wh-phrases concerns the possibility of multiple *wh*-phrases in interrogatives and the general unavailability of multiple foci (again if we accept Tsimpli's judgements, but see also Tsiplakou 1998):

(152). Pjos agorase ti gia pjon?
      who bought what for whom
      who bought what for whom?

(153). *TA VIVLIA agorase gia ti MARIA
      THE BOOKS bought for THE MARY
      he bought BOOKS for MARIA

In MG, as in English, there is debate in the literature as to whether multiple foci are allowed in one sentence or not (see Kolliakou & Alexopoulou 2000, Tsimpli 1990, 1995). In a previous paper I had attributed the uncertainty to focal stress restrictions which is an issue to be treated not in terms of syntactic structure but, rather, in terms of pragmatic/discourse considerations. This suggestion is corroborated in Alexopoulou (1999) who claims that even though MG allows two accents in one sentence, one of them must be perceived to be weaker than the other and therefore both accented elements cannot be taken as associated with recursive foci. She also points out that embedded clauses do not possess their own Information Structure but, rather, the whole utterance has a single Ground-Focus partition (in Valduvi's 1992 terms). This, in her view, indicates that the syntactic recursive structure of the sentence must be dissociated from the Information Structure. Consequently, one option here is to say that sentences like (151) and (153) are not structurally ungrammatical after all but that there is a pragmatic/discourse restriction which requires that only *one* constituent can be focused in an utterance: either a *wh-* which must be taken as intrinsically focused in *wh*-

interrogatives[22] (when carrying the nuclear accent and is not clitic doubled) or some other focalised DP. In this connection, notice that in embedded interrogatives a focused phrase can appear preceding the *wh*-expression (which in these cases does not have to be taken as necessarily focalised since the nuclear accent occurs elsewhere):

(154). Anarotieme O YIANIS pjon idhe
I wonder THE JOHN whom saw
I wonder who JOHN saw

Unlike Tsimpli who differentiates the structure of main and embedded clauses by postulating different discourse functional projections to account for the above, in the present analysis, ideally, we would not want to have two variants of the same rule applying to root and embedded clauses. Therefore, we can take the above data as an indication that there is no syntactic restriction excluding two 'extracted' phrases in main clauses too, only a discourse restriction banning recursive foci. This will lead us to conclude that data such as the following from Androulakis (1998) are grammatical but marginal in terms of acceptability because of this discourse violation[23]:

(155). ? o NIKOLIS pio vivlio diavase?
THE NIKOLIS which book read-he
which book did NICK read?

(156). ??PIOS PIO vivlio diavase?
WHO WHICH book read-he
who read which book?

The restriction that only one fronted focalised constituent can appear per sentence in MG might also be a constraint having to do with processing restrictions that can be nullified if required in specific discourse situations. In fact, Culicover (1996) notes that the ungrammaticality of certain instances of multiple 'extraction' like the examples (123)-(129) above may be partly due to processing factors. He claims that when two DPs are preposed and their function has to be determined by linking them to a specific syntactic position processing difficulty ensues, especially if the dependencies cross. One could even attribute the extensive use of clitic duplication with dislocated phrases in MG to the processing difficulty of retaining several nodes underspecified in terms of their addresses in working memory while building the rest of the tree. There seems to be a parallel here with the employment of clitics in Relative Clauses where, as we said above in 2.f., they are used more readily as lower one goes to the Accessibility Hierarchy.

According to Tsimpli (1995), focus and wh-phrases differ with respect to the positions in which they can be spelled out:

(157). *Agorase ti o Yianis?
bought what the John
John bought what?

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(158). Ti agorase o Yianis?
      what bought the John
      what did John buy?

(159). Ipe (TA VIVLIA) oti ksexase (TA VIVLIA) na epistrepsi (TA VIVLIA).
      said (THE BOOKS) that forgot (THE BOOKS) to return (THE BOOKS)
      He said that he forgot to return the BOOKS

It seems that in Greek, unlike English, the *wh*-in-situ strategy is not available for main *wh*-interrogative sentences when only one *wh*-phrase is involved. Indeed, unlike English (see Ginzburg & Sag 2000, Kempson et al. 2001), in MG a question with a single *wh*-element in situ can only be interpreted as an *echo* or *metalinguistic*-question[24]. On the other hand, a focused phrase can appear in any main or embedded clause-peripheral position. This seems to indicate that, contrary to the views expressed by some authors in the Principles and Parameters framework, whereas there is a grammaticalised syntactic strategy for constructing *wh*-questions in MG, focus, and Information Structure in general, is largely a matter of stressing the relevant constituent and, therefore, does not need to be handled by a separate mechanism in the syntax. This is captured in the present analysis by the fact that as we saw above, a *wh*-in situ does not provide a clause typing feature (+Q) and therefore the interpretation of the sentence as a question is not possible (this diverges from the function of this feature in English as proposed in Kempson et al 2001). On the other hand, a focus or topic feature is not needed because the disambiguation of such functions is assigned to stress, intonation and the general discourse context.

A property specific to Greek CLLD is that the dislocated DP can sometimes appear before the complementiser and also before the *wh*-expression introducing a *wh*-question:

(160). Ipe   ton Yiani oti ton agapai
      said-3rd-Sing the-acc John-acc that him-acc loves-3rd Sing
      She said that she loves John

(161). Anarotieme ton Yiani giati ton sinantise i Maria
      wonder-1st Sing the-acc John-acc why him.Cl-acc met-3rd Sing the-nom Mary-nom
      I wonder why Mary met John

(162). Rotise ton Yiani pios ton ide
      asked-3rd-Sing the-acc John-acc who-nom him-Cl-ACC saw-3rd-Sing
      she asked who saw John

One should notice that the same phenomenon also occurrs in focus constructions (see also Alexopoulou 1999). The P&P analyses of these phenomena seem to render this an accidental fact. In the present analysis, we rather take it to indicate the structural similarity between the two constructions and the requrement for the uniform treatment of both phenomena in terms of the construction of unfixed nodes.

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[24] cf Alexopoulou 1999:76 for a different view and explanation

Another issue that arises is whether we have to ensure that the focused phrase does not follow the *wh*-phrase in an embedded question but precedes it. Also that a *wh*-element does not combine with a complementiser whereas a focused phrase must. It would seem that in these cases one could take the embedded *wh*-phrase as behaving complementiser-like, which might also provide some handle for an explanation of the *doubly-filled Comp* constraint. One can suggest that since the *wh*-phrase is the one which provides the clause typing information for the clause (the feature +Q in this framework) it is reasonable to expect that a complementiser, which provides the same type of information (clause typing), becomes redundant (i.e. the doubly-filled Comp constraint in indirect questions) and that the adjacency of the *wh*-phrase and the verb is motivated by this close relationship between the head of the clause (the predicate) and the typological classification of the clause (*wh*- or not). The facts, in my view, could be approached in this way but the specifics are beyond the scope of this paper.

4.d. Right Dislocation

As we said above in section 2.b, Valiouli (1994) observes that in terms of intonation there are two types of right dislocation in MG: one type is characterised by *comma intonation* between the main clause and the dislocated constituent whereas the other has *period intonation*. Moreover, she shows that right dislocated constituents with period intonation are interpreted as *afterthoughts* which can also have the dislocated constituent bearing stress. With regard to anaphora, the kind of relation involved is not always the same: in some cases the anaphoric element in the main clause is assigned a value indexically independently of the dislocated elements, in others the dislocated full DP is necessary in order for reference to be assigned to the anaphor. In the present context, it seems reasonable to assume that dislocations characterised by period intonation and where the clitic or Subject morpheme is identified indexically from context must involve a LINK structure. On the other hand, the ones where the anaphoric element must await the following DP for its identification should be analysed by means of *Adjunction. As will be shown below in section 4e, this is parallel to what we will assume for dislocated constituents at the left periphery where we will also take intonational break and stress assignment as having a disambiguating function in distinguishing LINK from unfixed nodes structures. In the meantime, we should address claims that distinguish the clitic doubling of constituents appearing in the left or right periphery.

Iatridou (1995) and Anagnostopoulou (1994) claim that CLLD and Clitic Doubling must be distinct structural phenomena because the semantic classes that permit one or the other are different.[25] However, Androulakis (1998), claiming that they are one and same phenomenon, presents examples with clitic doubled quantifiers which show that in fact the semantic classes involved (not well defined by the above authors in any case) cannot

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[25] Additionally they claim that another distinguishing factor is the fact that there are languages that employ one and not the other, e.g. Italian. But, as Alexopoulou (1999) points out, similar facts obtain with respect to *wh*-movement: some languages allow *wh*-in situ whereas others do not. This cannot mean that *wh*-questions are distinct in each language.

be too distinct[26]. In the present analysis CLLD and Clitic Doubling are indeed similar phenomena in that the former involves *Adjunction triggered by the processing of a constituent on the left whereas the former involves *Adjunction on the right (except when LINK structures are not involved). Consequently, any interpretational differences that might be observed will have to be attributed to the distinct discourse/pragmatic factors that might lead one either to use a DP followed by a pronoun (CLLD) or a pronoun followed by a DP (the latter potentially a cataphoric effect, Clitic Doubling) or the alternative analyses as LINK structures which might obscure the data.

