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Monadic definites and polydefinites: their form, meaning and use[1]

DIMITRA KOLLIAKOU

University of Newcastle upon Tyne

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This paper focuses on two types of definites in Greek – MONADICS and POLYDEFINITES – and provides a constraint-based account of their form, meaning and use. Specifically, I discuss three core issues that have not been addressed in previous work. First, the special pragmatic import of polydefinites. These are associated with contextual constraints that go beyond the uniqueness entailments of standard (monadic) definites. Their idiosyncratic morphosyntax achieves effects similar to those induced in other languages solely by prosodic means and illustrated by phenomena subsumed within the term DEACCENTING. Second, the morphosyntax of definites. I argue that the Greek definite article can be best analysed as a PHRASAL AFFIX, and provide a composition approach in the spirit of previous work couched in HPSG. Monadics and polydefinites are treated uniformly, without positing unmotivated complexity in the grammar for deriving the form of the latter. The definite concord and linear order facts that pose problems for previous analyses are directly derived and the morphosyntactic affinity between the Greek definite article and 'weak form' possessive is straightforwardly captured. Third, the semantics of definites. A quantificational semantics is provided that ensures that the semantic content of the definite article in polydefinites is integrated into the meaning of the sentence just once. Polydefinites are, therefore, semantically identical to monadics; the special import of the former originates from a contextual constraint on the anchoring of the index that interacts with the common morphosyntactic and semantic basis.

1. INTRODUCTION

Definites in Modern Greek can be divided into two classes: MONADICS and POLYDEFINITES. The former are reminiscent of English definites: attributive

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adjectives are required to precede the noun, (1a, b), and a single definite article occurs in the left periphery.[2]

(1) (a) to kokino podilato
the-NEUT.SG red-NEUT.SG bike-NEUT.SG
'the red bike'
(b) *to podilato kokino

Polydefinites, on the other hand, are reminiscent of languages with multiple definite determiner systems – for instance, Semitic, Scandinavian and Balkan.[3] The definite articles precede both adjectives and nouns, as illustrated in (2a–c), with definite adjectives being the only adjectives that can appear postnominally within Greek definite nominals. This is in contrast with indefinites, no matter whether these are bare or introduced by a determiner. There adjectives can appear both pre- and post-nominally, as in (2d, e).

(2) (a) to kokino to podilato
the-NEUT.SG red-NEUT.SG the-NEUT.SG bike-NEUT.SG
'the new bike'
(b) to podilato to kokino
(c) to kokino podilato to kenurio
the-NEUT.SG red-NEUT.SG bike-NEUT.SG the-NEUT.SG new-NEUT.SG
'the new red bike'
(d) ena kokino podilato
a-NEUT.SG red-NEUT.SG bike-NEUT.SG
'a new bike'
(e) ena podilato kokino

As has been noted in previous work (Kolliakou 1997b, 1999c; Alexiadou & Wilder 1998), there exists one class of adjectives that is excluded from the polydefinite construction. These are known as NON-INTERSECTIVE adjectives within the Montagovian tradition (e.g. Siegel 1976). Thus:

(3) (a) i ipotithemeni tromokrates 'the alleged terrorists'
(b) *i ipotithemeni i tromokrates
(c) i apli simptosi 'the mere coincidence'
(d) *i apli i simptosi

The constraint concerning non-intersective adjectives is, in fact, a manifestation of a more fundamental difference between polydefinites and monadics that has not been highlighted in previous research – namely, that the two constructions are associated with quite distinct contextual restrictions.

[2] Note, however, that certain prenominal adjectives in Greek may be followed by their own complement, contrary to what applies in English. I return to this point in section 4.3.1.

[3] For discussion see Ritter (1991) on Hebrew, Holmberg (1987) on Swedish, and Halpern (1995) on Balkan languages.

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In this paper, I specifically discuss the following three core issues that previous approaches (section 2), with few exceptions, have not addressed.

First, the special pragmatic import of polydefinites. These are associated with contextual constraints that go beyond the uniqueness entailments of standard (monadic) definites. Their idiosyncratic morphosyntax achieves effects similar to those induced in other languages by solely prosodic means and illustrated by phenomena subsumed within the term DEACCENTING. Kolliakou (1999c) explicates the pragmatics of polydefinites in terms of NON-MONOTONE ANAPHORA and Vallduví's notion of LINKHOOD (Vallduví 1992; Vallduví & Engdahl 1996), as revised by Hendriks & Dekker (1996). I summarize this proposal in section 3. In section 5, I demonstrate how it can be integrated into the account presented in this paper.

Second, the morphosyntax of definites. In section 4, I argue that the Greek definite article can be best analysed as a PHRASAL AFFIX, and provide a composition approach in the spirit of previous work couched in HPSG. Monadics and polydefinites are treated uniformly, without positing unmotivated complexity in the grammar for deriving the syntax of the latter. The definite concord and linear order facts that pose problems for previous analyses are directly derived, and the morphosyntactic affinity between the Greek definite article and 'weak form' possessive (Kolliakou 1999a, 2003) is straightforwardly captured.

Finally, the semantics of definites. Previous accounts do not provide an explicit semantics for monadics and polydefinites. Some authors assume that the 'extra' definite articles of polydefinites are expletives. They do not, however, explicate what this characterization amounts to and how the content value of a given element can sometimes be ignored while computing the compositional semantics of the phrase. In Kolliakou (1995) the definite article is associated with uniqueness entailments in the sense of Gawron & Peters (1990). Nonetheless, here too no serious attempt is made to explain how the grammar accounts for the fact that in, say, *to kokino to podilato* (cf. (2a) above) neither of the definite constituents picks out a unique entity; instead they do this together, the entailment being that the property 'red bike' is uniquely instantiated in a local setting (the RESOURCE SITUATION). The quantificational semantics for definites provided in section 5 ensures that the semantic content of the definite article in polydefinites is integrated into the meaning of the sentence just once. The polydefinite *to kokino to podilato*, (2a), is, therefore, semantically identical to the monadic *to kokino podilato*, (1a), whereas the special pragmatic import of the former originates from an additional contextual restriction on the anchoring of the index that interacts with the common morphosyntactic and semantic basis. The paper concludes in section 6.

Though this paper primarily focuses on Greek definites, the issues it addresses have wider scope. The constructions discussed here provide an opportunity for exploring fundamental issues concerning the architecture of

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grammar. An old but controversial thesis in linguistic theory is ultimately corroborated: that semantic and contextual information need to be rigorously integrated into the grammar. I employ the multi-dimensional framework of Head-driven Phrase Structure Grammar (HPSG) to formally express the constraints that the syntax and interpretation of monadics and polydefinites place on each other.

2. Previous work

Following a large body of work that builds on Szabolcsi 1987 and Abney 1987,[4] many accounts of noun phrase structure in Greek assume a rich system of functional categories, one which enables the definite article and other determiners to be represented as syntactically distinct: only the latter (and demonstratives) are instantiations of the D^0 head, whereas the definite article is the lexical head of a more embedded functional projection which, according to some authors, is an agreement phrase (AgrP; Karanassios 1992; Stavrou 1996) and, according to others, a definiteness phrase (DefP; Androutsopoulou 1994, 1995). Leaving minor differences aside, these accounts are on a par in that they assume a unified structure for monadics and polydefinites. This is illustrated in (4), from Androutsopoulou (1994).

(4) (a) $[_{DP}$ (afto) $[_{DefP}$ to $[_{AP}$ kokino … $[_{NP}$ podilato]]]] = (1a)
(b) $[_{DP}$ (afto) $[_{DefP}$ to $[_{AP}$ kokino $[_{DefP}$ to $[_{NP}$ podilato]]]]] = (2a)
'this red bike'

This type of approach raises a number of questions. For a start, the proposed syntax of the definite article is idiosyncratic and appears to deviate from standard assumptions concerning functional categories. Multiple projections of a given head are normally blocked, since, in terms of Minimalist syntactic theory, the grammatical features borne by the 'spare' phrases would otherwise remain 'unchecked'. A related point concerns what features the extra DefPs of polydefinites can be assumed to contribute. Androutsopoulou (1994: section 2) suggests that all definite articles but one are expletives. She maintains that there is no difference in meaning or use between monadics and polydefinites; but this will be shown to be incorrect.[5] Note also that certain important issues concerning the linear order remain unresolved. Androutsopoulou allows for the free order in polydefinites by assuming optional movement of DefPs over one or more definite adjectives to a higher

[4] See e.g. Mallen 1990, Giusti 1991, Shlonsky 1991, Bernstein 1993, Cinque 1994, Zamparelli 1996, to mention but a few. For earlier work on Greek NPs see Horrocks & Stavrou (1986, 1987), Stavrou & Horrocks (1990), Stavrou (1991).

[5] More recent work within the same paradigm, by Campos & Stavrou (2002), adopts Kolliakou's (1997b) proposal that polydefinites have a special pragmatic import. In addition, they employ the term POLYDEFINITE, coined in Kolliakou 1995.

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specifier position. However, she points out that it is not clear what the trigger of this movement is, and, consequently, what prevents it from taking place in the case of monadics.[6]

A number of these criticisms also apply to Alexiadou & Wilder's (1998) account, which employs for polydefinites the structure of reduced relatives à la Kayne (Kayne 1994). An adjective is taken to be the predicate of a clausal complement of the D head of the DP, with the noun phrase being treated as the adjective's subject under [SPEC, IP], cf. (5a). Monadics, on the other hand, are associated with the standard DP structure in (5b). This structure is also reserved for the embedded DP *to podilato* in (5a). The analysis of polydefinites crucially relies on obligatory movement of the adjective to [Spec, CP], in order to block ill-formed strings such as **to to podilato kokino*.

(5) (a) $[_{DP}$ to $[_{CP}$ **kokino$_i$** $[_{IP}$ $[_{DP}$ to $[_{NP}$ podilato]] **t$_i$**]]] = (2a)
(b) $[_{DP}$ to $[_{NP}$ AP kokino $[_{NP}$ podilato]]] = (1a)

In this account too polydefinites are claimed to have no independent import (Alexiadou & Wilder 1998: 304).[7] The treatment of (definite) adjectives as predicates is primarily motivated by the distribution of non-intersective adjectives such as *ipotithemenos* 'alleged': they cannot occur in predicative positions and, as mentioned above, they are also excluded from the polydefinite construction. As demonstrated in the following sections, however, the constraint concerning non-intersective adjectives follows directly from the special semantic-pragmatic import of the polydefinite construction and does not have to be stipulated by introducing considerable complexity in the syntax. Notice also that no independent motivation is provided for the crucial movement of the predicative adjective to [Spec, CP]. Finally, positing two distinct structures for DPs – a reduced relative structure and a standard modification structure – has undesirable consequences: it is unclear what mechanism of the grammar would actually prevent a Kayne-style DP from occurring inside a polydefinite in place of a standard modification structure, giving rise to spurious ambiguity, in (6a, b). And likewise for monadics, in (6c, d).

(6) (a) $[_{DP}$ to $[_{CP}$ kenurio$_i$ $[_{IP}$ **[**$_{DP}$ **to [**$_{NP}$ **kokino podilato]]** t$_i$]]]
(b) $[_{DP}$ to $[_{CP}$ kenurio$_i$ $[_{IP}$ $[_{DP}$ **to [**$_{CP}$ **kokino$_j$ [**$_{IP}$ **podilato t$_j$]]]** t$_i$]]]
'the new red bike' (see (2c))
(c) $[_{DP}$ to $[_{NP}$ AP kokino $[_{NP}$ podilato]]]
(d) $[_{DP}$ to $[_{CP}$ kokino$_i$ $[_{IP}$ $[_{DP}$ podilato] t$_i$]]] = (1a)

[6] Notice that (4a) above is indistinguishable from $[_{DP}$ (afto) $[_{DefP}$ to $[_{AP}$ kokino $[_{DefP}$ $[_{NP}$ podilato]]]]]. In the latter, the embedded DefP can be raised, yielding the ill-formed *(*afto*) *podilato to kokino*.

[7] In their footnote 16, the authors mention Kolliakou (1997b), published as Kolliakou (1999c), but they do not evaluate the claim made there, namely, that polydefinites have a special semantic-pragmatic import. (A summary of Kolliakou 1999c is provided in section 3 of this paper.)

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Following Androutsopoulou, Alexiadou & Wilder derive postnominal definite adjectives in polydefinites by assuming that DPs optionally move to superordinate Spec of DP positions. However, like Androutsopoulou, they provide no independent motivation for this movement. Moreover, their grammar, as it currently stands, cannot block the nominal under IP in (6e) from raising to the Spec of the matrix DP, causing overgeneration.

3. The special import of polydefinites

There is a clear difference between monadics and polydefinites that surprisingly enough most previous approaches, engrossed in the syntactic aspects of Greek NPs, have not addressed. Though the polydefinite construction is very productive, polydefinites do not freely alternate with monadics. Rather, the former are felicitous in only a subset of the contexts in which the latter can be found. Following Kolliakou (1999c), I argue that polydefinites are associated with contextual constraints that go beyond the uniqueness presuppositions of standard (monadic) definites. Specifically, they pick out a proper subset of a set previously introduced in discourse. In this section, I summarize the particulars of this proposal.

3.1 *Polydefinites and deaccenting*

The special import of polydefinites can be illuminated by looking at a phenomenon that has been referred to as DEACCENTING (cf. e.g. van Deemter 1994; Ladd 1996) and which occurs in English, among other languages. Consider the dialogue in (7) below, from Vallduví & Zacharski (1993) (their (22a, b), p. 693).

(7) (a) Ann: What did you get Ben for Christmas?
(b) Clara: I got him [*focus* a blue SHIRT].
(c) Ann: What did you get Diane?
(d) Clara: I got her [*focus* a RED shirt].

The NPs *a blue shirt* and *a red shirt* in (7b, d) are prosodically different: in the former the nuclear accent (marked with small capitals) falls on the noun, whereas in the latter the noun is 'deaccented' and the accent lands instead on the adjective. Both *a blue shirt* and *a red shirt* are informational foci of the sentences they occur in: they are constituents that contribute new information, updating the hearer's information state. Since in English information structure is primarily realized by intonational means (cf. e.g. Vallduví 1992; Vallduví & Engdahl 1996), with focus being characterized by the pitch accent associated with nuclear stress,[8] both focal phrases contain an

[8] English foci are claimed to be marked with Jackendoff's A Accent (Jackendoff 1977), which is taken to correspond to a simplex H* tone, generally followed by an L boundary tone (Pierrehumbert & Hirschberg 1990).

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accented element. The status of the accented *red* in (7d) is, however, less clear. Intuitively, the shift of the accent has something to do with the fact that shirts have already been mentioned once in the previous discourse. Certain theories of pragmatic focus (see e.g. Krifka 1991; Rooth 1992; Erteschik-Shir 1997) allow for embedded foci in addition to the main one. In such theories *red* would have the status of (subordinate) informational focus as well. Other authors argue that there is only one pragmatic focus per sentence and that the exact placement of focal pitch accent within it is due to the interaction of a number of independent factors (Vallduví & Zacharski 1993). Prosodic principles of English assign the pitch accent on the noun inside the focal constituent of (7b). These principles interact with the independent process of DEACCENTING in (7d) and, as a result, the accent shifts to the adjective. Deaccenting is in turn associated with some anaphoric device of CONCEPT-GIVENNESS (van Deemter 1994), or some notion of INFORMATIVENESS or INTERESTINGNESS (Vallduví & Zacharski 1993).

There exists an interesting parallel between deaccenting and polydefinites. Consider next the dialogue in (8); # stands for 'infelicitous'.