Regarding the clitic doubling of *wh*-phrases, it seems that now we have a mechanism to account for it in parallel terms to what is assumed for all other clitic-doubled elements. As we said, the nodes decorated by means of processing clitics pronouns bear no bottom restrictions. Therefore the unfixed node created by the *wh*-phrase can merge with such a node without further assumptions. In fact, this problematic aspect of *wh*-phenomena for approaches that analyse them as quantificational movement turns out to be a prediction of the present approach since unfixed nodes are not differentiated with respect to whether they are occupied by means of decorations contributed by *wh*-elements or not. The fact that clitic doubled *wh*-phrases require necessarily wide scope has to be related to the fact that uses of pronouns are preferable in contexts where there is a referential antecedent:

(163). Posus mathites exetase kathe kathigitis?   : ambiguous
       how-many students examined every teacher
       How many students did every teacher examine?
       a) every teacher might have examined a different set of students
       b) how many are the students such that they were examined by every teacher?

(164). Posus mathites tus exetase kathe kathigitis?   : non-ambiguous
       how-many students them.$_{CL}$ examined every teacher
       How many students did every teacher examine (them)?
       how many are the students such that they were examined by every teacher?

Again this is a parallel effect with the reported wide scope and specificity interpretation associated with CLLDed DPs. Unlike other frameworks where special provisions have to be made to accommodate clitic doubling of *wh*-phrases (see, e.g., Dobrovie-Sorin 1990) the parallelism follows from the present approach since the analyses of both phenomena are structurally identical and therefore it should not be unexpected that they are employed under similar discourse conditions.

On the other hand, a different structural analysis is attributed to left dislocated topics involving none of the above common syntactic properties noted above for *wh*-movement, Topicalisation and CLLD. The analysis of exclusively root clause phenomena that involve an intonational break between the dislocated DP and the main clause (HTLD) is presented below.

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[26] Notice, e.g., the notorious:
to pino pu ke pu ena uzaki
it drink where and where a uzo
I drink an uzo from time to time

ELENI GREGOROMICHELAKI

4.e. LINK Structures: Hanging Topic Left Dislocation and Relative Clauses

4.e.1. Hanging Topic Left Dislocation (HTLD)

The evidence presented in section 2b. above show that, in contrast to CLLD, Hanging Topic Left   Dislocation structures involve a relatively loose relation between the dislocated phrase and the rest of the sentence. Here HTLD, as also Relative Clauses analysed below, should involve the construction of a pair of LINKed trees, a claim buttressed especially from the evidence which show that these constructions do not seem sensitive to island or subjacency restrictions. According to this characterisation, the left dislocated phrase will be LINKed to the main clause which will be constructed with a requirement to contain a copy of the dislocated head NP[27]. The obligatory clitic, tonic pronoun or epithet in the main tree, construed identically with the topicalised constituent, will eventually provide this copy. There is a problem here idiosyncratic to MG HTLD constructions.   In this language case marking on all DPs is obligatory.   Even if one assumes that Nominative is some kind of default just imposing a requirement for domination by a $Ty(t)$ node or to be some kind of lack of case (although note that Nominative is not allowed to update an Object node in general),   there remains the problem of the possibility of also having Accusative (but, notably, not Genitive) DPs in HTLD positions. If the Accusative case marking on these DPs requires that the nodes decorated by their processing should eventually appear in some Object position, that requirement will never be met under the LINK analysis proposed. In such structures there is only the requirement for a copy of the Formula annotating the node to appear inside the LINKed tree and it is not standardly possible for this node to merge at some position in the LINKed structure. One could propose that these constructions do not, after all, involve standard LINK structures. Instead we could define an unrestricted process of *U-Adjunction* and *U-Merge*, found also in Japanese topic constructions, such that there is no restriction as to where in the ensuing structure the underspecified node is updated:

U- Adjunction

(165).

$$\frac{\{Tn(0), ?Ty(t), \Diamond\}}{\{\{Tn(0), ?Ty(t)\}, \{<U>Tn(0), ?Ty(e), \exists xTn(x), \Diamond\}}$$

U-Merge

(166).

$$\frac{\{...\{<U>Tn(0), Fo(a), Ty(e), ?\exists xTn(x)\}, \{MODTn(0), Fo(U), ?\exists xFo(x), \Diamond\}...\}}{\{...\{<U>Tn(0), MODTn(0), ?\exists xTn(x), Fo(a), ?\exists xFo(x), Fo(U), Ty(e), \Diamond\}...\}}$$

$$MOD \in \{ <\uparrow_0^{-1}>, <\uparrow_1^{-1}>, <L^{-1}> \}^*$$

These rules will allow merging of the node produced by the case-marked left dislocated constituent across the LINK relation and, therefore, across the equivalent of what in other frameworks are treated as "islands". However, notice that, as we said above, tonic

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[27] The exact formalisation of this process will be a variant of that provided in Kempson et al (2001: ch 9).

pronouns or epithets, that is, full DPs standardly with bottom restrictions, can decorate the merging sites. Therefore this solution does not seem promising for MG except if special provisions are being made. Furthermore, since the U-rules are designed to overcome the "island" constraints that were satisfactorily captured by the distinction between the *Adjunction and LINK rules above, with their integration in the MG syntax we will lose the explanatory account for such restrictions.

A more preferable solution therefore would be to seek to establish idiosyncratic properties of the Accusative case in MG which allows it to appear in such constructions. Indeed, according to my judgements, HTLD structures are impossible with Genitive NPs which is mainly the case marking for Indirect Objects in MG (but also for some Direct Objects[28]):

(167). ton Yiani#   gnorisa tin gineka   pu ton pandreftike xtes
the$_{acc}$ Yiani$_{acc}$ # met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl acc}$ married$_{3rd sing}$ yesterday
John, I met yesterday the woman who married him.

(168). *tu Yiani#   gnorisa tin gineka   pu tu milise   xtes
the$_{acc}$ Yiani$_{gen}$ # met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl gen}$ spoke$_{3rd sing}$ yesterday
John, I met yesterday the woman who spoke to him.

(169). *tuYiani#   xtes   gnorisa tin gineka   pu tu edose   ena vivlio
the$_{acc}$ Yiani$_{gen}$ # yesterday met$_{1st sing}$ the$_{acc}$ woman$_{acc}$ who him$_{cl gen}$ gave$_{3rd sing}$ a$_{acc}$ book$_{acc}$
John, I met yesterday the woman who gave him a book.

A solution would be to establish a distinction between 'semantic' and 'structural' case. The structural case, like in English, will impose a requirement for the node to merge in a specific tree position. The semantic type of case can be taken as some trigger for inferential effects non characterisable in the grammar. The lexical entries for each case marker will have to indicate this ambiguity and ensure that the structural use imposes the requirement for a specific position on the eventual tree whereas the semantic use can be utilised only when the element finds itself in a LINK relation to the root or other adverbial uses of case marked DPs (which indeed exist in MG). Genitive case can be assumed not to have this semantic use. One similar alternative would be to follow Anagnostopoulou (1997)'s suggestion for an adverbial use of 'aboutness' for Accusatives indicated by the presence of a null preposition (note that Accusative DPs can be used adverbially in MG to indicate time, place etc. as in "see you Monday$_{-acc}$ morning$_{-acc}$ "). We could then maintain that HTLD cases with Accusative are to be accounted for by such a use of non structural case and thus maintain only the *Adjunction and LINK rules in the grammar. The issue awaits further research.

Besides Case, another issue arises in the context of the solution that requires the condition for all DPs to be ?Ty(t) and their subsequent building of unfixed nodes discussed above in section 4b. A LINK transition will build a node which anticipates

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[28] Notice that the fact that some Direct Objects can appear with Genitive makes implausible the characterisation of Case in terms of requirements as to tree position. The same problem is generated by verbs that subcategorise for two Accusatives. Pending a more comprehensive theory of Case in DS I leave these problems for further research (but see Cann 2000).

Ty(*e*) input and this condition will not be able to be met by DPs except by a disjunctive characterisation in their lexical entries[29]. This is not an attractive solution since it automatically doubles the DP-lexicon in size and hence it has to acquire independent justification if it is to be adopted. Such justification might in any case be provided by the adverbial uses of case marked DPs mentioned above. Depending on how one treats adjuncts and whether these are analysed as optional arguments or LINK structures their trigger condition will have to be adjusted accordingly. If they can be considered optional arguments (see Marten 1999), then they can be taken to construct unfixed nodes as any other regular DP. If LINK structures then they would have to appear in nodes that require variable conditions therefore the extension of the lexicon will become a "necessary evil" for these cases and subsequently the HTLD cases can be accommodated there.

I now turn to examine Relative Clause structures in MG since under the present analysis they can receive a treatment which combines both a LINK structure and application of the *Adjunction rule.

4.e.2. Relative Clauses

The data concerning the differences between *opios-* and *pu*-RCs with DO dependency appear in the literature as follows: In *opios*-RCs the presence of a clitic in the relative marks it as Non-Restrictive; however, in some rare cases when the RC is unambiguously Non-Restrictive (with proper names) the clitic can be omitted in an Non-Restrictive RC. With Restrictive *opios*-RCs a clitic is excluded. In *pu*-RCs, the presence of the clitic does not seem to serve such a definitive function: with a definite head the presence of a clitic in a Restrictive RC is excluded but with an indefinite head the clitic can appear in a Restrictive RC.

(170). diavasa ena vivlio [pu (to)   pira apo ti vivliothiki]   RRC
    read-1S a book-ACC [that cl-ACC got from the-library-ACC]
       'I read a book that I got from the library'

(171). *diavasa to vivlio   [pu to   pira apo ti vivliothiki]   RRC: not possible
    read-1S the book-ACC [that cl-ACC got from the library]

As we said above, according to some researchers, when the relative involves an Indirect Object (IO) "gap" (and, according to everybody when it involves a possessive or Oblique (OBL) "gap"), the clitic is obligatory regardless of the definiteness of the head:

(172). enas/o mathitis   [pu *(tu)   eftiaksa ena keik]...
    a/ the student-NOM that cl-DAT made-1S a   cake
       'A/the student for whom I baked a cake'

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[29] Or if we assume that Computational rules build the unfixed nodes.

4.e.2.a. The differences between *opios* - and *pu* –Relatives

As we said above, Relative Clauses in MG are introduced with either of two elements: a case-marked relative pronoun, *o opios*, or the non-case marked complementiser *pu*. Restrictive Relative Clauses, typically, contain a "gap" in the argument position and can be introduced with either of the two elements:

(173). Ton andra   [pu ida xthes] ...
the-$_{acc}$ man-$_{acc}$ that saw yesterday
the man that I saw yesterday...

(174). Ton andra   [ton   opio   ida. xthes] ...
the-$_{acc}$ man-$_{acc}$ the-$_{acc}$ whom-$_{acc}$ saw yesterday
the man I saw yesterday...

To account for these facts, one option here would be to assume that that both *o opios* and *pu* behave as relative pronouns, that is, they introduce the LINK transition and construct an unfixed node to be merged with the argument position in the Relative Clause. Regarding the *o opios* cases, the case-marked relative pronoun can be analysed as simply providing an additional Case specification acting as a constraint on the position where the Formula value has to find itself. An alternative would be that the *o opios* relative pronoun (which indeed consists of the definite article *o* and a *wh*-pronoun (*opios*) both inflecting for case, gender and number) constructs a complex node consisting of the determiner and the pronominal. This contrasts with the actions initiated by the uninflected complementiser *pu* which just copies the Formula value on the node currently under processing and imposes a requirement for it to appear below in the tree. Since Non-Restrictive *opios*-relatives can contain a clitic to be updated by the complex tree-node induced by the *o opios* pronoun, this latter alternative would presuppose the above analysis of clitics in MG as having lost their bottom restriction (since the node they would construct must be able to merge with the complex node provided by the pronoun *o opios*). Moreover, since, in MG, Relative Clauses cannot be induced without the presence of complementisers/relative pronouns, the introduction of the LINKed tree will have to be induced by such lexical items and not by general Computational Rules as in English. This is not a theoretical compromise since Computational and Lexical rules are qualitatively identical differing only in obligatoriness of application. First of all, here is the proposed lexical entry for the complementiser *pu* and the relative pronoun *o opios* :

(175). Preliminary lexical entry for *o opios*

IF   {Fo(x), Ty(e)}
THEN   make(<L>); go(<L>); put(?Ty(t), ?↓• (Fo(x));_
        make (< ↓• >); go(< ↓• >); put(Fo(x), ∃xTn(x), ?<↑$_0$>Ty(t))
ELSE   ABORT

(176). Preliminary lexical entry for *pu*

IF   {Fo(x), Ty(e)}
THEN   make(<L>); go(<L>); put(?Ty(t), ?↓• (Fo(x))
ELSE   ABORT

In the above lexical entries, the free variable x can be bound according to the appropriate value obtaining on the node under construction and transfer this value as a requirement in the LINKed tree constructed by the Relative clause. One should note here that if we take seriously the proposal in section 4.a.2.b. regarding Object *pro-drop* for MG then there is no need to require that the complementiser *pu* constructs an unfixed node, it just induces the LINK transition and imposes the requirement. The meta-variable deposited on the Object node by the verb will ensure that the clause is type-complete and can be compiled. The choice on whether to use an (apparent) gap or a clitic-affixed verb which makes the meta-variable explicit will then have to follow from pragmatic factors (see Accessibility theory below). On the other hand, if all DPs have as condition a $?Ty(t)$ with the verb imposing requirements for Objects of the appropriate type (see section 4.b) then we must define both the relative pronoun and the complementiser as having almost identical properties in that they would both copy the current Formula value and construct an unfixed node which will eventually satisfy the type requirement on the Object node. This is because in the absence of a clitic-affixed verb the type requirement of the Object node will never be met and the tree will not be completed. Moreover, the relative markers will have to move the pointer to the $?Ty(t)$ node in anticipation of lexical input:

(177). Alternative lexical entry for *o opios*

IF	$\{Fo(x), Ty(e)\}$
THEN	make(<L>); go(<L>); put($?Ty(t)$, $?\downarrow$* (Fo(x)); _
	make (< $\downarrow$* >); go(< $\downarrow$* >); put(Fo(x), $\exists xTn(x)$, ?<$\uparrow_0$>$Ty(t)$; go(< $\uparrow$* >)
ELSE	**ABORT**

(178). Alternative lexical entry for pu

|	
IF	$\{Fo(x), Ty(e)\}$
THEN	make(<L>); go(<L>); put($?Ty(t)$, ?< $\downarrow$* > (Fo(x))
	make (< $\downarrow$* >); go(< $\downarrow$* >); put(Fo(x), $?\exists xTn(x)$; go(< $\uparrow$* >)
ELSE	**ABORT**

4.e.2.b.   Restrictive and non-Restrictive Relatives

In DS, all DPs are treated as initiating structured objects of type *e* described by means of fixing the following four parameters:

a. the *Binder* indicates the mode of quantification, for example, whether we are dealing with a universal quantifier (τ) or an existential (ε) etc.
b. the *Variable* indicates the variable being bound by the binder
c. the *Restrictor* indicates the binding domain of the variable
d. a *Scope Statement* which describes the scope interactions between quantifiers present in a single tree.

The following is a typical tree constructed by the processing of a quantified DP:

NP: $Ty(e)$

DET: Ty(*cn* → *e*)   NOM: Ty(*cn*)

VAR:Ty(*e*)   RESTR: Ty(*e* → *cn*)
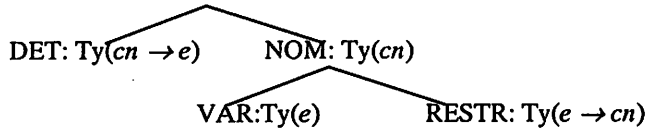
The highest node, NP, is the node which represents the completed term which will appear as an argument to a predicate (DP in other frameworks). The node DET is build according to the type of determiner occurring in the DP. All determiners have the type *cn* → *e* but contribute various types of features in the structure (e.g. Indef/Def) as well as establishing the manner of quantification. For example, an indefinite determiner like *enas* (= a) in MG will contain the following lexical actions:

enas

IF	{ ?Ty(*e*) }
THEN	put(Indef(+)); make(<↓$_1$>); go(<↓$_1$>); put(Fo(λP(ε, P)), Ty(*cn* → *e*)); }DET
	go(<↑$_1$>); make(<↓$_0$>); go(<↓$_0$>); put(?Ty(*cn*))
ELSE	**ABORT**

The processing of a common noun follows that of a determiner and satisfies the requirement imposed by it (?Ty(*cn*)). The lexical entry for a common noun includes instructions to build one node where a "fresh" variable is placed (VAR) and another node which taking this variable as an argument constructs a domain restrictor (NOM) for the quantifier.

andras (=man)

IF	{? Ty(*cn*)}	
THEN	make(<↓$_1$>); go(<↓$_1$>); put(Fo(λX(X, Man(X))), Ty(*e* → *cn*), [↓] ⊥);	}RESTR
	go(<↑$_1$>); make(<↓$_0$>); go(<↓$_0$>); put(Fo(U)); put(Ty(*e*));	}VAR
ELSE	**ABORT**	

LINKed trees built by Relative Clauses are taken to be initiated from the two type *e* nodes on the tree above, either the VAR node in the case of Restrictive Relatives or the NP node for Non-Restrictives. In the former case, the Formula value copied as a requirement is the (meta)variable (U) contributed in the structure by the common noun. In the case of Non-Restrictives, a term already formed is required to appear somewhere on the LINKed tree. As in Kempson et al. (2001) no differentiation will be made here between Restrictive and non-Restrictive RCs other than that in the case of Restrictive RCs the information supplied by the clause is compiled to build a complex restrictor whereas in the case of non-Restrictives the information supplied by the Relative is incorporated in the main tree at some final point of compiling the main structure.