(8) (a) Zoe: Ti pires tu Yanni gia ta christugena?
'What did you get Yiannis for Christmas?'
(b) Daphne: (Tu pira) [$_{foc}$ tin asimenia PENA].
'(I got him) the silver PEN.'
(b′) Daphne: #(Tu pira) [$_{foc}$ tin ASIMENIA pena].
#'(I got him) the SILVER pen.'
(b″) Daphne: #(Tu pira) [$_{foc}$ tin pena tin asimenia].
#'(I got him) the silver pen$_{polydefinite}$')
(c) Zoe: Ti pires tis Marias?
'What did you get Maria?'
(d) Daphne: (Tis pira) [$_{foc}$ tin pena ti chrisi].
'(I got her) the golden pen$_{polydefinite}$.'
(d′) Daphne: (Tis pira) [$_{foc}$ ti CHRISI pena].
'(I got her) the GOLDEN pen.'
(d″) Daphne: #(Tis pira) [$_{foc}$ ti chrisi PENA].
#'(I got her) the golden PEN.'

Assuming a unique silver pen is contextually available, Daphne can answer Zoe's question in (8a) by employing a monadic definite, with the focal pitch accent on the noun, as in (8b). As in the above example from English, the same monadic with the accent on the adjective, as in (8b′), would be infelicitous, and similarly for a polydefinite (8b″). Of course, both the deaccented monadic and the polydefinite are acceptable once contextualized. Let us, for example, assume that Zoe and Daphne had gone shopping together earlier on in the day when the above conversation took place, and Zoe had witnessed Daphne's being hesitant about whether she should buy a silver or a golden pen as a Christmas present for Yannis. Zoe left earlier so she did not

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see what Daphne finally bought. This being the relevant context for the question in (8a), then either (8b′) or (8b″) would be appropriate, with the canonical (non-deaccented) monadic in (8b) being infelicitous. Therefore, polydefinites are not merely associated with the type of uniqueness presupposition that pertains to (canonical) monadics. Rather, they additionally require appeal to some notion of contrast with alternative elements that are contextually salient. This is also illustrated in the follow-up to (8a, b) (with (8a, b) being the first context where pens are mentioned). As shown in (8d, d′, d″), at this point the use of a polydefinite (or a deaccented monadic) is not an option but a requirement: the golden pen is here contrasted with the previously mentioned silver one.

Notice, however, that explicit contrast between one or more alternatives is not a necessary condition for felicitously employing a polydefinite. Rather, it suffices that the polydefinite narrows down a given pool of referents by picking out a proper subset of it. This can be illustrated by the examples in (9).

(9) (a) O diefthindis dilose oti **i kali erevnites** tha eprepe na apolithun.
'The director declared that the competent researchers should be fired.' (Two readings.)
(b) O diefthindis dilose oti **i kali i erevnites** tha eprepe na apolithun.
'The director declared that the competent researchers should be fired.' (Restrictive reading only.)

(9a), which contains the monadic definite ***i kali*** *erevnites*, can a priori be assigned one of the following two readings: (a) a restrictive reading, according to which the competent researchers are singled out as the ones that should be fired (insane reading), and (b) a non-restrictive reading, according to which all of the researchers will have to be fired, despite their all being competent, due to financial difficulties and funding cuts. Once again, prosody allows us to disambiguate between the two readings: on the restrictive reading, the adjective *kali* is accented, whereas on the non-restrictive reading the accent falls on its natural landing site, the noun. On the other hand, (9b), which instead contains a polydefinite, allows only for the restrictive (insane) reading and cannot be associated with the non-restrictive one.

Further evidence shows that the restrictive import of the polydefinite construction is not affected by the presence of independent contrasts. (10a) below (based on an example from Hendriks & Dekker 1996), which involves a monadic definite *i mikres gates* 'the young cats', is four-way ambiguous, depending on (a) whether *gates* is accented and construed as SUBSECTIONALLY ANAPHORIC to *ta zoa* (implying that Yannis fed at least one non-cat), or unaccented, with the set of animals Yannis fed being understood to entirely consist of cats, and (b) whether *mikres* is interpreted as restrictive or non-restrictive and being accented or unaccented, respectively. (10a) can thus entail (a) that all the animals John fed were young cats, (b) that all the animals

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John fed were cats, but there were young and non-young cats, (c) that John fed cats and non-cats, and all of the cats were young, and (d) that John fed cats and non-cats, and there were young and non-young cats. Interestingly, in (10b), where the monadic is replaced by a polydefinite, two of the four readings – those that involve a non-restrictive interpretation for the adjective *i mikres* – are lost. (10b) can, therefore, signify solely either (a) that all the animals John fed were cats, but there were young and non-young cats, or (b) that John fed cats and non-cats, and there were young and non-young cats.

(10) (a) O Yannis taise ta zoa. **I mikres gates** itan pinasmenes.
'John fed the animals. The young cats were hungry.' (All four readings.)
(b) O Yannis taise ta zoa. **I mikres i gates** itan pinasmenes.
'John fed the animals. The young cats were hungry.' (Two readings only.)

3.2 *The Non-monotone Anaphora Hypothesis*

The reduction we noticed in the case of (9b) and (10b) above has interesting repercussions concerning anaphora. In general, anaphora is assumed to be monotone or upward monotone (Kamp & Reyle 1993). Nonetheless, some authors make a claim for non-monotone anaphora as well.[9] Hendriks & Dekker (1996) suggest that certain expressions in English can be compatible with either a monotone anaphoric or a non-monotone anaphoric use, but are resolved as unambiguously non-monotone anaphoric once associated with a particular pitch accent. This is Jackendoff's (1977) B Accent – a pitch accent assumed to characterize topics in English prosodically and taken to correspond to a complex L + H* fall-rise (Pierrehumbert & Hirschberg 1990). Non-monotone anaphora phenomena include subsectional anaphora, relational anaphora (see also van Deemter 1994), restrictive adjectives and relatives, and contrastive topics. Hendriks & Dekker propose to unify topics with subsectionally or relationally anaphoric expressions as well as restrictive modifiers, since the latter are accented likewise. Their proposal builds on Vallduví's work (Vallduví 1992) and arguably overcomes certain problems concerning Vallduví's treatment of LINKS (topics) as the 'current locus of update' in a Heim-style file-card system.

In Vallduví's framework, each sentence is viewed as an instruction to the hearer as to how to update her information state. Information states are represented as systems of Heim-style file-cards (Heim 1983). A file-card contains a number of records listing attributes that pertain to the entity it denotes, or relations holding between that entity and other entities denoted by other file-cards. Within this framework, the ground acts as an anchor for

[9] See Alexopoulou & Kolliakou (2002) for an account of the informational import of Clitic Left Dislocation in Greek in terms of non-monotone anaphora.

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the focus, indicating where (and how) the new information should be added. A link, as part of the ground, designates a particular file-card as the current locus of information update, i.e. it points to the file-card where the new information should be added. This notion of linkhood has, however, been criticized on a number of grounds (for discussion see Kolliakou 1999c; Alexopoulou & Kolliakou 2002).

Hendriks & Dekker's revised definition of links is based on non-monotone anaphora and allows information states to be represented by means of Kampian discourse representation structures. The latter can model precisely the same information as file-card systems, except that they lack a marked discourse referent corresponding to the file notion of 'current locus of update'. Linkhood is instead stated as a condition on discourse referents:

(11) The Non-Monotone Anaphora Hypothesis
Linkhood (marked by B Accent in English) serves to signal non-monotone anaphora. If an expression is a link, then its discourse referent Y is anaphoric to an antecedent discourse referent X, such that $X \not\subseteq Y$.

According to the above, X (the antecedent set) should not be a subset of or equal to Y (the set corresponding to the link). This formulation allows for two cases: either (a) the previously introduced set is larger (i.e. the set Y that the link picks out is a proper subset of the antecedent set X), or (b) the two sets do not intersect. The former case accounts for examples of subsectional anaphora, restrictive modification as well as contrastive topics/links. Case (b) captures relational anaphora and can also account for non-contrastive topics.

3.3 *The Polydefiniteness Constraint*

I propose to treat Greek polydefinites as links, in the sense of Hendriks & Dekker's (1996) revised notion of linkhood. Unlike monadics, which are in principle ambiguous between a monotone anaphoric and a non-monotone anaphoric reading and are disambiguated prosodically, polydefinites are unambiguously non-monotone anaphoric. That is, Greek provides for both prosodic and syntactic means for marking non-monotone anaphora.[10]

[10] In this respect, Greek differs from languages like English, which relies exclusively on prosody, but also from languages like Italian, which exploits its syntax to achieve similar effects to the effect of deaccenting. Italian provides for a right dislocation strategy, employed in the kind of contexts that trigger deaccenting in English. (ia) below, an attested example due to Ladd (1996), was uttered in a context where *your bath* is contrasted with a previous child's bath. Ladd reports that (ia) is the Italian analogue of the English deaccenting example in (ib). (ic) shows that deaccenting in Italian is not acceptable.

(i) (a) Adesso faccio scorrere il tuo, di bagnetto.
(b) I'll now run YOUR bath. (English counterpart of (ia))
(c) ??Adesso faccio scorrere il TUO bagnetto.

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The semantic import of Greek polydefinites can be captured by the Polydefiniteness Constraint in (12), which states that a polydefinite picks out a proper subset Y of a set X that has been previously introduced and is still salient in discourse. I remain non-committal here on whether (12) needs to be strengthened so that it also makes reference to an additional set that bears a complementary property to that of Y.

(12) THE POLYDEFINITENESS CONSTRAINT. Greek polydefinites are unambiguously non-monotone anaphoric expressions: the discourse referent Y of a polydefinite is anaphoric to an antecedent discourse referent X, such that $Y \subset X$.

In section 5, (12) is formulated as a contextual constraint on the anchoring of polydefinites' index. Thus, it is fully integrated into the HPSG account of Greek definites proposed here.

3.4 *Consequences of the proposal*

From the Polydefiniteness Constraint (12) follow a number of desirable consequences that I summarize below.

First, the otherwise puzzling fact that non-intersective adjectives are admissible only in monadics and not in polydefinites follows directly. Within the Montagovian tradition (e.g. Siegel 1976) only intersective adjectives denote a property that the referent of the noun phrase is required to instantiate. Non-intersective adjectives, on the other hand, are assigned quite different semantics: they denote a property that takes another property as its argument, and are known to identify a KIND of entity or event. The semantics of non-intersective adjectives, therefore, clashes with that of polydefinites: by their presence in a polydefinite construction, *ipotithemeni* and *apli* are required to pick out a proper subset of the set of terrorists and coincidences – those that are 'alleged' and 'mere', respectively. However, *ipotithemeni* and *apli* of (3) above, for example, cannot denote 'alleged' and 'mere' entities at all, rather they identify entities that are allegedly terrorists and merely coincidences. The monadic construction, on the other hand, is compatible with both the intersective and the non-intersective readings, since it does not require that the referent of the NP should form a proper subset of some previously introduced set.

Second (and similarly to the first prediction), it is correctly predicted that pragmatically non-restrictive terms cannot be polydefinites. Therefore, *the wide Pacific* and *the poisonous cobras* resist a polydefinite instantiation altogether.

(13) (a) Taksidepse ston plati Iriniko.
'She travelled in the wide Pacific.'
(b) #Taksidepse ston Iriniko ton plati.

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(c) Idame tis dilitiriodis kobres.
'We saw the poisonous cobras.'
(d) #Idame tis dilitiriodis tis kobres.

At first sight, it may appear that (*s*)*ton plati Iriniko* and *tis dilitiriodis kobres* are names and, therefore, that the contrasts in (13a, b) and (13c, d) have nothing to do with pragmatically non-restrictive terms being incompatible with polydefiniteness; rather, they are cases not very different from the contrast between, say, the name *Greece*, which for arbitrary reasons resists a definite article (**the Greece*), as opposed to *The Ukraine*, which requires it. Nonetheless, there is strong evidence against such a hypothesis. Like all proper names in Greek, *Maria Papadopoulou* in (14a) below is required to be preceded by a definite article when used referentially. The same name can also appear in a polydefinite construction, as shown in (14b), with both the first name and the surname being preceded by a definite article. The polydefinite version is entirely felicitous, provided Maria Papadopoulou is contrasted with some other individual – for instance, one that is also named Maria, but has a different surname.

(14) (a) Itan sto parti ki i Maria Papadopoulou.
'Maria Papadopoulou was also at the party.'
(b) Afti den itane i Maria i Papadopoulou, itan i ali Maria.
'This was not Maria Papadopoulou, it was the other Maria.'

Third, once the idiosyncratic import of polydefinites is acknowledged, polydefinites' kinship to close apposition, which was noticed some time ago (Stavrou 1991), follows very naturally. It is well-known that NPs in close apposition are restrictive. The phrase *my brother the lawyer* entails that I have at least one other brother, who is not a lawyer. (Hence, *Her brother the lawyer is a different person from her brother the writer* is a felicitous utterance.) In this respect, NPs in close apposition are quite different from NPs in loose apposition, the latter involving a uniqueness presupposition for the denotation of the NP they are associated with. (Hence, the infelicity of #*Her brother, the lawyer, is a different person from her brother, the writer.*) As shown in (15) below, close apposition (unlike loose apposition) is non-monotone anaphoric. In the context of (15a) (adapted from Hockett 1955, see also Doron 1994), *Lawrence the writer* cannot felicitously refer to *a great British artist*, and the same applies to its Greek counterpart. On the other hand, *Lawrence*, *the writer*, and likewise for its Greek counterpart, is not any different from a plain referential NP such as *Lawrence*: after all, the appositive only says, parenthetically as it were, that Lawrence was a writer. In the context of (15b), on the other hand, *Van Gogh the painter* is felicitous and non-monotonically anaphoric to *the Van Gogh brothers*. In the same context, *Van Gogh, the painter* is not acceptable, since two Van Gogh

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brothers have already been introduced and, thus, the uniqueness presupposition associated with loose apposition fails.

(15) (a) Apopse tha miliso gia ena megalo vretano kalitechni.
O Lawrence … /O Lawrence, o sigrafeas, …
#O Lawrence o sigrafeas …
'Tonight I will speak of a great British artist.
Lawrence … /Lawrence, the writer, …
#Lawrence the writer …'

(b) Apopse tha miliso gia tus aderfus Van Gogh, ton zografo ke ton kritiko texnis.
O Van Gogh o zografos …
#O Van Gogh, o zografos, …
'Tonight I will speak of the Van Gogh brothers, the painter and the critic.
Van Gogh the painter …
#Van Gogh, the painter, …'

Fourth, an analysis of polydefinites in terms of non-monotone anaphora is consistent with Vallduví & Zacharski's (1993) conjecture that there are no subordinate informational foci.[11] Therefore, the proposed analysis is not susceptible to problems noted for accounts that posit embedded foci (Krifka 1991; Rooth 1992; Erteschik-Shir 1997). In such accounts, the definite adjectives of polydefinites (and similarly for the accented adjective in deaccented monadics) would presumably be viewed as foci embedded within a topic in examples such as the following:

(16) (a) Speaker A: What did Bill's sisters do?
Speaker B: [$_T$ Bill's [$_F$ YOUNGEST] sister] [$_F$ kissed John]
(From Krifka 1991.)

(b) [[I mikres]$_{FOC\text{-}sub}$ [i gates]$_{TOP\text{-}sub}$]$_{TOP}$ [ine eksipnes]$_{FOC}$
'the YOUNG cats are intelligent'
(Based on Erteschik-Shir's (1997) terminology.)

However, the pitch accent associated with *youngest*/*i mikres* in (16a, b) is the B accent characteristically pertaining to topics, which is incompatible with an analysis of such elements as foci. In addition, the subordinate focus analysis is not supported by crosslinguistic evidence: if *youngest* and *i mikres* were pragmatic foci, we would expect them to be realized as such (possibly by nonprosodic means) across languages. This is not the case, as was shown by Vallduví & Zacharski (1993) and Ladd (1996) for Catalan and Italian, respectively – these being languages resisting deaccenting.

[11] Vallduví & Zacharski (1993) show that accounts positing embedded foci rely on either of the following false assumptions: (a) that all prosodic foci are informational foci, and (b) that quantificational nuclei of focus-sensitive operators like *even* or *only* must be informational foci.