4.e.2.c.   The presence of clitics in Relative Clauses

Non-Restrictive Relatives

In general the presence of clitics in Relatives seems to be more appropriate when the Relative has the interpretation of a Non-Restrictive. In fact, such Relatives seem to require the presence of a resumptive clitic especially when they are introduced with *pu*:

(179).   Ida ton Yiani, ton opio (ton) ixa sinantisi ke xthes, simera to apogevma

saw the-$_{acc}$ John-$_{acc}$ the-$_{acc}$ whom-$_{acc}$ (him-$_{cl-ACC}$) had met-$_{3rd\ Sing}$ and yesterday today the-$_{acc}$ the-$_{acc}$ evening-$_{acc}$

I saw John, who I had met yesterday, this evening

(180).   Ida ton Yiani, pu ton ixa sinantisi ke xthes, simera to apogevma

saw the-$_{acc}$ John-$_{acc}$ that him-$_{cl-acc}$ had met-$_{3rd\ Sing}$ and yesterday today the-$_{acc}$ evening-$_{acc}$

I saw John, who I had met yesterday, this evening

Nevertheless, a 'gap' in non-Restrictives is not strictly prohibited especially, as Stavrou (1983) notes, when there is no ambiguity as to whether the clause is non-Restrictive or not as, e.g., with proper names. For this reason I will assume that the choice on whether to use a clitic-affixed verb or not in non-Restrictive Relatives is free as far as the grammar is concerned, that is, it is non-grammaticalised and rather determined by pragmatic factors, namely, the speaker's choice to emphasise the independence of the clause (as suggested by Kempson 2001) or the lower accessibility of the antecedent referred to by the head noun at that point exactly because of the independent status of the Relative (see Ariel 1990).

Restrictive Relatives

Restrictive Relatives with indefinite heads are reported to tolerate more readily the presence of a clitic when this head can be interpreted as referential/specific (see Heycock et al. 2001). Moreover, many analysts point out that interpretationally the construal of such Relatives is similar to non-Restrictives (see e.g. Prince 1990). These observations might suggest that for a framework that builds directly semantic forms such Relatives should be analysed in a similar manner as non-Restrictives, that is, as involving the copying of an already completed type *e* term instead of building a complex nominal restrictor as in standard Restrictive Relatives.

Alexiadou & Anagnostopoulou (1997) claim that clitics in Restrictive Relative Clauses are debarred from appearing with definite heads. Similar conclusions have been reached by Stavrou (1983) who, moreover, claims that clitics even if they can be tolerated with *pu*-Relatives they are certainly not allowed with the *opios* ones. On the one hand, this latter claim seems to support the differentiation of the information supplied by *opios* and *pu* elements formalised above in terms of the construction of nodes of different complexity. On the other hand, the uncertainty regarding the obligatory absence or not of clitics with *pu*-Restrictives can be taken to indicate that a pragmatic solution might be preferable in general rather than the solution of incorporating a mechanism in the formalism which would exclude or require the presence of a clitic pronoun according to the type of the Relative and the semantic properties of the head (which is in effect what Alexiadou & Anagnostopoulou 1997 propose). Accordingly, here I will follow

Androulakis (1998) who assumes that clitics in Relatives are indeed optional. Their presence or not at particular utterances has to be regulated by a pragmatic/discourse theory. *Accessibility Theory* (Ariel 1990) seems to be making the right predictions here although the lack of a precise specific definition of what counts as "salient" and "accessible" indicates that more need to be said about these issues.

In any case, according to Accessibility Theory, languages employ distinct anaphoric expressions (markers) which act as indicators to the hearer of the accessibility status of the referent/antecedent at that point in the discourse. For the same antecedent several Accessibility Markers can be used: a proper name, a definite description, a pronoun (stressed or unstressed), a clitic or agreement morpheme or even a gap. However, these markers are hierarchically ranked in each language, depending on the anaphoric resources that this language makes available, so that they point the hearer to different accessibility statuses of the antecedent. Markers which indicate low saliency and rather retrieval from encyclopaedic knowledge are items like proper names or definite descriptions (Low Accessibility Markers) whereas items like deictics indicate Intermediate Accessibility status. Pronouns and "gaps" in general indicate High Accessibility of their antecedents.

In what regards the analysis of MG, from this perspective, if one adopts the Object *pro-drop* option mentioned above in section 4.a.2.b. one is committed to saying that this language has anaphoric resources that include a soundless meta-variable available both on the Object and Subject node as well as the usual clitic affixes, tonic pronouns, definite NPs, proper names etc. This means that such a meta-variable supplied by the verb must be considered as a Higher Accessibility marker than a clitic or a tonic pronoun. And in turn a clitic indicates an antecedent that is more accessible than that of a tonic pronoun, thus accounting for the fact that tonic pronouns are indeed reserved for contrastive uses. It remains to explain what the choice between an apparent 'gap' and clitic can indicate, a choice which is relevant to the interpretation of Relative Clauses.

Ariel (1990) mentions several factors that affect choice of anaphoric markers: degree of cohesion of units at the sentence and discourse levels, topicality of the antecedent and competition among antecedents. One implication of this claim is that in highly cohesive sentence-level environments, as one could consider Restrictive Relatives in combination with their head, one should expect relatively higher Accessibility markers than the ones in more loosely connected environments like non-Restrictives, which should normally employ lower Accessibility markers. Notice though that this approach to the problem of clitics in MG Relatives does not immediately solve the problems because Ariel allows that different languages might grammaticalise these distinctions. The issue therefore is to decide whether such distinctions have been grammaticalised in MG. If we adopt the view that they are, we should not ever expect clitics to appear in Restrictive Relatives expect by performance error. Although more research is needed to confirm what the situation is I will assume here that the presence of clitics is licensed by the grammar everywhere and that for the actual choice of a speaker whether to use them or not it is discourse/pragmatic factors that are decisive. In this respect, it is reasonable to claim, I think, that when there is a choice like between using a simple verb or a clitic-affixed one there should be demonstrable consequences following the choice of one

option instead of another. Accessibility Theory indeed makes such predictions thus accounting for the relative acceptability of particular choices in particular contexts. All factors that Ariel (1990) considers important like distance from the antecedent head, another topicalised DP intervening and the differential degree of cohesion between Restrictives and non-Restrictives can be shown in MG to affect acceptability of clitics in MG Restrictive Relatives:

(181). O andras [pu filise i Maria] ...   RRC
      the man [that kissed the Mary]...
      the man [that Mary kissed]...

(182). O Yiannis [pu ton filise i Maria] ...   non-RRC
      the John [that him-CL kissed the Mary]...
      John [who Mary kissed]...

(183). *?O andras[pu ton filise i Maria]...   RRC
      the man [that him-CL kissed the Mary]...
      the man [that Mary kissed]...

(184). O andras [pu akugete [oti ton filise i Maria]]... ·   RRC
      the man [that heard [that him-CL kissed the Mary]]...
      the man [who it is heard that Mary kissed (him)]...

(185). O andras [pu i Maria ton perifronouse] ...   RRC
      the man [that the Mary him-CL disliked]...
      the man [that Mary disliked]...

Examples (181)-(183) show the difference in acceptability of clitics in Restrictives and Non-Restrictive Relatives. (184) shows that when the head of the Relative and verb are separated by an embedded clause then the presence of the clitic becomes acceptable, a fact already noted by Stavrou (1983) and attributed to facilitation of processing reasons. (185) shows that when another topicalised/focalised constituent intervenes between the relative complementiser and the verb then the presence of a clitic in a Restrictive Relative becomes again acceptable.

Finally, one should note that the effects noted by Ariel (1990) have to be regarded as epiphenomenal and ultimately accounted for by the interaction of the grammatical resources of the language and an appropriate general pragmatic theory, describing rationally justified choices by speakers/hearers. In this respect, Givon (1983, 1988) points out that what governs the choice of what nominal expression is employed in a language is the concept of referential accessibility: easily accessible referents are minimally encoded while less accessible referents tend to require fuller encoding. Hence, the referential accessibility of an NP stands in inverse proportion to the phonological size of the grammatical device which encodes it[30] (In Relevance Theory terms the effort expended for the processing of a full nominal expression must be justified by indicating that search for its referent must be in a wider domain).

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[30] Givon posits a *code-quantity* scale the lower point of which is zero anaphora for the most accessible/predictable referents the upper point being restrictively modified definite nouns encoding the least accessible/predictable referents.

5. THE CONCEPTUAL AND PHILOSOPHICAL BACKGROUND[31]

It is now time to step back and reflect on the assumptions behind the above proposals, the questions raised by the choices made and their implications for the structure of the grammar proposed. With the argumentation presented below I intend to establish that whatever differences might have surfaced in terms of the analytical tools employed the work presented here is part of the Chomskian tradition.

First of all I would like to examine whether the competence-performance distinction is an acceptable notion for a framework that purports to model the process of language understanding.

5.a. Competence and Performance

The 'cognitive revolution' of the late 1950's was a reaction led by Chomsky and others to the behaviourist-empiricist way of engaging in scientific activity in general; but, more specifically, it was directed against the view of human cognition as the formation of a system of habits and the investigative practices that sought to establish direct relations between stimulus situations, contingencies of reinforcement and behaviour. Under the new perspective brought about, the human mind came to be considered as an information processing system which forms abstract representations and carries out computations that use and modify them. Language has been taken as the par excellence exemplification of this type of cognitive/mental activity and was characterised by Chomsky as demonstrating clearly the need to postulate an underlying knowledge base that mediates between the directly observed stimuli-responses patterns. In the context of the scientific methodology of the behaviourists it was required that only immediately observed phenomena, like human behaviour, have any status as scientific data. In what regards human cognition, behaviourists focused on the behaviour of human beings in actual situations and disregarded as 'unscientific' theoretical constructs that had to do with internal mental states. In order to emphasise the divergence with previous approaches and following Saussure's structuralist distinction between *langue* and *parole* Chomsky introduced a similar distinction between *competence* and *performance*. His claim was that human beings come to internalise a body of knowledge, and this knowledge (now termed 'competence') contributes to the observed behavioural 'performance'. He insisted that positing such a competence was necessary in order to explain the highly sophisticated linguistic performance that we observe in humans and argued that it is a perfectly legitimate, if not the only, domain of enquiry for linguistic theory.