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Finally, the analysis of polydefinites proposed here is compatible with their being or contributing to the focus or to the ground in the overall informational structure of the sentence they occur in. This is a desirable conclusion, since polydefinites have been shown to constitute (or be part of) the focal constituent – for instance, *tin pena ti xrisi* in (8d) above – or the ground, e.g. in the case of (10b), where *i mikres i gates* functions as a (contrastive) link/topic.[12]

4. Morphosyntax of definites

The inflectional paradigm of the Greek definite article essentially coincides with the (third person) paradigm of two categories of personal pronouns: (a) the so-called 'weak form' possessive (*tu*), illustrated in (17a); and (b) the direct object (DO; accusative) and indirect object (IO; genitive) pronouns (*to* and *tu*, respectively), illustrated in (17b).

(17) (a) tu kenuriu **tu** filu
the-GEN.MASC.SG new POSS-MASC.3SG friend
'of his new friend'

(b) **tu** to harisa
IO-MASC.3SG DO-NEUT.3SG gave-1SG
'I gave it to him.'

The inflectional paradigms of the definite article on the one hand and (third person) personal pronouns on the other are given in tables 1 and 2, respectively, with the identical forms in italics. (All singular genitive forms and the plural *tus* in table 2 can be employed as possessives;[13] all forms in table 2

SING	MASC	FEM	NEUT
NOM	o	i	*to*
GEN	*tu*	*tis*	*tu*
ACC	*ton*	*tin*	*to*
PL	MASC	FEM	NEUT
NOM	i	i	*ta*
GEN	*ton*	*ton*	*ton*
ACC	*tus*	*tis*	*ta*

Table 1
Inflectional paradigm of the definite article

[12] Kolliakou (1999b) shows how polydefinites relate to an HPSG account of the grammatical realization of information structure (Engdahl & Vallduví 1994).

[13] In more archaic registers the possessive plural coincides with the definite article's genitive plural *ton* (table 1), rather than with the accusative *tus*.

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SING	MASC	FEM	NEUT
GEN	*tu*	*tis*	*tu*
ACC	*ton*	*tin*	*to*
PL	MASC	FEM	NEUT
ACC	*tus*	*tis*	*ta*

Table 2
Inflectional paradigm of personal pronouns

can be employed as object pronouns, with *tu*, *tis*, *tus* as indirect objects[14] and all the accusative forms as direct objects.)

Both pronominal categories mentioned above have been analysed independently as PHRASAL AFFIXES, as opposed to POSTLEXICAL CLITICS (Kolliakou 1999a, 2003; Alexopoulou & Kolliakou 2002). The distinction is related to a long-standing debate in the literature on clitics. According to one proposal (for instance, Anderson 1992), all 'clitics' are phrasal affixes and should not be assigned the status of nodes in syntactic markers at all. Anderson discusses data from a number of languages and shows that there are very substantial similarities between the principles governing the placement of 'clitics' and those for the placement of affixes. An affixal approach to clitics will permit such generalizations to be expressed and, moreover, dispense with, in his view, ad hoc syntactic categories such as CLITIC or PARTICLE. According to an alternative view (for instance, Zwicky & Pullum 1983 and a more recent discussion in Halpern 1995) it is essential to distinguish between (a) affixal clitics that are lexically attached, and (b) postlexical clitics (PLC) that have the syntax of phrases but prosodically are part of a CLITIC GROUP (Nespor & Vogel 1986).

In this section, I argue that the morphosyntactic properties of the Greek definite article can be directly derived from an affixal approach. (See Miller (1992) for an affixal analysis of the French definite and indefinite article, and Halpern (1995) for an affixal approach to definites in the Balkan languages.) Not all the evidence I present is necessarily incompatible with an alternative PLC analysis, but there exist important exceptions – most crucially, the very existence of the polydefinite construction. All other things being equal, assuming postlexical clitic status for the definite article would block a uniform syntactic (and semantic) analysis of monadics and polydefinites. It is maintained here that there is no independent motivation for an account that would set polydefinites apart from all other types of Greek nominals, including monadics. Further, I show how a composition approach in the spirit

[14] Possessive and indirect object pronouns are in fact identical.

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of previous work on pronominal affixation couched in HPSG (Miller & Sag 1997 and Abeillé et al. 1998 for French, Kolliakou 1999a and Alexopoulou & Kolliakou 2002 for Greek) can be applied to the Greek definite article, despite apparent empirical and conceptual difficulties in extending to nominal phrases an approach originally intended for the placement of pronominal affixes in the verbal system of Romance.

4.1 *The affixal status of the definite article*

First, contrary to the vast majority of Greek determiners, the definite article cannot occur on its own,[15] nor can it host a possessive suffix, as shown in (18a) and (18b), respectively. Both facts can be directly derived from an affixal approach.

(18) (a) Pulusan orea tetradia. Agorasa merika.
sell-3PL.PST.IMP nice notebooks buy-1SG.PST.PERF some
'They were selling nice notebooks. I bought some.'
*… agorasa **ta**.
buy-1SG.PST.PERF the

(b) orismena **tu** arthra
certain poss-GEN.3SG.MASC articles
'some of his articles'
***ta** tu arthra
DEF poss-GEN.3SG.MASC articles
Putatively: 'his articles'

Second, the distribution of the definite article in polydefinites is reminiscent of the 'floating' distribution of the 'weak form' possessive. Though the former is a prefix (proclitic) whereas the latter a suffix (enclitic), both can be attached to the same range of 'hosts' – nouns, adjectives, numerals, as is shown in (19).[16]

(19) (a) **ta** podilata **tus**
DEF bikes POSS-GEN.3PL
'their bikes'

(b) **ta** kenuria **tus** (**ta**) podilata
DEF new POSS-GEN.3PL DEF bikes
'their new bikes'

(c) **ta** dio **tus** (**ta**) podilata
DEF two POSS-GEN.3PL DEF bikes
'their two bikes'

[15] The only determiner that patterns with the definite article in this respect is the non-inflecting *kathe* 'each'.

[16] They can also be attached to a few determiners, e.g. *o kathe fititis* (the-MASC.SG each student; 'each student') and *orismena tu arthra* (some poss-MASC.3SG articles; 'some of his articles').

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Third, the rule of Stop Voicing provides explicit phonological support for an affixal as opposed to a PLC account. As shown in Kolliakou (1999a), the voicing of a stop preceded by a nasal occurs either inside plain morphology words (*αντίθεση* 'antithesis'→[an**d**ithesi]) or inside clitic morphology words (*καθηγητών του* 'of his professors'→[kathigiton **d**u]),[17] but not across words. Therefore, in *καθηγητών τακτικών* 'of tenured professors', the initial [t] of the postnominal adjective cannot be voiced ([kathigiton **t**aktikon], rather than *[kathigiton **d**aktikon]). Definite nominals pattern with plain and clitic morphology words: in *των καθηγητών* 'of the professors' the initial [k] of the noun is voiced ([ton **g**athi*γ*iton]).

A fourth diagnostic is based on evidence from coordination. Potential for wide scope over coordinated hosts is taken to favour the PLC approach, and vice versa (Miller 1992). For example, the ill-formedness of **Pierre les voit et écoute*, as opposed to *Pierre les voit et les écoute* ('Pierre sees them and hears them') has been argued to support the affix status of French pronominal elements such as *les*. Nonetheless, as Miller has shown, the credibility of the coordination test varies, and 'it cannot be argued that an item is necessarily *not* an affix because it can have wide scope' (1992: 157). Miller provides examples where elements for which he claims affix status appear to exhibit wide scope in coordination – for instance, the definite and indefinite article in French (*le/un collegue et ami de mon père* 'the/a friend and collegue of my father'). Crucially, the French definite/indefinite affix can have wide scope over coordinated nominals only in case the latter are co-referential. The Greek definite article behaves likewise: the Greek variant of Miller's example in (20a), where *filos* 'friend' and *sinaderfos* 'colleague' pick out the same individual, is grammatical, contrary to (20b), where *ta* cannot be construed as having wide scope over a coordinate structure consisting of Ns with distinct reference.[18]

(20) (a) o filos ke sinadelfos
the-NOM.MASC.SG friend and collegue
tu patera mu
the-GEN.MASC.SG father POSS-1SG
'the friend and collegue of my father's'

(b) *ta [molivia tu Yani] ke
the crayons the-GEN.MASC.SG Yannis-GEN and
[tetradia tis Marias]
pads the-GEN.FEM.SG Maria-GEN
Putatively: 'the crayons of Yannis's and the pads of Maria's'

[17] 'Clitic morphology' is a term employed in previous HPSG work, including Kolliakou (1999a), with reference to form rather than morphosyntactic status: in Kolliakou (1999a), *kathigiton tu* is a clitic morphology word, despite the fact that *tu* is assigned affixal status; *kathigiton*, on the other hand, is a plain morphology word.

[18] For a discussion of the coordination criterion with reference to the Greek 'weak-form' possessive, see Kolliakou (2003).

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Demonstratives provide a fifth piece of evidence in favour of an affixal analysis, since they constitute 'exceptions' with respect to definite marking. Greek demonstratives are required to occur in definite NPs, as shown by the contrast in (21a, b) below. Despite the fact that they have been analysed as adjectives in previous work (Stavrou & Horrocks 1990) and, therefore, might be expected to pattern with them in all respects, demonstratives cannot act as definite article hosts, as (21c) shows. Interestingly, NP-internal demonstratives also resist possessive affixes (Kolliakou 2003), as illustrated in (21d, e). These facts can be straightforwardly accounted for under the affix treatment: such arbitrary gaps are common in the morphological paradigm of genuine inflectional affixes, but are less consistent with the postlexical clitic analysis.

(21) (a) to-kenurio afto vivlio/afto to-kenurio vivlio
the-NEUT.SG-new this book this the-NEUT.SG-new book
'this new book'
(b) *kenurio afto vivlio/*afto kenurio vivlio
(c) *to-kenurio to-afto vivlio/*to-afto to-kenurio vivlio
(d) to-kenurio **tu** afto vivlio
the-new POSS.3SG this book
'this new book of his'
(e) *to-kenurio afto **tu** vivlio

Finally, the very distribution of the definite article in polydefinites argues against a postlexical clitic approach and in favour of an affixal one. It seems intuitively correct that in both monadics and polydefinites there exists a single syntactic requirement for a determiner or a definite article – arguably, a requirement associated with the noun head. As explicated in Kolliakou (1995, 1997a), the view that the definite article is a definiteness or agreement marker, rather than a determiner-like element, and, therefore, is syntactically required more than once in certain nominals cannot be maintained for Greek, since it does not make accurate predictions. Contrary to what is the case in languages like Hebrew, where the definiteness marker *ha* marks every single element of the noun phrase as [+definite], as shown in (22) below, along with 'authentic' polydefinites (*to kenurio to podilato to kokino* 'the new red bike'), Greek allows for monadics (*to kenurio kokino podilato* 'the new red bike') and 'mixed' examples (*to kenurio podilato to kokino* 'the new red bike'), where some of the supposedly required definiteness or agreement markers appear to be missing. In other words, though definite concord in polydefinites and 'mixed' examples needs to be accounted for, the heterogeneous distribution of the definite article across Greek nominals presents a challenge for conventional notions of agreement.

(22) (a) ha-ofnayim ha-adumot
DEF-bike-PL DEF-red
'the red bike'
(b) *ha-ofnayim adumot (Ungrammatical on the intended reading.)

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(c) ha-ofnayim ha-adumot ha-elu
DEF-bike-PL DEF-red DEF-this
'this red bike'
(d) *ha-ofnayim adumot ha-elu

Also from a semantic point of view, it is clear that the contribution of the definite article in both monadics and polydefinites is integrated into the meaning of the sentence just once. For instance, in both *to kokino podilato* and *to kokino to podilato*, the same property 'red bike' is uniquely instantiated in a local setting (the resource situation in the sense of Gawron & Peters 1990). (The requirement that in the latter case the index should be anchored to an entity that is a proper subset of a salient set (a set of bikes or a set of vehicles, etc.) cannot be pinned onto the extra definite article: as shown in section 3, such a constraint is not exclusively associated with polydefinites but also occurs in deaccented monadics.) A postlexical clitic approach amounts to dealing with the prosodic deficiency of a syntactically (and, possibly, also semantically) autonomous category. Within such an approach the definite article would a priori be expected to be syntactically licensed more than once – in fact, as many times as it occurs in a given polydefinite – and be postlexically cliticized onto an appropriate nominal host (noun, adjective or numeral). Within an affixal approach, on the other hand, the multiple occurrence of the definite article in polydefinites can be straightforwardly treated as a mere option, an option that, in Greek, is available to definite but not possessive affixes (but see Halpern 1995 for other languages). Optional multiple realization of definiteness has no further consequences for the syntax or the semantics of definite nominals: in other words, monadics and polydefinites can be syntactically unified and assigned the same semantic content, leaving aside additional contextual constraints associated with deaccented monadics and polydefinites.

I propose to adopt the affixal approach and unify the definite article and 'weak form' possessive under a composition treatment. The evidence presented in this section appears to support such an analysis: neither of the two elements can occur on its own, their inflectional paradigms essentially coincide, they exhibit a common pattern of distribution in that they are attached to the same range of hosts (nouns, adjectives, numerals) and they are both sensitive to the rule of Stop Voicing. Evidence from coordination and the behaviour of demonstratives also supports such an analysis. As already mentioned, one difference exists in the distribution of the definite article and the 'weak form' possessive: multiple possessive marking is not available in Greek, as is illustrated in (23a).[19] In addition, definite concord in

[19] Halpern claims the opposite (Halpern 1995: 35–36) and quotes examples such as *to-palyo-mu kokino-mu mikro-mu spiti* 'my little old red house' (his (54)). However, to my knowledge, no such examples are attested in the Greek literature, and neither my consultants nor

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polydefinites must be accounted for: as illustrated in (23b–g), a definite constituent within a polydefinite cannot be modified by a non-definite adjective. The account proposed in the following sections can straightforwardly accommodate these facts.

(23) (a) *ta-kenuria **tus** kokina podilata-**tus**
'their new red bikes'
(b) [TA-kenuria [TA-kokina podilata]]
'the new red bikes'
(c) [TA-kenuria [TA-kokina [TA-podilata]]]
(d) *[TA-kenuria [kokina [TA-podilata]]]
(e) [[TA-kenuria podilata]] TA-kokina]
(f) [TA-kenuria [TA-podilata [TA-kokina]]]
(g) *[[TA-kenuria [TA-podilata]] kokina]

4.2 *Against a head treatment*

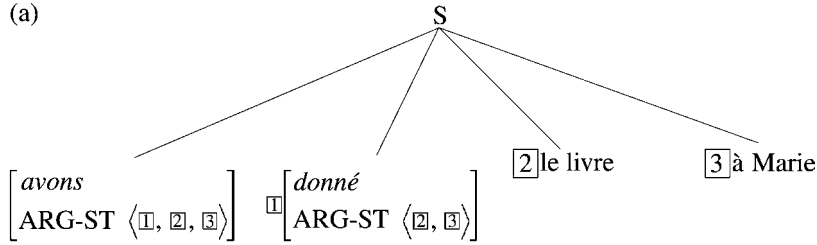
At first sight it might appear that an analysis of the definite article as a head would be desirable, if only for maintaining a uniform account of elements that have traditionally been treated as determiners. Nonetheless, in this section, I argue against such an analysis on the following grounds: (a) the head treatment is not compatible with an affixal analysis of the definite article in terms of composition, (b) it resists extension to a satisfactory account of polydefinites, and (c) a treatment of the definite article as a determiner head would complicate the analysis of nominal phrases that involve both a determiner (or a demonstrative) and one or more definite articles.

Composition is a notion reminiscent of DIVISION CATEGORIES in categorial grammar and was originally incorporated into HPSG by Hinrichs & Nakazawa (1994). By composition, a functor (for instance, an auxiliary verb such as the French *avoir* 'have') can combine with an unsaturated argument (a participle such as *donné* 'given' whose valence requirements have not been satisfied), and also, directly, with the arguments of that participle (*le livre* 'the book' and *à Marie* 'to Mary'); this is shown in (24a). Alternatively, the arguments that the auxiliary 'inherits' from the participle can be realized as affixes, which allows us to account for various instances of the phenomenon traditionally known as CLITIC CLIMBING, as in *le-lui-avons donné* ('we have given it to her/him'), cf. (24b).

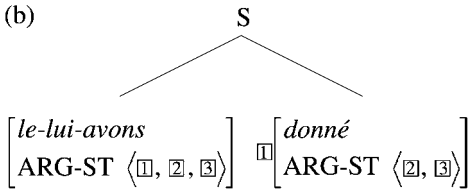
myself consider them acceptable. Nonetheless, were we to assume that there is a dialect where such examples are grammatical, the account proposed here can directly accommodate them (see below).

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(24) (a)

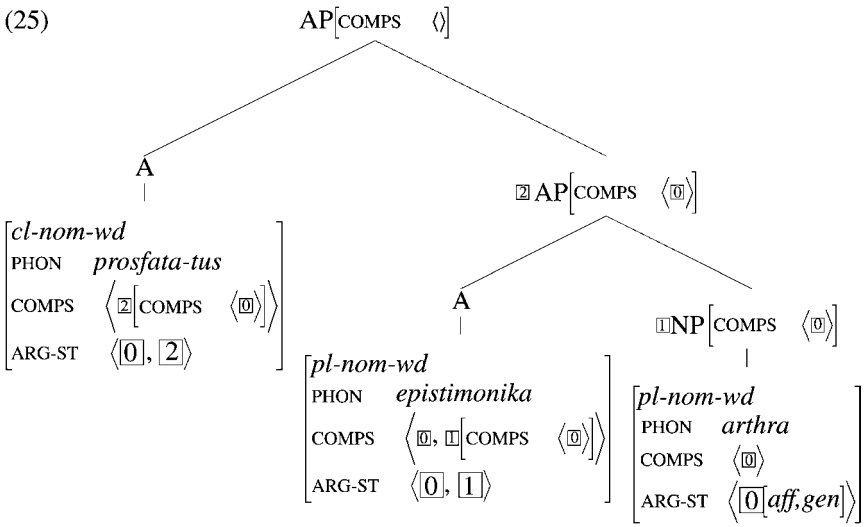


(b)



A variant of this approach has been adopted for 'weak form' possessives in Kolliakou (1999a). Following the version of composition put forward in Abeillé et al. (1998), possessive genitives are members of the COMPS (Complements) list, which enables the traditional hierarchical structure for NPs to be maintained (for details see below). On the other hand, Kolliakou (1999a) differs from the classical composition approach to pronominal affixation in Romance in that only affix members of COMPS, and not phrases, can be inherited by composition heads. The composition treatment of possessive affixes in Greek is illustrated in (25).

(25)

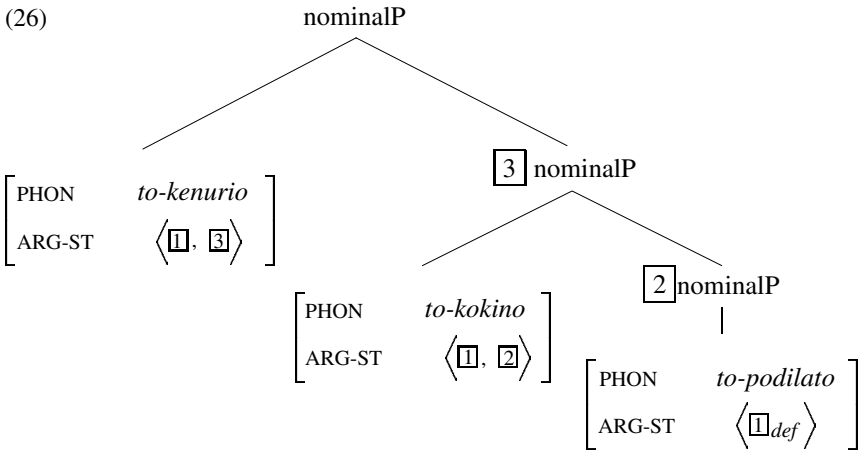


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ta-prosfata tus epistimonika arthra
the-recent poss-GEN .3PL scientific papers
'their recent scientific papers'

As shown in detail in the following section, optional multiple realization of the Greek definite article can be accounted for by assuming that a nominal functor (numeral or adjective) may attract a subcategorization requirement associated with an embedded noun head, even if such a requirement has been previously morphologically satisfied, as shown in (26).

(26)



It is, therefore, crucial for the purposes of composition that the definite article not be assigned the status of a (determiner) head.

In the same vein, if the definite article were to be analysed as a head, then polydefinites could not be syntactically unified with monadics and other nominals. They would instead require an idiosyncratic treatment, one that might, for instance, involve positing a specific phrasal type with two definite daughters (for some discussion see Kolliakou 1999b). (Note, however, that it would be non-trivial to ensure that at most one definite constituent in such a phrase can involve an embedded NP: standard assumptions concerning locality in subcategorization would have to be abandoned in order to access the internal makeup of the definite nominals involved.) As has already been pointed out, there is no empirical motivation for analysing polydefinites as syntactically distinct from monadics or other nominals. This is particularly true of a grammatical framework such as HPSG, whose multidimensional architecture enables monadics and polydefinites to be syntactically unified and at the same time be associated with different contextual constraints. Moreover, were we to assume a different syntactic analysis for polydefinites, we would not be able to extend to them the composition treatment of 'weak form' possessives presented in Kolliakou (1999a). Nonetheless, as shown

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there, the distribution of possessive affixes is identical in all types of nominals, including polydefinites. Thus:

(27) (a) ta aglika **tus** ta vivlia
DEF English poss-GEN.3PL DEF books
'their English books'
(b) ta aglika ta vivlia **tus**
(c) ??ta vivlia ta aglika **tus**
(d) ena vivlio **tus** agliko
a book poss-GEN.3PL English
'one of their English books'
(e) ??ena vivlio agliko **tus**

Finally, a head treatment of the definite article would complicate the account of determiners such as *ola* 'all' and demonstratives such as *afta* 'these', which can be syntactically combined with monadics or polydefinites, as in (28).

(28) (a) ola **ta**-kenuria (**ta**)-podilata
'all the new bikes'
(b) afta **ta**-kenuria (**ta**)-podilata
'these new bikes'

If *ta kenuria* (*ta*) *podilata* in (28) is treated as a DP, then *ola* and *afta* cannot be analysed as determiners. In order for such examples to be accounted for, the universal quantifier and demonstratives could alternatively be classified as non-determiners.[20] In that case, the definite article would be syntactically unified with determiners, at the cost of exostracizing certain other members from the same group. However, given the problems for a head treatment of the definite article discussed earlier in this section, it seems clear that it is preferable to maintain a determiner analysis for *ola* and *afta*, and put forward a different account for the definite article.[21]

4.3 *A composition approach*

In this section, I propose to analyse the definite article as an argument of the head noun, one realized on the SPR (Specifier) list. The specifier analysis is consistent with a uniform approach to Greek nominal constructions, including polydefinites, and, moreover, enables the composition treatment of 'weak form' possessives proposed in Kolliakou (1999a) (see also Kolliakou

[20] See, for instance, Giusti (1991) for an analysis of the Italian counterpart of (28a) as a quantifier phrase headed by a functional category QUANTIFIER.

[21] In Kolliakou (2003) determiners such as *ola* and *afta* select for their NP complement via the valence feature COMPS. That complement is required to be definite, and agreement between determiner head and NP complement is lexically specified.

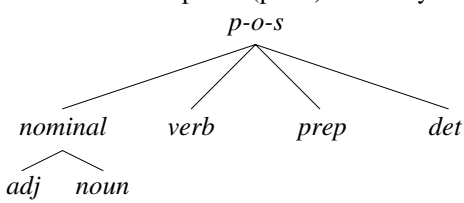
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2003) to be directly extended to the definite article and account for its affixal properties. As shown in detail in section 5, the approach proposed here also overcomes a semantic problem for previous analyses: how to account for the fact that only one of the definite articles in a polydefinite contributes its semantic content to the phrase it appears in, with the 'spare' definite articles making no difference.

4.3.1 *Greek NP structure: some preliminaries*

Following Kolliakou (1999a, 2003), I assume here a treatment of adjectives as heads of nominal projections, with APs 'dominating' noun heads and their complements. This type of treatment is not novel in the literature. It is familiar from categorial grammar, where adjectives are assigned the type NP/NP, i.e. they are treated as functors that take an NP argument and yield another NP. In addition, it is commonly assumed in GB accounts, following Abney's (1987) proposal for English. Such an analysis allows us to directly apply the composition approach to the Greek definite article, as this approach relies on the assumption that only functors (heads) may inherit the unsatisfied subcategorization requirements of more embedded heads. In HPSG terms, the head treatment of adjectives can be formalized (a) by unifying the lexemic types *adjective* and *noun* of the part-of-speech hierarchy under a supertype *nominal*, as shown in (29) (see also Malouf 1998), and (b) by assuming that phrases consisting of an adjective and a category traditionally referred to as an N′ (see below) are of type *hd-comp-ph* (*head-complement-phrase*), i.e. that an adjective takes a nominal phrase (NP or AP) as its complement.[22]

(29) Part-of-speech (p-o-s) hierarchy:



A variety of arguments for treating adjectives and nouns in Greek as partly unified categories are provided in Kolliakou (2003). I briefly mention just a few here. First, Greek adjectives and nouns fall under the same morphological paradigms and both categories are morphologically marked

[22] Due to space limitations, I focus here on adjectives and ignore numerals, despite the fact that the latter can also host definite and possessive affixes, and are amenable to the same treatment. For a detailed discussion of numerals see Kolliakou (2003), which also provides a semantic account based on Link (1983).

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for case and agreement in person, number and gender. The HPSG features CASE and AGR – the latter subsuming PERSON, NUMBER and GENDER, as in Sag & Wasow (1999) – can, therefore, be defined for *nominal* and inherited by its subtypes. This is shown in table 3.

Type	Features/Type of Value	IST
nominal	$\begin{bmatrix} \text{CASE} & \textit{case} \\ \text{AGR} & \begin{bmatrix} \text{PER} & \textit{per} \\ \text{NUM} & \textit{num} \\ \text{GEND} & \textit{gend} \end{bmatrix} \end{bmatrix}$	*part-of-speech*

Table 3
Feature declaration for nominals

Secondly, possessive affixes can attach to either nouns or adjectives and, therefore, the supertype *nominal* allows us to generalize over their suitable 'hosts'. And thirdly, both adjectives and nouns can function as complements of higher heads (verbs and determiners, including demonstratives) in 'canonical' and 'elliptical' contexts, the Greek nominal system being quite different from the English one and allowing for both 'determinerless' and 'nounless' maximal nominal categories, as shown in (30).

(30) (a) Echase to vivlio tis ki agorase [$_{NomP}$ kenurio].
lost-3SG the book POSS-3SG.FEM and bought-3SG new
'She lost her book and bought a new one'

(b) I times ton isitirion pikilun. Kita na vris kanena
the prices of the tickets vary try to get any
[$_{NomP}$ ftino].
cheap
'The prices of the tickets vary. Try to get a cheap one.'

Modelling adjectives and nouns as subtypes of *nominal* will enable a unified account of the syntax of 'canonical' and 'elliptical' constructions to be provided, one that does not posit phonologically null noun heads and is in the spirit of semantic approaches to ellipsis resolution that do not assume reconstruction in the syntax. Note further that this general approach can also account for the distribution of standard and elliptical DPs, the latter consisting exclusively of a determiner head. (For a detailed discussion of nominal structure in Greek see Kolliakou 2003.)

A final issue needs to be addressed concerning the proposed analysis of adjectives as heads rather than modifiers. There exist certain adjectives that can take a PP complement, for example, *perifanos* 'proud' in (31a) below.

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Such adjectives could be lexically specified for an argument structure list that contains two elements: a PP and the lexical nominal phrase.[23] Note, nonetheless, that the PP argument is most frequently omitted in attributive uses – in fact, it is strongly dispreferred in case of polydefinites, as shown in (31b). This might suggest that definite morphology forms of lexemes such as *perifanos* should be specified for a different argument structure list than the one specified for plain forms, with the former selecting for just a lexical nominal and no PP (for further details see section 4.4.1 below).[24]

(31) (a) o perifanos gia tin kori tu pateras
the proud for the daughter POSS-3SG.MASC father
'the proud of his daughter father'

---

[23] Such an assumption might appear problematic for stating binding theory constraints. It might look as if such constraints should be required to be placed on a sublist of the adjective's argument structure list – a list excluding the first or leftmost argument (the PP) and including all others. However, there is evidence that the noun's referent can control the reference of the adjective's PP complement, a fact that might support a head treatment of adjectives such as *perifanos* 'proud'. In (i) below, the anaphor that is embedded within the adjective's PP complement must be co-referential with the noun. Were we to assume that *perifanos gia ton eafto-tu* is best analysed as a modifier of an N′ *pateras*, there would be no reason why (ib) should be ungrammatical.

(i) (a) o-perifanos [gia ton eafto tu] pateras
the-MASC.SG proud for the-MASC.SG self POSS-MASC.SG father
'the father proud for himself'
(b) *o-perifanos [gia ton eafto tis] pateras
the-MASC.SG proud for the-MASC.SG self POSS-FEM.SG father
'the father proud for herself'

[24] Comparative forms such as *megaliteros* 'older' behave in a similar manner. They can take (a) an *apo* 'than' phrase complement, (ia), or a 'weak form' genitive (*tis*), (ib); and (b) a degree phrase, e.g. *tria chronia* 'three years', which can be analysed as a specifier (Pollard & Sag 1994) or could alternatively be treated as an A′ adjunct. (ic), where the adjective is attributive and both a 'than' phrase and a degree phrase are present, is rather awkward, though it improves once either of the two phrases is omitted. (id), on the other hand, where both the adjective and the noun host a 'weak form' pronoun – the former as the object of comparison, and the latter as the possessive argument of the noun head – is ruled out. For a detailed account of Greek adjectives that license two complements – a PP or pronominal complement such as those illustrated in the examples (31a), (ia, b) and a nominal phrase phrase whose subcategorization requirements are partly controlled by the head adjective – see Kolliakou (2003: chapters 6 and 7). There it is claimed that the head approach allows us to elegantly capture certain generalizations concerning the distribution of pronominal complements, whereas the modifier alternative resists extension to a satisfactory account of these facts.

(i) (a) O ghios tu ine [[tria chronia] megaliteros [apo tin aderfi tu]].
'His son is three years older than his sister.'
(b) O ghios tu ine [tria chronia] megaliteros tis.
the son POSS-MASC.3SG is three years older GEN-FEM.3SG
'His son is three years older than her.'
(c) ??o [tria chronia [megaliteros [apo tin aderfi tu]]] ghios tu
'the three years older than his sister son'
(d) *o tria chronia megaliteros tis ghios tu
the three years older GEN-FEM.3SG son POSS-MASC.3SG

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(b) ?? o perifanos gia tin kori tu o pateras
the proud for the daughter POSS-3SG.MASC the father
'the proud of his daughter father'

4.3.2 *Nouns*

Both common and proper nouns may cooccur with a definite article in Greek, a property that is derived by inheritance from the argument selection hierarchy, rather than being stipulated in the lexical entries. The lexemic types populating this hierarchy, for instance, *def-trn-lx* (*definite-transitive-lexeme*), *def-intr-lx* (*definite-intransitive-lexeme*), *pl-trn-lx* (*plain-transitive-lexeme*), etc., introduce constraints on argument structure lists. The latter specify whether the first (leftmost) argument should be a definite affix or not, and whether there should be other arguments and of what kind, for instance, a genitive, an *apo* 'by' phrase, an *oti* 'that' sentence, etc. Such constraints are inherited by more specific subtypes, which in addition integrate the constraints on lexemic types in the part-of-speech hierarchy. To illustrate, the (maximal) lexemic type *def-intr-n-lx* (*definite-intransitive-noun-lexeme*) in (32c) inherits the constraints associated with *n-lx* (*noun-lexeme*) in (32a),[25] a type in the part-of-speech hierarchy, and *def-intr-lx* (*definite-intransitive-lexeme*) in (32b), a type in the argument selection hierarchy.[26] On the other hand, *pl-intr-n-lx* (*plain-intransitive-noun-lexeme*) in (32e) is cross-classified as a subtype of *n-lx* and *pl-intr-lx* (*plain-intransitive-lexeme*), (32d), and, therefore, does not select for a *def-ss* argument that is to be realized as a definite affix; *def-ss* is an abbreviation for *definite-synsem* (see below).