Chomsky saw this 'competence' as a type of knowledge. However, this claim ran into problems under philosophical scrutiny: speakers-hearers can be said to "know" language

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[31] One should note that the following sections, even more so than the previous ones, reflect personal views not necessarily shared by all proponents of the DS approach.

only in a special sense of 'know[32]' since much of this knowledge is unconscious and it is not clear how the notions of truth and justification apply to it. Some philosophers, purportedly following Wittgenstein (see, e.g. Dummett 1993, Kenny 1984), argue that Chomsky's notion of linguistic competence is founded on a misunderstanding of the notion of 'knowledge'. For example, Dummett (1993) asks the question: Is the ability to speak a language really a case of knowledge? Is it that a practical ability is all there is in a practical ability like 'knowing how' to swim or to ride a bicycle or, indeed, in speaking or comprehending speech? According to these philosophers, the relevant distinction missed by Chomsky, has to be between two quite different senses of 'know': *knowledge-that* and *knowledge-how*. Knowledge-that (propositional, declarative knowledge) is a matter of believing certain truths on the basis of some kind of cognitive learning process. Knowledge-how, on the other hand, is a matter of having certain abilities, e.g., knowing how to swim, catch a ball, or ride a bicycle. Given this distinction, some philosophers would say that Chomsky in addition to conflating two senses of 'know' in building his construct, has opted for the wrong one. Moreover, once this second variety of knowledge has been taken into account, it may seem to provide a perfectly good explanation of linguistic behaviour without then having to introduce any notion of 'competence'.

There seems to be a misunderstanding underlying the debate which involves a second notion of competence-performance distinctions, one which corresponds to a distinction drawn in formal theories of computation: for any formal system it is possible to distinguish between descriptions of *what* the system computes and *how* the system does the computing, i.e., what algorithm it uses. According to Crocker (1996), this distinction is a formal property of any processing system: inherent to any process is both a declarative semantics and an operational semantics. In this sense the type of knowledge a linguistic theory postulates is a model of the mental state of the language user regarding what is computed by the linguistic mechanisms seen quite independently of the algorithm describing how this is done. Of course, one cannot claim that there must be such a thing as linguistic competence, patterned on systems of belief, simply because current linguistic theories have described it as such. When one makes reference to knowledge claimed to be internalised in the mind-brain of the language user this response is not useful: the distinction that has been made is between somebody's being *guided* by a rule and having one's behaviour *fit* a rule, i.e., being correctly describable by a rule. For example, physical phenomena, like the movement of the planets can be said to "fit rules", also known as *laws*, that describe them. But planets are not "guided" by these rules. So an object can have its behaviour correctly described by a rule or a theory even if the object is totally oblivious of the rule. Therefore the argument here is that while linguistic behaviour may "fit" (i.e. accord with) the complex rules that linguists discover, language users do not know/internalise/acquire these rules in the sense of knowing-that any more than planets acquire knowledge of Newton mechanics or general relativity. Chomsky's answer to this issue of why model mental states as propositional knowledge and not as a practical ability is that when conceived like that the question is at the wrong level of abstraction. First of all, Chomsky suggests, the models postulated are not external descriptions of what happens when language is used; instead they are mechanisms assumed to be in some way instantiated in the cognitive substructure of the language

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[32] Chomsky later introduced the term 'cognise' instead of 'know'.

user, as indeed are also beliefs, intentions, purposes and the like[33]. Whenever we encounter very complex behaviour which is comparatively stimulus-independent (i.e. very unlike a reflex) we posit mental states as the intervening cause of the behaviour. One might explain simple reflexes like pulling one's hand away from hot objects in terms of past (negative) stimuli, without calling upon beliefs or knowledge. But when human behaviour is not a direct response to stimuli, there seems to be no choice but to appeal to the agent's information states. That's because relatively simple dispositions are all that knowledge-how can handle. Crucially, however, linguistic behaviour cannot be accounted for merely dispositionally. Moreover, turning to terminological issues if this is the level of debate, in ordinary usage we can say that ability to use language may improve or decline without any change in knowledge. Furthermore this ability may be impaired, selectively or in general, with no loss of knowledge, a fact that would become clear if injury leading to impairment recedes and lost ability is recovered. So even under common understanding, knowledge of language, in the sense of a mental state of the language user, cannot be a cluster of capacities as it is conceived independently of them.

A natural reply against Chomsky is that one can also have a capacity and yet not be able to exercise it. And in response to the claim that knowledge-how can only apply to relatively simple cases, it might be said that capacities can be as complex as you like. What Chomsky says at this point is that understood in this way, 'Jones has capacity x' has become merely a way of saying 'Jones has a competence x' in his sense. And if philosophers are worried about theoretical parsimony and accuracy, by postulating a new type of knowledge, 'ability', no such aims are achieved and, ironically, go completely against the spirit of later Wittgenstein who constantly argued against constructing artificial concepts, divorced from ordinary usage. Moreover, if language is construed as a social practice in the manner of these philosophers' discussions, then it is tempting to understand knowledge of language as, indeed, the learned ability to engage in such practices, as Dummett suggests or –more generally – as an ability that can be exercised by speaking, understanding, reading, talking to oneself, etc.: "to know a language just is to have the ability to do these and similar things" (Kenny 1984: 138). The temptation is then to return to empiricist/behaviourist views of knowledge as complex systems of associations and stimulus-response patterns which contrast with the conception of knowledge of language as being the internal representation of a grammar in the mind-brain. From this latter point of view, ability to use one's language (to put one's knowledge to use) must be distinguished from having such knowledge. In fact, similar considerations show that other instances of 'knowing how', for example, knowing how to ride a bicycle, cannot be analysed in terms of abilities, dispositions, etc.; rather, there appears to be an irreducible competence involved. In effect, then Chomsky claims that the proposed distinction between knowledge-how and knowledge-that is at the wrong level of abstraction[34]. What is primary is a mental substructure of a system of knowledge from which complex capacities draw in their employment.

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[33] This has to do with Chomsky's resolution of the dualist paradox in terms of rejecting that a clear notion of *body* exists (see Smith, 2000:vii).

[34] "I want to consider mind (in the narrower or broader sense) as the innate capacity to form cognitive structures, not first-order capacities to act. The cognitive structures attained enter into our first-order capacities to act, but should not identified with them. Thus it does not seem to me quite accurate to take

The conclusion to be drawn from these is that despite appearances and seen under this light it seems that there is no conflict between the DS claim that "knowing a language consists in having the capacity to understand what a speaker of the language is saying" (Kempson et al. 2001: ix) and the standard Chomskyan/Fodorian claims regarding competence-performance distinctions. DS, even though formulated in procedural terms as articulating the *process* of language understanding, is, nonetheless, concerned with investigating the competence, that is, the cognitive structure/knowledge, underlying the human language capacity. Where there is disagreement is on the issues of what the actual form of this grammar should be, the ensuing broadening of that data base and the modularity of the cognitive system supporting this competence. These disagreements in turn have consequences regarding the topics of language acquisition and change. I will discuss these issues below.

5.b. Data and Idealisations

In a certain sense, DS can be taken as attempting to bridge the gap between functionalist and formalist approaches to language knowledge and use. In the functionalist literature (see e.g. Givon 1979) the Chomskian program has been criticised as a priori curtailing the data base relevant to investigation with the *idealisations* advocated in the name of the competence-performance distinction. This, in their view, has also led to complete disregard for the social and pragmatic aspects of language use[35] and has led Chomsky, while protesting vigorously to the contrary, in fact to borrow the Logical-Positivist assumption that language maybe described in isolation as a formal, deductive, closed and complete system. In fact, Givon (1979) criticises the Chomskian research program as elevating a descriptive tool, the formalism, to a form of explanation when the real explanations lie elsewhere, in his view, language use as a communicative

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"knowledge of English" to a be a capacity or ability, though it enters into the capacity or ability exercised in language use. In principle, one might have the cognitive structure that we call "knowledge of English" fully developed, with no capacity to use this structure; and certain capacities to carry out "intellectual activities" may involve no cognitive structures but merely a network of dispositions and habits, something quite different. Knowledge, understanding or belief is at a level more abstract than capacity. There has been a tendency in modern analytic philosophy to employ the notion "disposition" or "capacity" where the more abstract concept of "cognitive structure" is, I believe, more appropriate.... I think we see here an unfortunate residue of empiricism. The notions "capacity" and "family of dispositions" are more closely related to behaviour and "language use"; they do not lead us to inquire into the nature of the "ghost in the machine" through the study of cognitive structures and their organisation as normal scientific practice and intellectual curiosity would demand. The proper way to exorcise the ghost in the machine is to determine the structure of the mind and its products. There is nothing essentially mysterious about the concept of an abstract cognitive structure, created by an innate faculty of mind, represented in some still-unknown way in the brain, and entering into the system of capacities and dispositions to act and interpret. On the contrary, a formulation along these lines, embodying the conceptual competence-performance distinction seems a prerequisite for a serious investigation of behaviour. Human action can be understood only on the assumption that first-order capacities and families of dispositions to behave involve the use of cognitive structures that express systems of (unconscious) knowledge, belief, expectation, evaluation, judgement and the like. At least so it seems to me." (Chomsky 1981: 315-16)

[35] Note that for Chomsky, communication is a rather secondary function of language; its primary function is to assist/perform thinking

tool. Responding to this criticism one has to point out two things: (a) The formalism is indeed taken as an explanation in all Chomskian approaches -in my view, DS included – because these take the realist and non-instrumentalist position that what the formalism represents is an actual, internalised mental state of the mind-brain of the language speaker/hearer which is causally implicated in his/her linguistic behaviour. (b) Regarding the study of language not as some abstract phenomenon but as a social or cultural artifact it is the case that social and pragmatic aspects of language are of course not to be dismissed but these cannot be studied independently; one needs to study how these are represented in the brains of language users. Moreover, it is a legitimate move in current scientific practice to carve the domain of data relevant to one's inquiry in manageable portions and thus impose appropriate abstractions and idealisations.