(32) (a)

$$\textit{n-lx} \Rightarrow \left[\text{SS} \mid \text{LOC} \mid \text{CAT} \left[\begin{array}{ll}\text{HEAD} & n \\ \text{SUBJ} & \langle\rangle\end{array}\right]\right]$$

[25] It is assumed here that nouns are specified for an empty SUBJ list. This essentially entails that the first (leftmost) argument is normally realized on the SPR list, rather than the SUBJ list.

[26] The constraints on *n-lx* and *def-intr-lx* in (32a, b) cannot be collapsed under a single type, since nouns are not the only syntactic category that may select for a definite affix, even though they prototypically do so. In phrases such as *o epomenos* 'the-MASC.SG next (one)', *tus apenanti* 'the-MASC.PL (ones) on the opposite side' or *i apo kato* 'the-FEM.SG (one) downstairs', the definite article could be analysed as the specifier of an adjectival, adverbial and prepositional head, respectively, each of the latter inheriting the constraint in (32b). Similarly for the definite CP construction (for discussion, see Roussou 1993): *to oti se dehtike de simeni tipota* 'the-N.SG (fact) that (s/he) saw you does not mean anything'. Here the neuter singular form of the definite article, *to*, could be treated as an argument of the complementizer head *oti* 'that'. The latter would, therefore, be specified for an ARG-ST list that contains two arguments – a definite affix and a sentence. For a head analysis of complementizers within HPSG, see Sag (1997), Ginzburg & Sag (2000).

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(b) $\textit{def-intr-lx} \Rightarrow \left[\text{ARG-ST} \quad \langle \textit{def-ss} \rangle\right]$

(c) $\left[\textit{def-intr-n-lx}\right.$
$\left.\left[\text{SS} \mid \text{LOC} \mid \text{CAT} \left[\begin{array}{ll}\text{HEAD} & n \\ \text{SUBJ} & \langle\rangle\end{array}\right]\right.\right.$
$\left.\left.\text{ARG-ST} \quad \langle \textit{def-ss} \rangle\right]\right]$

(d) $\textit{pl-intr-lx} \Rightarrow \left[\text{ARG-ST} \quad \langle\rangle\right]$

(e) $\left[\textit{pl-intr-n-lx}\right.$
$\left.\left[\text{SS} \mid \text{LOC} \mid \text{CAT} \left[\begin{array}{ll}\text{HEAD} & n \\ \text{SUBJ} & \langle\rangle\end{array}\right]\right.\right.$
$\left.\left.\text{ARG-ST} \quad \langle\rangle\right]\right]$

Definite nouns such as *to-podilato* 'the bike' can be derived from lexemic types by lexical rules (Sag & Wasow 1999; Ginzburg & Sag 2000). Alternatively, their relation to lexemes can be captured by a type system where words are simultaneously classified along two dimensions: lexeme and inflection (Miller & Sag 1997; Abeillé et al. 1998; Bouma et al. 1998). Taking the latter approach, we can define two types of nouns: *pl-n-wd* (*plain-noun-word*) and *def-n-wd* (*definite-noun-word*). The PHONOLOGY value of *pl-n-wd* is an inflected form that bears no definite prefix. It is computed by a function $F_{M'}$ that takes as its argument the lexeme's PHONOLOGY value, as shown in (33b).[27] A plain noun word may, nonetheless, integrate information borne by lexemic types such as *def-intr-n-lx* in (32c) and, thus, be specified for a *def-ss* argument. Alternatively, it integrates the constraints on 'plain' types such as *pl-intr-n-lx* (32e) and does not select for such an argument. The PHONOLOGY value of *def-n-wd*, on the other hand, incorporates a definite prefix. It is computed by a two place function ($F_{\textit{def-pref}}$) shown in (33c), $\boxed{1}$ being the lexeme's PHONOLOGY value and $\boxed{2}$ its ARG-ST value. Crucially, all definite noun words inherit the constraints associated

[27] To account for plain noun words that bear a possessive suffix, $F_{M'}$ must be defined as a two place function, the first argument being the lexeme's PHONOLOGY value and the second the ARG-ST list. The latter may, nonetheless, be specified for a definite affix argument (see below). The ARG-ST list must, therefore, be partitioned into a first (leftmost) member (of type *def-ss*) and the rest (a non-empty or empty list). The second argument of the function should actually correspond to the latter sublist, rather than to the whole of the ARG-ST list.

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with 'definite' lexemic types such as *def-intr-n-lx*, and the first member of their ARG-ST list is a *def-ss* object.

(33) (a)
$$\begin{bmatrix} \textit{lexeme} & \\ \text{PHONOLOGY} & \boxed{1} \\ \text{ARG-ST} & \boxed{2} \end{bmatrix}$$

(b)
$$\begin{bmatrix} \textit{pl-n-wd} & \\ \text{PHONOLOGY} & \left\langle F_{M'} \left(\boxed{1} \right) \right\rangle \\ \text{ARG-ST} & \boxed{2} \end{bmatrix}$$

(c)
$$\begin{bmatrix} \textit{def-n-wd} & \\ \text{PHONOLOGY} & \left\langle F_{\textit{def-pref}} \left(\boxed{2}, \boxed{1} \right) \right\rangle \\ \text{ARG-ST} & \left\langle \boxed{2} \textit{def-ss} \right\rangle \oplus \textit{list} \end{bmatrix}$$

I further assume that ARG-ST lists can be related to the valence features (SPR and COMPS) in two possible ways, illustrated in (34) below. In (34a), the first argument (of type *def-ss*) is not realized on the SPR list. By contrast, (34b) ensures that all the arguments are realized on the appropriate valence lists.

(34) (a)
$$\begin{bmatrix} \text{SS} \mid \text{LOC} \mid \text{CAT} & \begin{bmatrix} \text{SPR} & \langle\rangle \\ \text{COMPS} & \boxed{A} \end{bmatrix} \\ \text{ARG-ST} & \left\langle \textit{def-ss} \right\rangle \oplus \boxed{A} \end{bmatrix}$$

(b)
$$\begin{bmatrix} \text{SS} \mid \text{LOC} \mid \text{CAT} & \begin{bmatrix} \text{SPR} & \boxed{A} \left(\textit{def-ss} \right) \\ \text{COMPS} & \boxed{B} \end{bmatrix} \\ \text{ARG-ST} & \boxed{A} \oplus \boxed{B} \end{bmatrix}$$

Definite and plain noun words can, thus, be partitioned into saturated and unsaturated ones, depending on whether their SPR list is empty or a definite affix argument is realized on that list, respectively. Briefly, saturated definite nouns (*to-podilato* 'the bike') form 'complete' or 'maximal' NPs. By the composition method, the non-empty SPR list of an unsaturated definite noun is inherited by a 'higher' head (adjective or numeral), giving rise to a polydefinite (*to-kokino to-podilato* 'the red bike'). Saturated plain nouns occur in indefinites (*kokino podilato*, *ena kokino podilato* 'a red bike'), whereas an SPR $\langle \textit{def-ss} \rangle$ specification on an unsaturated plain noun word

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is inherited by a 'higher' head, giving rise to a monadic definite (*to-kokino podilato* 'the red bike'). The lexical descriptions in (35) illustrate the types *sat-def-n-wd* (*saturated-definite-noun-word*), *unsat-def-n-wd* (*unsaturated-definite-noun-word*), *sat-pl-n-wd* (*saturated-plain-noun-word*), and *unsat-pl-n-wd* (*unsaturated-plain-noun-word*), respectively.

(35) (a)
$$\begin{bmatrix} \textit{sat-def-n-wd} & \\ \text{PHON} & \langle \text{to-podilato} \rangle \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \langle \textit{def-ss} \rangle \oplus \boxed{\text{C}} \end{bmatrix}$$

(b)
$$\begin{bmatrix} \textit{unsat-def-n-wd} & \\ \text{PHON} & \langle \text{to-podilato} \rangle \\ \text{SPR} & \langle \boxed{1} \textit{def-ss} \rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \boxed{1} \oplus \boxed{\text{C}} \end{bmatrix}$$

(c)
$$\begin{bmatrix} \textit{sat-pl-n-wd} & \\ \text{PHON} & \langle \text{podilato} \rangle \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \boxed{\text{C}} \end{bmatrix}$$

(d)
$$\begin{bmatrix} \textit{unsat-pl-n-wd} & \\ \text{PHON} & \langle \text{podilato} \rangle \\ \text{SPR} & \langle \boxed{1} \textit{def-ss} \rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \boxed{1} \oplus \boxed{\text{C}} \end{bmatrix}$$

The monadic *to-podilato* in (35a) qualifies as a complement of nominal-taking predicates, as well as certain determiners and demonstratives (see (28)

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above). All of the latter select for phrases subsumed under *nominal*, as shown in the previous section. The *def-ss* object on the ARG-ST list does not appear on SPR, and is morphologically rather than syntactically realized. The empty SPR list entails that no adjective (or numeral) head can inherit the noun's requirement for a *def-ss* argument by means of composition. Unless entirely flat structures were to be postulated – and there is no independent motivation for such a move – the noun's ARG-ST list could not become available to a higher adjective or numeral head: ARG-ST is a feature defined for *lex-sign* objects, which in turn subsume *lexeme* and *word*, but not *phrase* (Ginzburg & Sag 2000, among many others). The SPR, on the other hand, is a valence feature that propagates from the lexical head onto its phrasal projection by the Generalized Head Feature Principle (GHFP) given in (36) – a constraint on headed-phrases (*hd-ph*) (Ginzburg & Sag 2000). (The '/' notation indicates that this constraint is formulated in defeasible terms and can, therefore, be overriden by specific subtypes of *hd-ph* that posit contradictory requirements.[28])

(36) Generalized Head Feature Principle (GHFP)
hd-ph:
[synsem /$\boxed{1}$]→… **h**[SYNSEM /$\boxed{1}$]

(35b) bears a non-empty SPR list that is identified by the GHFP with that of its phrasal projection. This enables an adjective (or numeral) functor to inherit its NP argument's unsaturated specifier and give rise to a polydefinite. (A detailed example is presented below.) This is a situation that never arises in the case of possessives. A clitic morphology word (that is, a word bearing a possessive suffix) is required to carry no affixes in its valence features, which ensures that the possessive argument cannot be realized more than once in a given phrase. Although in (35b) the *def-ss* object appears on both ARG-ST and SPR, it cannot, however, be realized both in the morphology as a definite prefix and in the syntax as a specifier phrase, due to independent constraints in the grammar such as the Principle of Canonicality in (37) (Ginzburg & Sag 2000) and the feature declaration in (38).

(37) Principle of Canonicality
sign ⇒ [SYNSEM *canon-ss*]

(37) is a constraint on signs that requires their SYNSEM value to be of type *canonical-synsem* (*canon-ss*).[29] It interacts with (38), the feature declaration for *phrase*, which ensures that all daughters of a given phrase must be of type

[28] For instance, *hd-comp-ph* permits a lexical head to combine with as many complements as it selects via the COMPS feature. It violates (36) in that the COMPS value of the mother is empty, as opposed to the non-empty COMPS value on the lexical head daughter, but maintains identity in all other synsem features of the mother and head daughter, in accordance with the GHFP.

[29] The Principle of Canonicality can be directly built into the type declaration for *sign*.

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sign. As shown in the next section, definite affixes are not signs, neither are they specified for a SYNSEM value of type *canon-ss*, and, thus, do not qualify as daughters in a given phrase.

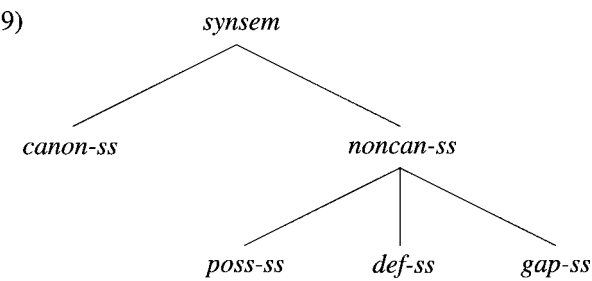
(38)
$$\begin{bmatrix} \textit{phrase} \\ \text{DTRS} \quad \textit{list(sign)} \end{bmatrix}$$

(35c), with an empty SPR list, subsumes all nouns that occur in indefinites and which neither bear nor trigger definite affixation. Finally, (35d) is specified for a non-empty SPR list. The *def-ss* object on that list propagates to the phrasal level by the GHFP and becomes accessible to adjectives or numerals of the composition sort. Thus, examples such as *ta-kokina podilata* 'the red bikes' or *ta-tria kokina podilata* 'the-three red bikes' are generated.

4.3.3 def-ss: *CATEGORY features*

In this section I present a preliminary version of the definite affix, focusing on its category features. I assume that definite affixes are on a par with possessive affixes and gaps in that they are subsumed under *noncanonical-synsem* (*non-can-ss*) in the following hierarchy of synsem types (Sag 1997; Ginzburg & Sag 2000):

(39)



As illustrated in (40), *def-ss* is specified for the head features AGR and CASE, which can, therefore, be unified with the corresponding features of its host. Its valence lists are empty, since it imposes no subcategorization requirements.

(40)
$$\begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{def} & \\ \text{AGR} & \boxed{a} \\ \text{CASE} & \boxed{c} \end{bmatrix} \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \end{bmatrix}$$

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It is worth emphasizing that (40) makes no reference to the feature SPEC, employed in previous HPSG accounts of determiners (e.g. Pollard & Sag 1994; Ginzburg & Sag 2000) and criticized in Kolliakou (1995). Lexical specification suffices for a head noun to unify its AGR and CASE values with those of its definite affix argument. Moreover, selection of the head's content by means of the specifier's SPEC in order to incorporate the modifiers' semantic contribution is redundant: adjectives are treated as heads here, and, therefore, their semantic contribution to the phrase they appear in is directly incorporated by the GHFP. This point is amplified in section 5 below.

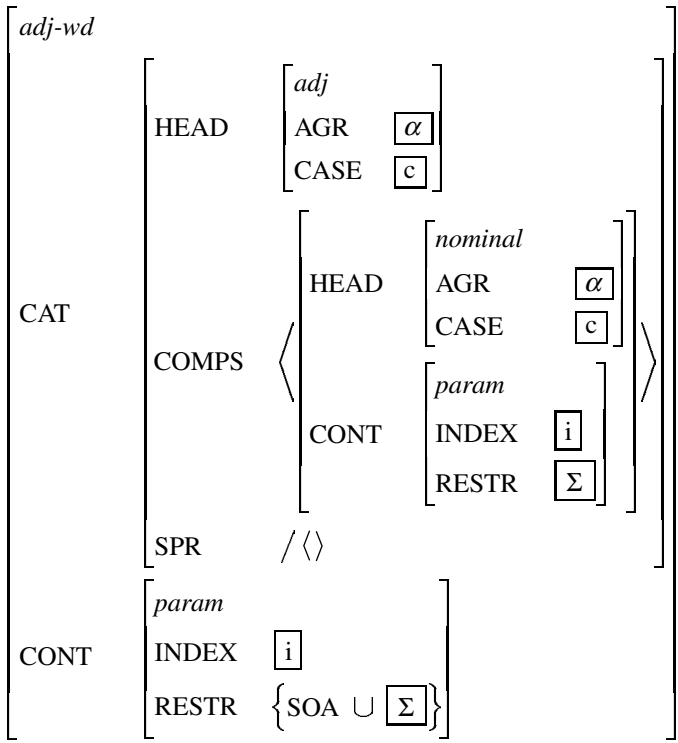
4.3.4 *Adjectives*

The account of adjectives proposed here is based on the following assumptions:

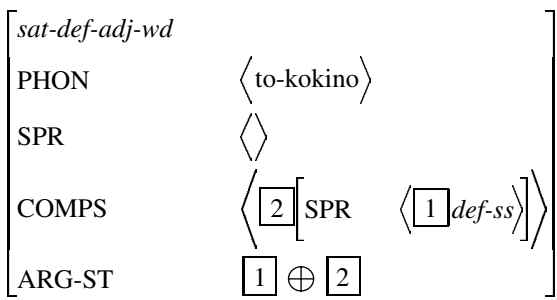
(a) There exist definite and plain adjectival forms, a generalization that can be captured by the types *def-adj-wd* (*definite-adjective-word*) and *pl-adj-wd* (*plain-adjective-word*) that are analogous to *def-n-wd* and *pl-n-wd* shown above.
(b) Adjectives of type *def-adj-wd* select for an unsaturated *nominal* complement and inherit its SPR ⟨*def-ss*⟩ specification, whereas adjectives of type *pl-adj-wd* are partitioned into those that select for a saturated complement and those that are like adjectives of type *def-adj-wd*.
(c) As in the case of nouns, ARG-ST lists can be related to valence lists in two possible ways: (i) all the arguments are realized on the appropriate valence lists, or (ii) the first argument (a definite affix) is not realized on the SPR list, whereas the rest of the ARG-ST list (which can be empty) is identified with the COMPS list.

In addition, following previous work in HPSG, all attributive adjectives inherit the constraints integrated into the lexical description in (41) below. Therefore, they all select for an NP or an AP complement (both subsumed under the head type *nominal*), unify its CASE, AGR and INDEX values (□*c*, □α and □*i*, respectively) with their own, and add its restriction set of soas (states of affairs) □Σ to their own. Case concord and agreement in number, gender and person are directly accounted for, and the semantics of the phrase is compositionally derived from the semantics of its constituents. Finally, adjectives inherit the default constraint that their SPR list should be empty, unless otherwise specified.

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(41)


Definite and plain adjective words are partitioned into saturated and unsaturated ones, depending on whether their SPR is the empty list or a *def-ss* argument is realized on that list, respectively. The lexical descriptions in (42a–d) below correspond to the types *sat-def-adj-wd* (*saturated-definite-adjective-word*), *unsat-def-adj-wd* (*unsaturated-definite-adjective-word*), *sat-pl-adj-wd* (*saturated-plain-adjective-word*) and *unsat-pl-adj-wd* (*unsaturated-plain-adjective-word*).

(42) (a)


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(b)
$$\begin{bmatrix} \textit{unsat-def-adj-wd} & \\ \text{PHON} & \langle \text{to-kokino} \rangle \\ \text{SPR} & \langle \boxed{1}\ \textit{def-ss} \rangle \\ \text{COMPS} & \left\langle \boxed{2}\begin{bmatrix}\text{SPR} & \langle \boxed{1} \rangle\end{bmatrix} \right\rangle \\ \text{ARG-ST} & \boxed{1} \oplus \boxed{2} \end{bmatrix}$$

(c)
$$\begin{bmatrix} \textit{sat-pl-adj-wd} & \\ \text{PHON} & \langle \text{kokino} \rangle \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \left\langle \boxed{1}\begin{bmatrix}\text{SPR} & \langle\rangle\end{bmatrix} \right\rangle \\ \text{ARG-ST} & \boxed{1} \end{bmatrix}$$

(d)
$$\begin{bmatrix} \textit{unsat-pl-adj-wd} & \\ \text{PHON} & \langle \text{kokino} \rangle \\ \text{SPR} & \langle \boxed{1}\ \textit{def-ss} \rangle \\ \text{COMPS} & \left\langle \boxed{2}\begin{bmatrix}\text{SPR} & \langle \boxed{1} \rangle\end{bmatrix} \right\rangle \\ \text{ARG-ST} & \boxed{1} \oplus \boxed{2} \end{bmatrix}$$

Consider first *to-kokino* in (42a). It selects for an unsaturated complement (2) and attracts the *def-ss* object (1) that appears on the SPR list of the latter. The affix is morphologically realized on the adjective, whereas the empty SPR list ensures that the mother phrase cannot be further 'divided' into an unsaturated AP and a *def-ss* argument. Saturated definite adjectives project phrases that qualify as complements of nominal-taking heads and can be selected by determiners such as *ola* 'all' and demonstratives such as *afta* 'these' (see example (28) above). Adjectives such as in (42a) can combine with both definite and plain NPs or APs, yielding all of the combinations in (43).

(43) (a) [to-kokino [podilato]] 'the red bike'
(b) [to-kokino [to-podilato]]

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(c) [to-kenurio [kokino [podilato]]] 'the new red bike'
(d) [to-kenurio [to-kokino [podilato]]]
(e) [to-kenurio [to-kokino [to-podilato]]]

In (42b), the inherited *def-ss* object (1) is both morphologically realized on the adjective and present on the adjective's SPR list, overriding the default constraint for an empty specifier in (41) above. Therefore, adjectives of this kind yield APs that can be 'divided' by higher heads in terms of composition. (42b) is on a par with (42a) in that it can combine with definite or plain NPs and APs. Because (42b) is unsaturated, it does not yield 'complete' phrases that qualify as arguments, but rather gives rise to strings that may involve one or more definite affixes. For example, both *to-kokino podilato* and *to-kokino to-podilato* 'the red bike' are specified [SPR ⟨*def-ss*⟩] if headed by an unsaturated definite adjective (*to-kokino*) and can, thus, function as complements of a saturated definite adjective (*to-kenurio*), as, for instance, in examples (43d, e) above.

Moving to the plain types, adjectives like *kokino* in (42c) occur in indefinites and neither bear nor trigger definite marking. They select for saturated NPs or APs, but, as will be illustrated in the next section, they are blocked from taking complements headed by *sat-def-n-wd* or *sat-def-adj-wd*.

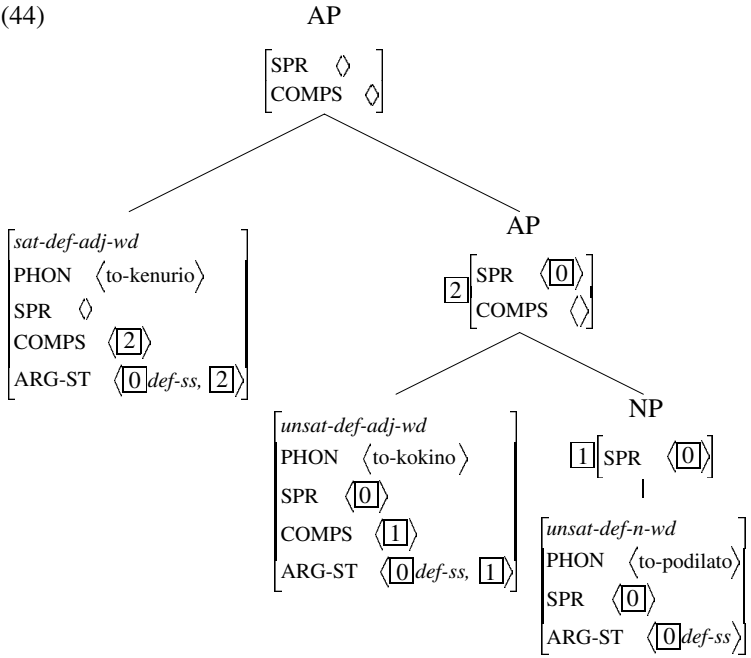
Finally, unsaturated plain adjectives like (42d) bear no definite prefix, but they attract the *def-ss* argument of their nominal complement and make it accessible for further composition. They are also blocked from taking definite complements, due to an additional constraint to be introduced in section 4.4.1.

4.3.5 *Examples*

The tree in (44) below illustrates the derivation of the polydefinite *to-kenurio to-kokino to-podilato* 'the new red bike'. The three definite words, *to-kenurio*, *to-kokino* and *to-podilato*, are like (42a), (42b) and (35b), respectively. The specifier requirement 0 propagates from the noun to the NP and from the unsaturated adjective *to-kokino* to its mother by the GHFP, both noun and adjective being the syntactic heads in their phrases.

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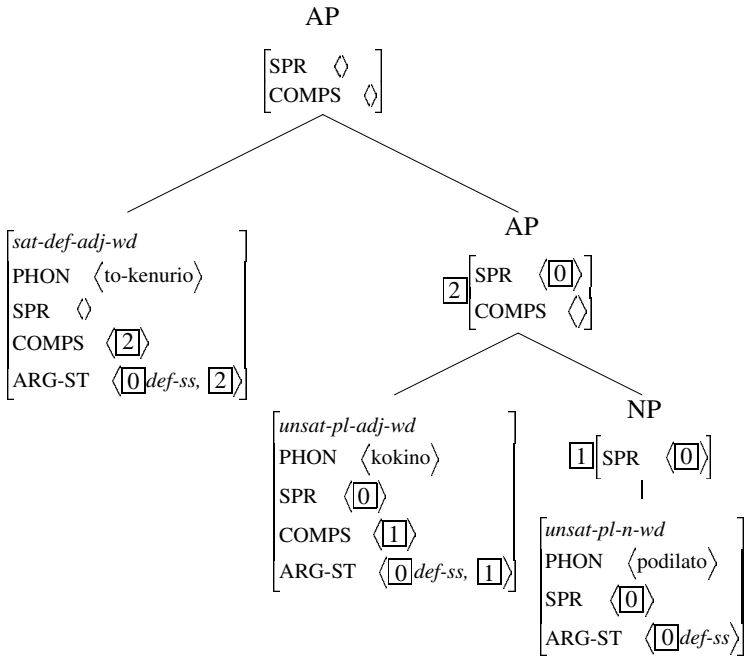
(44)



Consider next the monadic *to-kenurio kokino podilato* in the tree in (45). Here, *kokino* and *podilato* are of the unsaturated plain type ((42d) and (35d), respectively) and, thus, the requirement for a definite affix becomes available at the top, without having been previously realized. As before, the saturated adjective *to-kenurio* is like (42a) and, therefore, both morphologically realizes the inherited definite affix and terminates its propagation. In all other respects, the two constructions are uniform, and they are sensitive to the same grammatical constraints.

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(45)



4.4 *Further constraints*

In this section, I address two remaining syntactic issues: (a) definite concord in polydefinites, and (b) linear order. I introduce a novel feature, DEF, which plays a crucial role in the account of both definite concord and linear order.

4.4.1 *Definite concord*

As illustrated above, no definite constituent within a polydefinite can be modified by a 'plain' (non-definite) adjective. The relevant examples are repeated in (46).

(46) (a) [**ta**-kenuria [**ta**-kokina podilata]] 'the new red bikes'
(b) [**ta**-kenuria [**ta**-kokina [**ta**-podilata]]]
(c) *[**ta**-kenuria [kokina [**ta**-podilata]]]
(d) [[**ta**-kenuria podilata]] **ta**-kokina]
(e) [**ta**-kenuria [**ta**-podilata [**ta**-kokina]]]
(f) *[[**ta**-kenuria [**ta**-podilata]] kokina]

Definite concord poses a challenge for previous analyses. For instance, it is unclear how the ill-formedness of (47b) (=(46c)) can be accounted for within Androutsopoulou's (1995) approach: Def^0 is allowed to remain phonologically unrealized in order to derive monadics (47a).

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(47) (a) $[_{DefP}$ ta $[_{AP}$ kokina $[_{DefP} \emptyset [_{NP}$ podilata]]]] 'the red bikes'
(b) $[_{DefP}$ *ta $[_{AP}$ kenuria $[_{DefP} \emptyset [_{AP}$ kokina $[_{DefP}$ ta $[_{NP}$ podilata]]]]]]

Similarly for Alexiadou & Wilder's (1998) analysis that associates polydefinites with a reduced relative structure, and monadics with the standard DP. As already pointed out in the introduction, their grammar cannot block monadic definites from realizing the reduced relative alternative, as in (48a). For reasons related to word order, indefinite determiners are also taken to project this structure in Alexiadou & Wilder's account, and deletion at PF is assumed to derive the fact that multiple indefinite determiner constructions do not exist (48b, c). However, once deletion enters the picture, it is entirely unclear how definite articles can be spared or selectively deleted, so as to ensure that ill-formed strings such as (48d) are not generated.

(48) (a) $[_{DP}$ to $[_{CP}$ megalo$_i$ $[_{IP}$ $[_{DP} \emptyset [_{CP}$ kokino$_j$ $[_{IP}$ $[_{DP} \emptyset$ podilato] t$_j$]]] t$_i$]]]
'the big red bike'
(b) $[_{DP}$ ena $[_{CP}$ megalo$_i$ $[_{IP}$ $[_{DP} \emptyset [_{CP}$ kokino$_j$ $[_{IP}$ $[_{DP} \emptyset$ podilato] t$_j$]]] t$_i$]]]
'a big red bike'
(c) *$[_{DP}$ ena $[_{CP}$ megalo$_i$ $[_{IP}$ $[_{DP}$ ena $[_{CP}$ kokino$_j$ $[_{IP}$ $[_{DP}$ ena podilato] t$_j$]]]
t$_i$]]]
(d) *$[_{DP}$ to $[_{CP}$ megalo$_i$ $[_{IP}$ $[_{DP} \emptyset [_{CP}$ kokino$_j$ $[_{IP}$ $[_{DP}$ to podilato] t$_j$]]] t$_i$]]]

The current approach, as it stands, provides no means for excluding the ungrammatical (46c, f) above. In both cases, a plain adjective *kokina* is combined with a definite phrase (*ta-podilata* and *ta-kenuria ta-podilata*, respectively), violating definite concord. In order to prevent adjectives from taking incompatible complements, definiteness must be registered syntactically on phrases, in addition to its being morphologically realized on words. I introduce a novel head feature, DEF, which is defined for objects of sort *nominal*, as shown in the feature declaration in (49). A specification [DEF +] signifies that a given NP or AP involves a definite head, whereas [DEF −] signifies the opposite. The requirement for definite concord can, in turn, be directly stated on adjectival types.