Regarding the choice of data and what idealisations might be relevant, Fodor (1981b) points out that here there is an issue of conscious methodological choice: In the positivist/empiricist scientific tradition the data base for a theory could be delimited antecedently to its construction because it was assumed that the "facts" were out there, available to the observer and awaiting "objective" explanation. In linguistic science, this practice meant that it was postulated that the data base for it only consists of the corpora of utterances that informants produce. This was because Positivists thought that meaningfulness is a matter of *verifiability* (associated with the 'use theory of meaning'), or that theoretical entities are fictions, or that theoretical terms must be definable in an observation vocabulary etc. Thus they thought themselves warranted in identifying the empirical content of a linguistic theory with the data sentences that it entails. This also meant that there will be no choice between two theories that possess equivalent descriptive adequacy (if, in Quine's terms, they are 'extensionally equivalent'). On the other hand, the cognitivist approach considers that a linguistic theory or grammar would be correct, or 'true' (or exhibit 'explanatory adequacy') only if it can be taken to represent the mechanism that speakers-hearers of a language actually have internalised. In consequence, not only linguistic facts but *any* facts about the use of language, or about how it is learned, or about the neurology of speaker/hearers, etc. could, in principle, be relevant to the choice between competing linguistic theories. It is thus a consequence of this view that there is no a priori and pre-theoretic demarcation of what aspects of the data are relevant for linguistic theorising and what are not.

Nevertheless, despite Fodor's comments above, which have been echoed many times by Chomsky (see, e.g., 1986: 34-39), in actual practice so far the data that mainstream theories have taken as pertinent to grammar-construction have been solely well-formedness/grammaticality judgements according to speakers' intuitions. This, in my view, is associated mainly with the influence of two (partly principled and partly accidental) factors:

(A) The type of grammars that have been employed as explanatory formal tools have been modelled on the pattern of description of the formal languages, prevalent at the time when generative grammar was firstly established as a domain of inquiry. Regarding this issue and the controversies it has caused, Putnam (1981) points out that what Chomsky seems to have in mind when he talks about "grammar" is just the inductive definition of a

set of strings which is the set over which semantic, deductive-logical, inductive-logical (and so on) predicates are defined. However, he states, if a language is thought of in this way then it is easy to see how the grammar can be a property of the *language* (in fact, what Chomsky calls the *E-language*) and not of the speakers' brains (what has been termed as *I-language*). Chomsky replies that Putnam apparently confuses the grammars as descriptions of particular languages, say English, with the ultimate aim of linguistic theory which is the innate constraints on possible languages and grammars, that is, 'universal grammar' (UG)[36]. It appears to me that one of the points Chomsky is making here is that the exact formulation of the grammar a linguist proposes is not critical in attempting to characterise UG as long as it can be taken as reflecting a model of the language users' competence, the latter taken as a universal property of the human mind. Nonetheless, this last requirement places constraints on the type of grammars proposed. The crucial observation, in this respect, is that because language makes "infinite use of finite means", that is, it displays the property of *productivity,* whatever formalism is proposed needs to employ things like rules rather than, e.g., lists of sentences or patterns and that these rules must be *productive* or, in some formulations, generative. In this sense, and in Chomsky's own formulation, a *generative grammar* of a language is a formal system that states explicitly what are the finite means available to the mind/brain that makes infinite, unbounded use of these means. The upshot of this is that, terminologically, a generative grammar means nothing more than a theory of the language that is fully rigorous and explicit, so that empirical consequences can be derived from it. There is no a priori association with specific formalisms or models. Now, in what concerns DS, it must be noted that it is a framework that is more readily formulated as a system of constraints rather than as a generative-enumerative system (notice that this is a different sense of 'generativity' but cf. Pullum & Scholz 2001) of the Chomskyan type. Whether this is a notational issue or has substantial conceptual and empirical implications is not easy to ascertain at present (see again Pullum & Scholz ibid). But, in any case, the formalism displays the required property of productivity, in the sense that an unbounded amount of data sentences can be handled, it is adequately explicit and formal and as such, it can be clearly characterised as a generative grammar of the Chomskian type.

(B) The second factor affecting choice of data in current linguistic theory is a third type of competence-performance distinction. This has been utilised to distinguish between different kinds of mechanism internal to the language user, on the one hand, specialised systems for comprehending and producing sentences ('performance systems') and, on the other, a central repository of 'linguistic knowledge' which the input-output systems both interact with (a 'competence system'). (Note that both the above types of systems have nothing to do with 'behaviour'). The demarcation of this type of competence-performance domains is not a priori and its resolution constitutes clearly an empirical

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[36] Moreover, it has become apparent in the recent years that generative grammar is not concerned with sets of strings but rather with pairs of phonological-semantic structural descriptions. This is more obvious in versions of Minimalism conforming the principle of "late insertion" as expressed initially in Generative Semantics and, more recently, in Distributed Morphology (see Halle & Marantz 1994). According to this view, language-particular lexical items are introduced on the syntactic tree at the level of Morphology which occurs after spell-out on the way to PF and plays no role in the syntactic/semantic computation which follows universal principles (see also Chomsky 1986: 30).

question. DS calls into question the boundaries that have been traditionally postulated. The type of grammar advocated incorporates as an integral part the interaction of the tree construction mechanism with pragmatic processes like Substitution and much of its explanatory force relies on this connection. This has an immediate effect on the circumscription of the data base accounted for by the theory and, hence, differentiates DS from the standard Chomskian models. The competence-performance distinction mentioned above, as Fodor (ibid) succinctly points out, has been primarily used to explain why, for example, hiccoughs are not part of English even though they do occur from time to time in the corpus of English utterances. But, of course, according to what was said above regarding the non a priori demarcation of the data to be accounted for there is no principled obligation of linguistic theories to confine themselves to the explanation of grammaticality judgements as reported by speakers-hearers. Chomsky (1965: 10-12) has related *grammaticality* to competence and *acceptability* to performance. But for a framework like DS that circumscribes the remit of the grammar in such a way as to include some of what in other standard theories are considered as performance factors it is reasonable that the data base should be extended. The question that arises now is how much and in what directions it should be extended.

In this connection, Dummett (1993), who seems to prefer a view of language as a social practice and as an instance of knowing-how, comments: "any adequate philosophical account of language must describe it as a rational activity on the part of creatures to whom can be ascribed *intention* and *purpose*... To represent speech as a rational activity, we must describe it as something on to which the ordinary procedures of estimating overt motive and intention are brought to bear" (Dummett (1993): 323). In reply, Chomsky (2000) points out: "in the natural sciences or elsewhere, there is no such subject as the "study of everything". Thus it is no part of physics to determine exactly how a particular body moves under the influence of every particle or force in the universe, with possible human intervention, etc. This is not a topic" (Chomsky 2000: 49-50). Indeed, it is standard practice in scientific inquiry to idealise to selected domains in such a way as to facilitate the inquiry that permits us to discover crucial features of the world. Data and observations have an instrumental character and they are of no particular interest in themselves, but only insofar as they constitute evidence that confirm or disconfirm particular theoretical approaches. Chomsky claims that in effect the study of "language" in Dummett's sense verges on "the study of everything", and is therefore not a useful topic for linguistic theorising at least at the present stage of the discipline's development. I would like to consider now how this point is pertinent to the present discussion.

By allowing pragmatic processes to interact on-line with structural mechanisms it might appear that DS is transcending the standard 'idealisations' in the transformational/generative tradition and opening up again the floodgates for all types of interactions between intentions, purposes, beliefs etc. to be expressed as, e.g., overt speech act or other designations on structures, a practice which led, among others, to the demise of the program of *Generative Semantics*. However, DS claims, the approach here is different. Despite the interaction, the framework makes a clear distinction between what is to be expressed in the vocabulary of the formalism and what has to be accounted

for by general pragmatic processes whose modelling does not fall under the concerns of the theory. It is simply the case that in DS these general processes are constrained by structurally imposed requirements expressed in the model. Ultimately, of course, for a real explanatory model of language use, the formalism should be embeddable under a pragmatic theory which will take into account intentions, purposes etc. and will present the available choices at every point of non-determinism. Whether this is feasible or whether it approaches a "study of everything" it is not a question addressed by DS, at least in its current phase.