(49) $\begin{bmatrix} \textit{nominal} \\ \\ \text{DEF} \quad \textit{boolean} \end{bmatrix}$

Definite nouns and adjectives are [DEF +], whereas their plain counterparts are [DEF −], a constraint that can be stated on the types in (35) and (42). DEF being a head feature, it propagates by the GHFP, thus yielding phrases such as *ta-podilata*, *ta-kokina podilata* and *ta-kokina ta-podilata*, which are marked [DEF +], and phrases such as *podilata* and *kokina podilata*, marked [DEF −]. Plain adjectives are, in turn, required to select for

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[DEF −] complements, contrary to definite adjectives, which are compatible with both [DEF +] and [DEF −] phrases. The lexical descriptions in (42) above can now be modified as follows:

(50) (a)
$$\begin{bmatrix} \textit{sat-def-adj-wd} & \\ \text{PHON} & \langle \text{to-kokino} \rangle \\ \text{HEAD} & \begin{bmatrix} \text{DEF} & + \end{bmatrix} \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \left\langle \boxed{2} \begin{bmatrix} \text{SPR} & \langle \boxed{1}\ \textit{def-ss} \rangle \end{bmatrix} \right\rangle \\ \text{ARG-ST} & \langle \boxed{1}, \boxed{2} \rangle \end{bmatrix}$$

(b)
$$\begin{bmatrix} \textit{unsat-def-adj-wd} & \\ \text{PHON} & \langle \text{to-kokino} \rangle \\ \text{HEAD} & \begin{bmatrix} \text{DEF} & + \end{bmatrix} \\ \text{SPR} & \langle \boxed{1}\ \textit{def-ss} \rangle \\ \text{COMPS} & \left\langle \boxed{2} \begin{bmatrix} \text{SPR} & \langle \boxed{1} \rangle \end{bmatrix} \right\rangle \\ \text{ARG-ST} & \langle \boxed{1}, \boxed{2} \rangle \end{bmatrix}$$

(c)
$$\begin{bmatrix} \textit{sat-pl-adj-wd} & \\ \text{PHON} & \langle \text{kokino} \rangle \\ \text{HEAD} & \begin{bmatrix} \text{DEF} & - \end{bmatrix} \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \left\langle \boxed{1} \begin{bmatrix} \text{HEAD} \mid \text{DEF} & - \\ \text{SPR} & \langle\rangle \end{bmatrix} \right\rangle \\ \text{ARG-ST} & \langle \boxed{1} \rangle \end{bmatrix}$$

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(d) $\begin{bmatrix} \textit{unsat-pl-adj-wd} & \\ \text{PHON} & \langle \text{kokino} \rangle \\ \text{HEAD} & [\text{DEF} \ -] \\ \text{SPR} & \langle \boxed{1} \textit{def-ss} \rangle \\ \text{COMPS} & \left\langle \boxed{2} \begin{bmatrix} \text{HEAD} \mid \text{DEF} & - \\ \text{SPR} & \langle \boxed{1} \rangle \end{bmatrix} \right\rangle \\ \text{ARG-ST} & \langle \boxed{1}, \boxed{2} \rangle \end{bmatrix}$

And similarly for nouns:

(51) (a) $\begin{bmatrix} \textit{sat-def-n-wd} & \\ \text{PHON} & \langle \text{to-podilato} \rangle \\ \text{HEAD} & [\text{DEF} \ +] \\ \text{SPR} & \langle \rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \langle \textit{def-ss} \rangle \oplus \boxed{\text{C}} \end{bmatrix}$

(b) $\begin{bmatrix} \textit{unsat-def-n-wd} & \\ \text{PHON} & \langle \text{to-podilato} \rangle \\ \text{HEAD} & [\text{DEF} \ +] \\ \text{SPR} & \langle \boxed{1} \textit{def-ss} \rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \langle \boxed{1} \rangle \oplus \boxed{\text{C}} \end{bmatrix}$

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(c)
$$\begin{bmatrix} \textit{sat-pl-n-wd} & \\ \text{PHON} & \langle \text{podilato} \rangle \\ \text{HEAD} & [\text{DEF } -] \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \boxed{\text{C}} \end{bmatrix}$$

(d)
$$\begin{bmatrix} \textit{unsat-pl-n-wd} & \\ \text{PHON} & \langle \text{podilato} \rangle \\ \text{HEAD} & [\text{DEF } -] \\ \text{SPR} & \langle \boxed{1}\ \textit{def-ss} \rangle \\ \text{COMPS} & \boxed{\text{C}} \\ \text{ARG-ST} & \langle \boxed{1} \rangle \oplus \boxed{\text{C}} \end{bmatrix}$$

The revised types ensure that the ill-formed strings in (46c, f) above are blocked. The plain *kokina* in (46c) cannot combine with *ta-podilata*, since the former selects for a [DEF −] complement, whereas the latter is [DEF +]; and similarly for *kokina* in (46f).

Note finally that adjectives such as *perifanos* 'proud' can be excluded from the polydefinite construction if they are required to select for a [DEF −] nominal complement, in addition to the prepositional phrase.

4.4.2 *Linear order constraints*

Apart from playing a crucial role in the account of definite concord, DEF is independently required for stating word order constraints. Most accounts of monadic definites and polydefinites are faced with problems concerning how to derive the relative order of adjectives and nouns in the two constructions. Recall that adjectives must strictly occur prenominally in monadics, though they can precede or follow the noun in polydefinites. On the other hand, word order is unconstrained in indefinites. Thus, we have the data in (52).

(52) (a) [to-kokino [podilato]] 'the red bike'
(b) *[[podilato] to-kokino]
(c) *[[to-podilato] kokino]

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(d) *[kokino [to-podilato]]
(e) [to-kokino [to-podilato]]
(f) [[to-podilato] to-kokino]
(g) [ena [kokino [podilato]]] 'a red bike'
(h) [ena [[podilato] kokino]]

A single linear precedence constraint, stated in (53) below, suffices to account for the word order pattern in (52). (53) specifies that the adjective should precede its sister in case the latter is both [DEF −] and unsaturated, i.e. its SPR list contains a definite affix.

(53) $\left[\text{HEAD} \quad adj\right] \prec \left[\begin{array}{ll}\text{DEF} & -\\ \text{SPR} & \langle def\text{-}ss \rangle\end{array}\right]$

In both (52a, b), the head noun *podilato* is of type *unsat-pl-n-wd* and, therefore, specified as both [DEF −] and SPR ⟨*def-ss*⟩. (Had the noun been saturated (SPR ⟨ ⟩), the adjective would not have inherited the definite affix.) (52a) conforms to the linear order constraint in (53) for the adjective occurs prenominally, whereas (52b) violates it. (52c, d) are blocked, since the head adjective *kokino*, of type *sat-pl-adj-wd*, cannot combine with a [DEF +] complement in the first place, as stated in (50c) above. (53) does not affect (52e, f): the adjective's sister is [DEF +] in both cases. Of (52g, h), though at first sight only (52g) appears to be consistent with the linear precedence constraint – the adjective follows an indefinite noun in (52h) – our grammar can, in fact, generate both types of examples. No matter whether indefinites are bare or headed by a determiner, as in (52g, h), the valence lists of the AP involved (*kokino podilato*, *podilato kokino*) are empty, which in turn entails that the embedded NP must bear an empty SPR. (Were the SPR of the embedded noun non-empty, the adjective would inherit a definite affix, i.e. it would be of type *unsat-pl-adj-wd*, and its phrasal projection would not qualify as an argument.) Therefore, (53) is not relevant for (52g, h), for it only applies when the adjective's sister is SPR ⟨*def-ss*⟩. Notice, finally, that the category following ≺ in (53) is underspecified and can, thus, be resolved as either NP or AP. The following pattern of grammaticality can, therefore, also be accounted for:

(54) (a) [to-kenurio [$_{AP}$ kokino podilato]] 'the new red bike'
(b) *[[$_{AP}$ kokino podilato] to-kenurio]
(c) *[[$_{AP}$ to-kokino podilato] kenurio]
(d) *[kenurio [$_{AP}$ to-kokino podilato]]
(e) [to-kenurio [$_{AP}$ to-kokino podilato]]
(f) [[$_{AP}$ to-kokino podilato] to-kenurio]
(g) [to-kenurio [$_{AP}$ to-kokino to-podilato]]
(h) [[$_{AP}$ to-kokino to-podilato] to-kenurio]

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(i) [[$_{AP}$ to-podilato to-kokino] to-kenurio]
(j) [to-kenurio [$_{AP}$ to-podilato to-kokino]]
(k) [ena [kenurio [kokino podilato]]] 'a new red bike'
(l) [ena [[kokino podilato] kenurio]]
(m) [ena [kenurio [podilato kokino]]]
(n) [ena [[podilato kokino] kenurio]]

(54a–d) are as (52a–d).[30] The definite adjective *to-kenurio* can precede or follow the (unsaturated) monadic definite *to-kokino podilato* in (54e, f). Similarly, *to-kenurio* can precede or follow the (unsaturated) polydefinites *to-kokino to-podilato* and *to-podilato to-kokino* in (54g–j); in all cases in (54e–j), the linear precedence constraint (53) does not apply because the adjective's sister is [DEF +]. Finally, the plain adjective *kenurio* can precede or follow the saturated indefinites *kokino podilato* and *podilato kokino* in (54k–n); in these cases, (53) does not apply, for SPR on the complement phrase is empty.

Before closing this section, it is worth making a final point. Both Androutsopoulou (1995) and Alexiadou & Wilder (1998) make the claim that adjectives in Greek are sensitive to the hierarchy in (55), from Sproat & Shih (1988).

(55) Quality ≺ Size ≺ Shape/Colour ≺ Provenance
the beautiful big red Chinese vase

Androutsopoulou takes (56a) below to be the base order, in accordance with (55). (Note that she does not explicate how exactly the generalization stated in (55) can be integrated into the grammar.) (56b–e) are assumed to be derived by movement of subordinate DefPs to superordinate [Spec, DefP] positions. (56f) cannot be derived from (56a) and it is taken to be unacceptable, since it violates (55).

(56) (a) [$_{DefP3}$ to megalo [$_{DefP2}$ to kokino [$_{DefP1}$ to podilato]]]
'the big red bike'
(b) [$_{DefP3}$ to megalo [$_{DefP2}$ [$_{DefP1}$ **to podilato**] to kokino –]]
(c) [$_{DefP3}$ [$_{DefP2}$ **to kokino** [$_{DefP1}$ **to podilato**]] to megalo –]
(d) [$_{DefP3}$ [$_{DefP1}$ **to podilato**] to megalo [$_{DefP2}$ – to kokino –]]
(e) [$_{DefP3}$ [$_{DefP2}$ [$_{DefP1}$ **to podilato**] **to kokino** –] to megalo –]
(f) (*)[$_{DefP3}$ to kokino [$_{DefP2}$ to megalo [$_{DefP1}$ to podilato]]]

Alexiadou & Wilder adopt Androutsopoulou's account of linear order but they allow for both of the orderings in (56a) and (56f), although they claim

[30] (54c) cannot be analysed as *[$_{AP}$ to-kokino [podilato kenurio]] either: *podilato* must be SPR ⟨*def-ss*⟩ in order for *to-kokino* to attract its unsaturated definite article. Thus, *kenurio* must precede it by the constraint in (53).

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that the latter is marked. Their analysis, however, makes a counterintuitive prediction. Taking (56a) as the base order (itself the output of AP raising in their Kayne-style approach), the marked order (56f) cannot be derived, as shown above. On the other hand, taking (56f) as the base order, the unmarked order (56a) cannot be derived, as shown in (57).

(57) (a) [$_{DP3}$ to kokino [$_{DP2}$ to megalo [$_{DP1}$ to podilato]]] (=(56f))
(b) [$_{DP3}$ to kokino [$_{DP2}$ [$_{DP1}$ **to podilato**] to megalo –]]
(c) [$_{DP3}$ [$_{DP2}$ **to megalo** [$_{DP1}$ **to podilato**]] to kokino –]
(d) [$_{DP3}$ [$_{DP1}$ **to podilato**] to kokino [$_{DP2}$ – to megalo –]]
(e) [$_{DP3}$ [$_{DP1}$ **to podilato**] [$_{DP2}$ to megalo –] to kokino –]
(f) (*)[$_{DP3}$ to megalo [$_{DP2}$ to kokino [$_{DP1}$ to podilato]]] (=(56a))

For a start, unless both (57a) (=(56f)) and (57f) (=56a)) are taken to form base orders, only five patterns are generated. However, positing two base orders is not a standard assumption in derivational frameworks. To this effect, Alexiadou & Wilder suggest that the 'marked order arises through the choice of an alternative base-generated hierarchy' (the one reflected in (57a)). Notice though that all the patterns in (57b–e) should be perceived as equally marked – this is NOT the case – since they are derived from the (marked) base order (57a). (57b–e) can, nonetheless, also be derived from the unmarked base order (56a). That is, Alexiadou & Wilder's analysis not only gives rise to a substantial amount of spurious ambiguity, but in addition it predicts that four orderings are at the same time both marked and unmarked. This obviously defeats the purpose of talking about markedness.

The account proposed here, as it currently stands, makes no claims concerning the relative order of adjectives inside Greek nominals. That is, it allows for all the options in (58).

(58) (a) [to megalo [to kokino to podilato]]
(b) [to megalo [to podilato to kokino]]
(c) [[to podilato to kokino] to megalo]
(d) [[to podilato to megalo] to kokino]
(e) [[to kokino to podilato] to megalo]
(f) [to kokino [to megalo to podilato]]

Serialization constraints of the type expressed in the hierarchy in (55) could be easily incorporated in the current account. Since adjectives are analysed here as heads, the general semantic class (size, colour, etc.) could become available on an AP by the GHFP, so as to be selected by a higher adjectival head. For instance, *to kokino to podilato* could be marked for COLOUR so as to be selected by an adjective such as *to megalo* that is marked for SIZE, rather than vice versa. Nonetheless, no such constraints will be postulated here. All six orders in (58) are grammatical, and all should be generated. Additional

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prosodic or stylistic constraints might be required to account for the markness of (58f) relative to the other orderings.

Finally, it is suggested here that it is worth maintaining the simplicity of the current account at the cost of introducing a small amount of spurious ambiguity. Since the linear order of adjectives in polydefinites is unconstrained, the patterns illustrated in (58b, e) can also be derived, as shown in (59a, b), respectively.

(59) (a) [[to megalo to podilato] to kokino]
(b) [to kokino [to podilato to megalo]]

5. Semantics of definites

Previous accounts do not provide an explicit semantics for monadic definites and polydefinites. Some authors assume that the 'extra' definite articles of polydefinites are expletives (Androutsopoulou 1995; Alexiadou & Wilder 1998), without, however, explicating what this characterization amounts to and how the content value of a given element can sometimes be ignored while computing the compositional semantics of the phrase, without giving rise to unmotivated complexity or overgeneralization in the grammar. In Kolliakou (1995) the definite article is associated with uniqueness entailments in the sense of Gawron & Peters (1990). Nonetheless, here too no serious attempt is made to explain how the grammar accounts for the fact that in, say, *to kokino to podilato* neither of the definite constituents picks out a unique entity, instead they do this together, the entailment being that the property 'red bike' is uniquely instantiated in a local setting (the resource situation). It is instead suggested that the issue of how to filter out the semantic effect of all definite articles but one is parallel to the so-called 'projection problem' for presupposition (Kolliakou 1997a).

A further point is that previous accounts, including Kolliakou (1995), do not distinguish between monadics and polydefinites, despite clear evidence that the pragmatic import of the latter construction is quite different, as shown in section 3. Though in both *to kokino podilato* and *to kokino to podilato*, the same property 'red bike' is uniquely instantiable in the RESOURCE SITUATION, only in the latter case is the index anchored to an entity that is a proper subset of a previously introduced, salient set. In the following sections, I present a quantificational semantics for definites, based on the storage technique pioneered by Cooper (1975, 1983) and integrated into a version of HPSG that makes use of defeasible constraints (Ginzburg & Sag 2000). My approach semantically unifies definite affixes with phrasal determiners and, moreover, explicitly addresses the issue of how to ensure that the content of the definite article in polydefinites enters the semantics of the sentence just once. Finally, I employ HPSG's context attribute to account for constraints on the use of polydefinites.

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5.1 *The storage method: background*

Cooper storage, as integrated into HPSG (Pollard & Sag 1994; Pollard & Yoo 1998; Ginzburg & Sag 2000), allows a variable to go proxy for a quantifier's contribution to the semantic content of a sentence, while the quantifier that binds that variable is 'stored'. Stored quantifiers are passed up to successively 'higher' constituents in a declarative manner that is strongly reminiscent of HPSG's treatment of unbounded dependencies. Propagation can be terminated when an appropriate scope assignment locus is found. There, a quantifier may be retrieved from storage and integrated into the meaning. Quantifier scoping, therefore, depends on which syntactic constituent a quantifier is retrieved at, and on the order of its retrieval relative to other quantifiers retrieved at the same constituent.

A determiner like *every* introduces a generalized quantifier in its STORE value, as shown in (60).