Nevertheless, because the DS formalism is presented in the form of a left to right parser the question that reasonably arises is what exactly the theory purports to be accounting for, if not actual human performance described by a "theory of everything". One might think reasonable that since the framework claims to model the parsing process then whatever linguistic signal can be shown as parsable should be provided means of treatment. However, this is not so. First of all, an actual parser needs to deal with such issues as resolution of ambiguity, minimisation of indeterminism at choice points, efficiency regarding the computational costs and recovery from break down. DS assumes that such issues of implementation of the formalism on an actual machine/automaton are to be treated as separate from the grammar modelling the knowledge employed in human utterance comprehension. Moreover, degenerate linguistic signals are to be abstracted from as reconstructed to well-formed input by the hearer and processed accordingly. This has implications concerning the idealisation of the data base and the notions of grammaticality and acceptability that are relevant. In this respect, Fodor (1981b) points out that the competence-performance distinction has been employed not only to abstract from properties of the data that can be considered irrelevant in terms of the particular interests of the theory but also to determine what types of data have to be altogether disregarded as erroneous or deceptive. For example, there are cases where speakers-hearers' naïve acceptability intuitions fail. For instance, when asked regarding the grammaticality status of multiply self embedded or 'garden-path' sentences many speakers would judge them as 'ungrammatical' on the grounds that they cannot process them. One cannot require that such sentences, although maybe to be accounted for by a parser, should not be generated by a grammatical model. The linguist who is aware of performance limitations, like short term memory load, disregards such judgements because (s)he has theory-internal evidence which indicates that these constructions must be generated by the grammar and would have been processable given the idealised situation of unlimited resources. A parallel situation arises in the context of DS which, while employing a relatively liberal concept of well-formedness, has on the other hand to resort to theory internal evidence in order to justify admittance of data that are not actually judged as grammatical by speakers in specific environments. One such case discussed above was the issue of whether the formalism should provide for the exclusion of clitics in Restrictive Relative Clauses when under normal circumstance they do not seem to occur unless specific discourse conditions obtain. The justification of the move not to exclude them is both on the a priori grounds of the above competence-performance distinctions and ultimately judged by the success in deriving fruitful generalisations otherwise unachievable. It also demonstrates that, contrary to criticisms from the

proponents of the functionalist approach, actual performance data have to be subjected to the critical assessment of the theorist and 'idealised' accordingly.

5.c. Language Acquisition, Innateness, Modularity

There are two competing doctrines in the domain of language acquisition: On the one hand the rationalist view maintains that at least some linguistic knowledge is part of the genetic endowment of humans. A rationalist though need not maintain that all of this knowledge is innate as it is perfectly obvious that infants only acquire the languages spoken around them. So, some linguistic knowledge has to be derived from experience. On the other hand, empiricists deny any such genetic endowment. Of course, they would happily admit that humans are born with the *capacity to learn language,* as it is obvious that there is something innately different about humans, something that accounts for the fact that in very similar environmental circumstances human babies learn to speak whereas kittens or kitchen tables do not. What an empiricist cannot concede is that we are born with *beliefs* about human languages, including beliefs about rules, i.e. that we have innate *contents* beyond general learning dispositions which are shaped by the influence of the environment. Nor can the empiricist admit that there are powerful and specialised mental mechanisms for finding structure in the sounds we hear, etc. existing prior to interaction with the environment. It is indicative that rationalists use terms like acquisition and maturation of language whereas empiricists talk about learning. DS, thus far, has been neutral regarding the empiricist-rationalist debate, but it seems to me that there is no way of discarding the evidence adduced in the last forty years regarding the innate endowment of humans regarding linguistic competence. In fact, one way to construe the DS approach is as a suggestion that more than just language are innately specified.

In proposing that the human competence for language is not be distinguished in significant respects from other cognitive processing mechanisms (input systems) and types of knowledge (see Kempson 2001), DS seems to make no distinction as to what mental equipment is required for language acquisition and what is required for other cognitive capacities. Of course, it is obvious that this does not make in any way the problem of language acquisition any simpler, hence to be accounted in terms of habits, dispositions, learning etc; it just allocates it to a different domain. The usual 'poverty of stimulus' arguments can apply with equal force to the general domain of cognition as in the language-specific components and then the added bonus is that claims regarding language evolution from simpler cognitive precursors can be given substance. The problems that such an approach has to address are alleged evidence that linguistic ability can be selectively impaired or remain intact when other cognitive abilities are subnormal. Additionally, evidence regarding localisation of linguistic functions in specific brain areas. But even if this evidence is granted, the claim that linguistic ability does not differ qualitatively from other cognitive capacities does not necessarily entail that there is no modular substructure in the human mind, which indeed maybe selectively impaired or its components be distributed in specific areas of the brain. In fact, DS is compatible with a view of cognition that is highly modular in its resulting state (see, e.g. Karmiloff-Smith

1992) although, again, with certain differentiations from the standard definitions of modularity. From the Fodorian criteria for modularity status DS certainly denies language 'informational encapsulation', but remains agnostic regarding 'domain specificity'. Furthermore, if there is a real 'poverty of stimulus' argument regarding language acquisition and if language is indeed acquired with the speed and accuracy claimed then the denial of extensive specialised innate structure underlying language might prove problematic only if the arguments in a long tradition of psychological research that do link general cognitive and linguistic development is disproved (see, e.g. Piaget 1969) instead of taken as explanatory for linguistic 'bootstrapping' (see, e.g. Pinker 1984).

6. CONCLUSION

In conclusion, I have tried to show with preliminary evidence from MG that DS provides a plausible alternative to the standard models of language description. Moreover, in my view, the proposed extension of the amount and types of data accounted for seem to make it a more attractive alternative, if successful.

I have also attempted to show that DS can be situated philosophically within the confines of the broader generativist-cognitivist enterprise. Methodologically, it diverges in what it takes to be as the remit and the form of the grammar. Empirically, the conclusions that have been reached due to this divergence appear to support a more optimistic view regarding the integration of linguistic competence within a general program of describing cognition.

REFERENCES

Agouraki, Y. (1990). "On the projection of Maximal Categories: The Case of CP and FP in Modern Greek". In: UCL Working Papers in Linguistics, 2: 183-200.

Agouraki, Y. (1993). "Spec-Head Licensing: The scope of the theory". PhD dissertation. UCL.

Agouraki, Y. (1997). "On the enclisis/proclisis alternation" Ms. University of Cyprus

Alexiadou, A. & E. Anagnostopoulou (1997) 'Clitics in Restrictive Relatives: an antisymmetric account', Studies in Greek Linguistics 17: 304-317.

Alexopoulou, T. (1997). "A discourse-based account of Weak Crossover Effects". In: Drewery, A., Kruijff, G.-J. M., & Zuber, R. (eds.)."Proceedings of the Second ESSLLI Student Session"

Anagnostopoulou, E. (1993). "Discourse Linking and Subjects in Modern Greek". In: LIN 1993.

Anagnostopoulou, E. (1994). "On the Representation of Clitic Doubling in Modern Greek". Ms. University of Salzburg/University of Tilburg.

Anagnostopoulou, E., van Riemsdijk, H. & Zwarts, F. (eds.) (1997). Materials on Left Dislocation. John Benjamins.

Anagnostopoulou, E. (1997). "Clitic Left Dislocation and Contrastive Left Dislocation". In: Anagnostopoulou, E (1997).

Anderson, S. (1996). "Rules and Constraints in describing the Morphology of Phrases." In: CLS 31: Parasession on Clitics: 15-31.

Androulakis, A. (1998). "Wh- and Direct Object Clitics Revisited". In: Joseph, B., Horrocks, G. & Philippaki-Warburton, I. (eds.)

Ariel, M. (1990). Accessing Noun-Phrase Antecedents. Croom Helm Linguistics Series, Routledge.

Blackburn, P. & Meyer-Viol, W. (1994). "Linguistics, logic, and finite trees". In: Bulletin of Interest Group of Pure and Applied Logics: 2-39

Block, N. (ed.) (1981). Readings in Philosophy of Psychology. vol. 2. Harvard University Press.

Bonet, E. (1991). *Morphology after Syntax.* PhD. Dissertation, MIT.

Cann, R. (2000). "Notes on Case in Dynamic Syntax". ms. University of Edinburgh.

Cann, R., Kempson, R., Marten, L., Otsuka, M. & Swinburne, D. (2001). "On the left and on the right". Draft. University of Edinburgh/King's College London,/SOAS /Tel Aviv.

Catsimali, G. (1990). *Case in Modern Greek: Implications for Clause Structure.* PhD. Dissertation, University of Reading.

Chafe, W. (1988). "Linking intonation units in spoken English'. In: Haiman, J. & Thompson, S. A. (eds.) *Typological Studies in Language 18: Clause Combining in Grammar and Discourse.* J. Benjamins Publishing Co. Amsterdam, Philadelphia.

Chomsky, N. (1965). *Aspects of the Theory of Syntax.* MIT Press.

Chomsky, N. (1986). *Knowledge of Language.* Praeger.

Chomsky, N. (1981). "On Cognitive Capacity". In: Block, N. (ed.): 305-23.

Chomsky, N. (1995). *The Minimalist Program.* MIT Press.

Chomsky, N. (2000). *New Horizons in the Study of Language and Mind.* Cambridge University Press.

Cinque, G. (1990). *Types of A' Dependencies* MIT Press

Crocker, M. (1996). *Computational Psycholinguistics.* Dordrecht: Kluwer.

Culicover, P. W. (1996). "On Distinguishing A-bar Movements". In: Linguistic Inquiry, 27: 445-463.

Dobrovie-Sorin, C. (1990). "Clitic Doubling, *Wh*-movement and Quantification in Romanian". In: Linguistic Inquiry, 21: 351-397.

Dimitriadis, A. (1994a). "Clitics and island-insensitive object-drop". In: *Studies in the Linguistic Sciences (Proceedings of FLSM-5),* vol. 24. Urbana-Champaign, IL

Dimitriadis, A. (1994b). "Clitics and object-drop in Modern Greek". In: *Proceedings of SCIL-6,* vol. 23, MITWPL.

Dimitriadis, A. (1996). "Dative Clitics and Case Licensing in Standard and Macedonian Greek." In *CLS 31: Parasession on Clitics*: 91-104.

Drachman, G. (1997a). "Some Properties of Clitics (with Special Reference to Modern Greek.". In: Alexiadou, A & Hall, A. T. (eds).

Drachman, G. (1997b). "Greek Imperative: A Nearly Ineffable Assymetry of Morpheme Order." Paper presented on the 2nd International Conference on Greek Linguistics, Athens.

Drachman, G. (1998). " 'Pemti!' (Peste-mu): The Proper Treatment of N.Greek Imperatives". In *Studies in Greek Linguistics*, 1998: 181-190.)

Dummett, M. (1993). "What do I know when I know a language". In: *The Seas of Language* Oxford Clarendon Press.

Fodor, J. (1981a). *Representations*. MIT Press.

Fodor, J. (1981b). "Some notes on what linguistics is about". In: Block, N. (ed.): 197-207.

Gabbay, D. (1996). *Labelled Deductive Systems*. Oxford University Press.

Giannakidou, A. & Merchant, J. (1997). "On the interpretation of null indefinite objects in Greek". In: Veloudis, G. & Karali, M. (eds.). *Studies in Greek Linguistics*, 17: 290-303. Aristotle University, Thessaloniki.

Ginzburg, J. & Sag, I. (2000). "English Interrogative Constructions". ms. King's College London and Stanford University.

Givon, T. (1979). *On Understanding Grammar*. Academic Press.

Givon, T. (1983). *Topic Continuity in Discourse: Quantitative Cross-Language Studies* Amsterdam, John Benjamins.

Givon, T. (1988). "The Pragmatics of Word Order Predictability, Importance and Attention". In: Hammond, M. et al. (ed). *Studies in Syntactic Typology*, 18: 243-284. Amsterdam, John Benjamins.

Goldman, A. (ed.) (1993). *Readings in Philosophy and Cognitive Science*. MIT Press.

Hale, K. & Keyser, S. J. (eds.) (1993). *The view from building 20*. MIT Press.

Halle, M & Marantz, A. (1993). "Distributed Morphology and Pieces of Inflection". In: Hale, K. & Keyser, S. J. (eds.).

Halle, M & Marantz, A. (1994). "Some key features of distributed morphology". In: Papers on Phonology and Morphology, MIT Working Papers in Linguistics, 21:

Hawkins, J. A. (1994). *A performance theory of order and constituency.* Cambridge University Press.

Heim, I. (1982). *The Semantics of Definite and Indefinite Noun Phrases.* Ph.D. Thesis. University of Massachusetts, Amherst.

Hendriks, H. & Dekker, P. (1996). "Links without locations". In:'Dekker, P.& Stokhof, M. (eds.) *Proceedings of the 10th Amsterdam Colloquium*, University of Amsterdam, ILLC

Heycock, C., Alexopoulou, T. & Doron, E. (2000). 'Resumption and the left periphery'. Draft. University of Edinburgh

Higginbotham, J. (1985). "On Semantics". Linguistic Inquiry, 16: 547-594.

Horrocks, J. (1994). "Subjects and configurationality: Modern Greek clause structure". In: Journal of Linguistics, 30: 81-109.

Iatridou, S. (1995). "Clitics and Island Effects". In *Penn Working Papers in Linguistics*, 2: 195-226.

Janse, M. (1993). "Son of Wackernagel: the Distribution of Object Clitic Pronouns in Cappadocian". In: Philippaki-Warburton, I., Nikolaidis, K. and Sifianou, M. (eds.).: 435-442.

Joseph, B. (1988). "Pronominal Affixes in Modern Greek: the Case against Clisis." In: CLS 24: 203-215.

Joseph, B. (1993). "On Weak Subjects and Pro-drop in Greek". In: Philippaki, I. et al. (eds.): 21-32.

Joseph, J. (1992). 'The benefits of morphological classification: on some apparently problematic Clitics in Modern Greek'. *Ohio State University Working Papers in Linguistics*, 52-61.

Joseph, B., Horrocks, G. & Philippaki-Warburton, I. (eds.) (1998). *Themes in Greek Linguistics II*. John Benjamins, Amsterdam, Philadelphia.

Joseph, B. & Philippaki-Warburton, I. (1987). *Modern Greek.* Croom-Helm.

Kamp, H. & Reyle, U. (1993). *From Discourse to Logic.* Kluwer.

Karmiloff-Smith, A. (1992). *Beyond Modularity*

Keenan, E. & Comrie, B. (1977). 'Noun Phrase Accessibility Hierarchy'. *Linguistic Inquiry*, 8(1): 63-69.

Keller, F. & Alexopoulou, T. (2000). "Phonology Competes with Syntax: Experimental Evidence for the Interaction of Word Order and Accent Placement in the Realisation of Information Structure". ms. University of Edinburgh. To appear Cognition, 2000.

Kempson, R. (2001). "The Big Questions". ms/draft King's College London.

Kempson, R. Meyer-Viol, W. & Gabbay, D. (2001). *Dynamic Syntax*. Blackwell.

Kempson, R. Meyer-Viol, W. (2000) "Topic and Focus Structures. The dynamics of tree growth" ms. Kings College London.

Kenny, A. (1984). *The Legacy of Wittgenstein*. Blackwell.

Kolliakou, D. & Alexopoulou, D. (2000). "On Linkhood and Clitic Left Dislocation". ms. University of Newcastle and University of Edinburgh.

Laskaratou, C. (1989). *A Functional Approach to Constituent Order with Particular Reference to Modern Greek*. Periodiko Parousia, Parartima 5. Athens

Manzini, M. R. & Savoia, L. M.(1998b). Parameters of subject inflection. Ms. UCL and Universita di Firenze.

Marten, L. (1999). *Syntactic and Semantic Underspecification in the Verb Phrase*. PhD. Dissertation, School of Oriental and African Studies. London

Piaget, J. (1969). *The Psychology of the child*. New York: Basic Books.

Pinker, S. (1984). *Language Learnability and Language Development*. Harvard University Press.

Philippaki-Warburton, I. (1987). 'The theory of empty categories and the pro-drop parameter in Modern Greek'. In: Journal of Linguistics, 23: 289-318.

Prince, E. (1990). 'Syntax and Discourse: A look at resumptive pronouns'. Berkeley Linguistic Society, 16: 482-497.

Prince, E. (1995). On the Limits of Syntax with reference to Left-Dislocation and Topicalization. ms. University of Pennsylvania

Prokopidis, P. (1998). *An HPSG Account of Modern Greek Relative Clauses*. MA Dissertation. University of Essex.

Pullum, G. K. & Scholz, B. "On the distinction between model-theoretic and generative-enumerative syntactic frameworks". ms. University of California, Santa Cruz and San Jose State University.

Putnam, H. (1981). "What is Innate and Why". In: Block, N. (ed).

Putnam, H. (1988). "Meaning, Other People, and the World". In: Goldman, A. (ed.): 597.

Rivero, M. L. (1994). "Clause structure and V-movement in the Languages of the Balkans" Natural Language and Linguistic Theory 12: 63-120.

Rivero, M. L. & Terzi, A. (1995). "Imperatives, Verb Movement and Logical Mood" Journal of Linguistics 31: 301-332.

Smith, N. (2000). "Foreword". In: Chomsky, N. (2000).

Spencer, (1991). *Morphology*. Blackwell

Stavrou, M. (1983). Aspects of the Structure of the Noun Phrase in Modern Greek. Ph.D. Thesis, University of London.

Sperber, D. & Wilson, D. (1995). Relevance Theory. Blackwell

Tsimpli, I. A. (1995). "Focusing in Modern Greek". In: Kiss, (ed). Discourse Configurational Languages. Oxford University Press.

Tsimpli, I. A. (1990). "Clause structure and Word Order in Modern Greek". In: UCL Working Papers in Linguistics, 2:226-255.

Tsimpli, I. A. (1998). "Individual and Functional Readings for Focus, Wh- and Negative Operators: Evidence from Greek". In: Joseph, B. D., Horrocks, G. C. & Philippaki-Warburton (eds.) *Themes in Greek Linguistics*. John Benjamins.

Tsiplakou, S. (1998). Focus in Greek: Its Structure and Interpretation. Ph.D. thesis. School of Oriental and African Studies.

Tzanidaki, D. I. (1996). *The Syntax and Pragmatics of Subject and Object Position in Modern Greek*. Ph.D. dissertation. UCL.

Vallduvi, E. (1992). *The Informational Component*. Garland, New York.

Valiouli, M. (1994). "Anaphora, agreement, and right dislocation in Greek". In: Journal of Semantics, 11: 55-82.