(60)
$$\left[\begin{array}{l} \textit{d-lx} \\ \textsc{phon} \quad \langle \text{every} \rangle \\ \textsc{ss}\,|\,\textsc{loc} \left[\begin{array}{l} \textsc{cat}\,|\,\textsc{head} \left[\begin{array}{l} \textit{det} \\ \textsc{spec} \left[\begin{array}{ll} \textsc{index} & \boxed{i} \\ \textsc{restr} & \boxed{\sigma} \end{array}\right] \end{array}\right] \\ \textsc{cont} \quad \boxed{1} \\ \textsc{store} \left\{ \boxed{1} \left[\begin{array}{ll} \textit{every-rel} & \\ \textsc{index} & \boxed{i} \\ \textsc{restr} & \boxed{\sigma} \end{array}\right] \right\} \end{array}\right] \end{array}\right]$$

A number of points require clarification. First, STORE is a feature of *local* objects here, as in Pollard & Yoo (1998), rather than the *sign*, as in Pollard & Sag's (1994) original account. This allows stored quantifiers to be identified within raising and extraction constructions. For instance, in (61) below, the existential quantifier introduced by *a unicorn* (the subject of the raising verb *seems*) is also present in the STORE value of the (unexpressed) subjects of *to*, *be* and *approaching*, as a direct consequence of HPSG's approach to raising (Pollard & Sag 1994) that relies on unification of (subject) local values. Therefore, the index bound by that quantifier can be assigned a semantic role by the verb *approaching*.

(61) A unicorn [seems [to [be [approaching]]]].

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Moreover, defining STORE as a local feature is crucial for our purposes: it allows definite affixes, which are *noncanonical-synsem* objects, rather than objects of type *sign*, to introduce a generalized quantifier:

(62)
$$\begin{bmatrix} \textit{def-ss} \\ \text{LOC} \begin{bmatrix} \text{CONT} & \boxed{1} \\ \text{STORE} & \left\{ \boxed{1} \begin{bmatrix} \textit{the-rel} & \\ \text{INDEX} & \boxed{i} \\ \text{RESTR} & \boxed{\sigma} \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

The SPEC feature, which can be traced back to Pollard & Sag's (1994) account of NPs and which has been criticized in previous work (see Kolliakou 2003 for discussion), can be eliminated from our account of definite affixation. Saturated definite nouns can directly identify their INDEX and RESTR value with those of the *def-ss* object on their argument structure list, as shown in the lexical description in (63).

(63)
$$\begin{bmatrix} \text{PHON} & \langle \textit{to podilato} \rangle \\ \text{SS}\,|\,\text{LOC} \begin{bmatrix} \text{CONT} & \begin{bmatrix} \text{INDEX} & \boxed{i} \\ \text{RESTR} & \boxed{\sigma} \{ \textit{bike} (\boxed{i}) \} \end{bmatrix} \\ \text{ARG-ST} & \left\langle \begin{bmatrix} \textit{def-ss} & \\ \text{CONT} & \begin{bmatrix} \textit{the-rel} & \\ \text{INDEX} & \boxed{i} \\ \text{RESTR} & \boxed{\sigma} \end{bmatrix} \end{bmatrix} \right\rangle \oplus \textit{list} \end{bmatrix} \end{bmatrix}$$

Likewise for adjectives; as shown above, saturated definite adjectives inherit the specifier requirement (of type *def-ss*) of their unsaturated (plain or definite) nominal complement. The INDEX and RESTR values of such adjectives can, therefore, be directly identified with those of the 'composed' *def-ss* object on their argument structure list. Moreover, since the adjective's index is identified with that of its nominal complement and its RESTR set ($\boxed{\sigma'}$) incorporates the latter's restrictions ($\boxed{\sigma}$), the INDEX and RESTR values of the CONTENT of the *def-ss* argument (and those of the stored quantifier originating from that argument) are correctly identified; thus, we have (64).[31]

[31] Since the inherited *def-ss* object on the adjective's ARG-ST list is unified with the *def-ss* object on the unsaturated SPR of the adjective's nominal complement, the content value of

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(64)
$$\left[\begin{array}{ll}\textsc{phon} & \langle \textit{to-kokino} \rangle \\ \textsc{ss}|\textsc{loc} & \left[\begin{array}{ll}\textsc{cont} & \left[\begin{array}{ll}\textsc{index} & \boxed{i} \\ \textsc{restr} & \boxed{\sigma'}\{\textit{red}(\boxed{i}) \cup \boxed{\sigma}\}\end{array}\right] \\ \textsc{arg-st} & \left\langle \left[\begin{array}{ll}\textit{def-ss} & \\ \textsc{cont} & \left[\begin{array}{ll}\textit{the-rel} & \\ \textsc{index} & \boxed{i} \\ \textsc{restr} & \boxed{\sigma'}\end{array}\right]\end{array}\right] \right\rangle \oplus \left[\begin{array}{ll}\textsc{cat}|\textsc{head} & \textit{nominal} \\ \textsc{cont}|\textsc{restr} & \boxed{\sigma}\end{array}\right]\end{array}\right]\end{array}\right]$$

In recent versions of quantifier storage (Pollard & Yoo 1998; Ginzburg & Sag 2000), stored quantifiers are passed up to the mother in a headed phrase not through all the daughters, but only from the head daughter. A default constraint, namely, the Store Amalgamation Constraint, which is the semantic analogue of the Slash Amalgamation Constraint for syntactic unbounded dependencies, requires the STORE value of a word to be the set union of the STORE values of its ARG-ST members. A preliminary version of this constraint is presented in (65).

(65) Store Amalgamation Constraint (preliminary version)

$$\textit{word} \Rightarrow / \left[\begin{array}{ll}\textsc{ss}|\textsc{loc}|\textsc{store} & \boxed{\Sigma_1} \cup \ldots \cup \boxed{\Sigma_n} \\ \textsc{arg-st} & \left\langle \left[\textsc{store}\ \boxed{\Sigma_1}\right], \ldots, \left[\textsc{store}\ \boxed{\Sigma_n}\right] \right\rangle\end{array}\right]$$

For illustration, consider a saturated definite noun word such as *to podilato* 'the bike'. By (65), the generalized quantifier originating from the definite affix is amalgamated into the noun's STORE value, as shown in (66).

the *def-ss* objects on SPR lists all the way down the structure will be as specified by the top adjective. This does not pose any problems to the extent that unsaturated (definite and plain) nominals are not required to identify their INDEX and RESTR values with those of the *def-ss* object on their SPR list – an assumption that is being made here. This assumption is crucial for correctly defining the semantics of definites, as is explicated below.

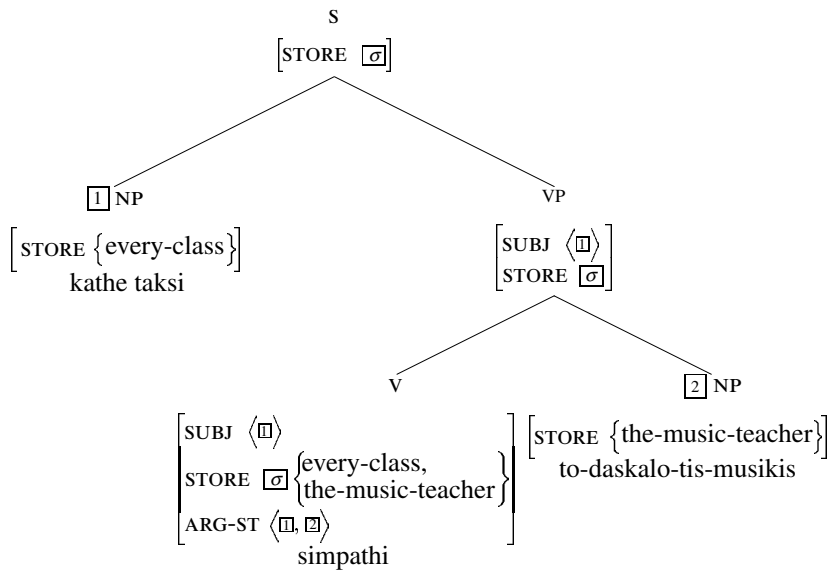
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(66)
$$\begin{bmatrix} \text{PHON} & \langle \text{to-podilato} \rangle \\ \text{SS} \mid \text{LOCAL} \mid \text{STORE} & \left\{ \boxed{1} \begin{bmatrix} \textit{the-rel} \\ \text{INDEX} & \boxed{i} \\ \text{RESTR} & \{ \textit{bike} (\boxed{i}) \} \end{bmatrix} \right\} \\ \text{ARG-ST} & \left\langle \begin{bmatrix} \textit{def-ss} \\ \text{CONT} & \boxed{1} \\ \text{STORE} & \{\boxed{1}\} \end{bmatrix} \right\rangle \end{bmatrix}$$

Once amalgamated, generalized quantifiers propagate upwards simply by the GHFP, the latter being a default constraint that unifies the SYNSEM value of the head daughter with that of the mother. The tree (67b) illustrates this propagation for the example in (67a).

(67) (a) Kathe taksi simpathi to daskalo tis musikis.
'Every class likes the music teacher.'

(b)



I am assuming here a lexical approach to quantifier retrieval along the lines of Manning et al. (1999) or Ginzburg & Sag (2000). In such accounts quantifiers can be scoped in a lexical head's QUANTS value. A revised version of the Store Amalgamation Constraint, (68), defines the QUANTS value of a word as an ordering of some set of generalized quantifiers subtracted from the union of the STORE values of the word's arguments.

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(68) Store Amalgamation Constraint (final version)

$$word \Rightarrow / \left[\begin{array}{ll} \text{SS}\,|\,\text{LOC} & \left[\begin{array}{ll} \text{CONT}\,|\,\text{QUANTS} & order(\boxed{\Sigma_0}) \\ \text{STORE} & (\boxed{\Sigma_1} \cup \ldots \cup \boxed{\Sigma_n}) - \boxed{\Sigma_0} \end{array}\right] \\ \text{ARG-ST} & \left\langle \left[\text{STORE}\ \boxed{\Sigma_1}\right], \ldots, \left[\text{STORE}\ \boxed{\Sigma_n}\right] \right\rangle \end{array}\right]$$

The two possible scopings of (67a) above correspond to two distinct orderings of the quantifiers on the QUANTS list of the verb *likes*, as in (69). In (67a), with the definite assigned wide scope, there is a unique music teacher for all classes, whereas in (69b), with the definite assigned narrow scope, there is a different music teacher for each class.[32]

(69) (a)
$$\left[\begin{array}{ll} \text{PHON} & \langle \text{likes} \rangle \\ \text{CAT}\,|\,\text{HEAD} & verb \\ \text{CONT}\,|\,\text{SOA} & \left[\begin{array}{ll} \text{QUANTS} & \langle \text{the-music-teacher}_i, \text{every-class}_j \rangle \\ \text{NUCL} & \left[\begin{array}{ll} like\text{-}rel & \\ \text{LIKER} & \boxed{j} \\ \text{LIKED} & \boxed{i} \end{array}\right] \end{array}\right] \\ \text{STORE} & \{\} \end{array}\right]$$

(b)
$$\left[\begin{array}{ll} \text{PHON} & \langle \text{likes} \rangle \\ \text{CAT}\,|\,\text{HEAD} & verb \\ \text{CONT}\,|\,\text{SOA} & \left[\begin{array}{ll} \text{QUANTS} & \langle \text{every-class}_j, \text{the-music-teacher}_i \rangle \\ \text{NUCL} & \left[\begin{array}{ll} like\text{-}rel & \\ \text{LIKER} & \boxed{j} \\ \text{LIKED} & \boxed{i} \end{array}\right] \end{array}\right] \\ \text{STORE} & \{\} \end{array}\right]$$

[32] Ginzburg & Sag (2000) posit a constraint on root clauses requiring that they should bear an empty STORE value. By the GHFP, STORE at the VP level of a root clause must be empty as well, enforcing scope assignment on the lexical verb. That is, the set difference that amounts to the STORE value in (69a, b) is the empty set, with both quantifiers being scoped in the verb's QUANTS value, and no quantifiers remaining in storage.

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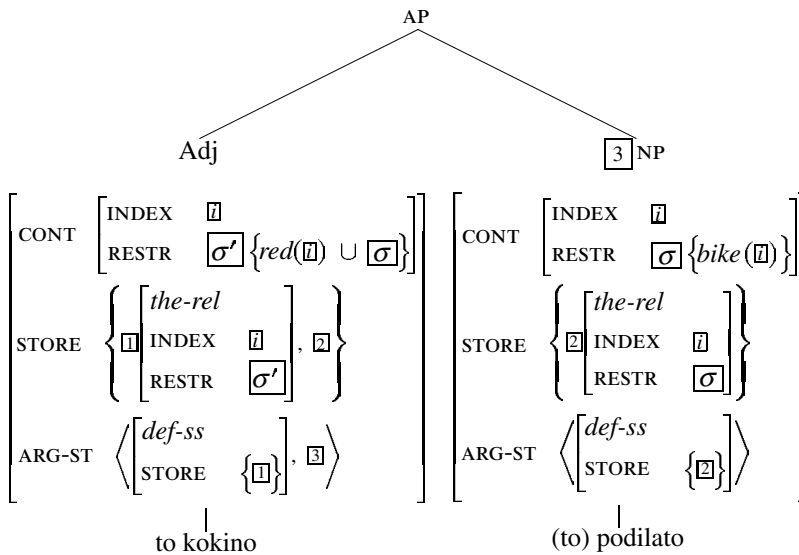
Note finally that unless the CONTENT value of a given word is of type *soa*, as, for instance, in the case of verbs, the amalgamated quantifiers cannot be assigned scope. Rather, they remain in STORE and, by the GHFP, they are passed up from head daughter to mother till a role-assigning verb provides the first scope assignment locus.

5.2 *Monadics and polydefinites*

Within this framework some additional steps must be taken to ensure that generalized quantifiers that start out in the STORE value of definite affixes do not enter the semantics of the sentence more than once. As shown in this section, monadics and polydefinites require a uniform treatment, since multiple storage of a given quantifier does not arise exclusively in the case of multiple realizations of the definite affix – that is, in polydefinites – but, given the composition analysis proposed here, it also occurs in monadics.

The tree in (70) can be employed to illustrate quantifier storage and store amalgamation in either polydefinites (*to-kokino to-podilato*) or monadics (*to-kokino podilato*).

(70)



The head daughter in (70) is an adjective of the saturated definite sort. It selects for an unsaturated complement – definite in the polydefinite example, and plain otherwise – and inherits its *def-ss* argument. Assuming that the STORE values of both members of the adjective's ARG-ST list are amalgamated into the adjective's own store, we are faced with the following problem. The adjective's STORE value contains two quantifiers, one originating from the inherited definite affix (first argument), the other from the

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(unsaturated) AP or NP complement (second argument). Moreover, the RESTR values of these quantifiers are different: only one incorporates all the restrictions of the phrase, the other is missing the restriction(s) introduced by the head adjective.

Note that the quantifier incorporating all the restrictions is the one originating from the inherited *def-ss* argument. As shown in (64) above, the INDEX and RESTR values of such an argument are identified with those of the adjective in the adjective's argument structure list. Given the identity between a determiner's CONTENT value and the quantifier in its STORE, which was shown to be extended to definite affixes too in (62), the RESTR set of the stored quantifier originating from the *def-ss* argument contains all the restrictions of the adjective's RESTR set, i.e. all the restrictions of the phrase. Therefore, only that quantifier should be amalgamated into the head daughter's STORE value and ultimately integrated into the meaning of the sentence.

In fact, the very definition of the Store Amalgamation Constraint enables us to do exactly that, and, therefore, provide the right semantics for both monadics and polydefinites. In Ginzburg & Sag (2000), the Store Amalgamation Constraint involves default specification that can be overridden by adding conflicting constraints on certain lexemic types or subtypes of *word*. Therefore, we can eliminate problematic amalgamation of the kind illustrated in (70) above by requiring that all unsaturated definite and plain nominal types (nouns and adjectives) should be lexically specified for an empty STORE. The types *unsat-def-n-wd*, *unsat-pl-n-wd*, *unsat-def-adj-wd* and *unsat-pl-adj-wd* should, therefore, be specified as shown in (71).

(71)

$$\textit{unsat-non-lx} \Rightarrow \begin{bmatrix} \textsc{head} & \textit{lex-nom} \\ \textsc{spr} & \left\langle \boxed{1}\textit{def-ss} \right\rangle \\ \textsc{store} & \{\} \\ \textsc{arg-st} & \left\langle \boxed{1}\left[\textsc{store} \quad \boxed{\Sigma}\right] \right\rangle \oplus \textit{list} \end{bmatrix}$$

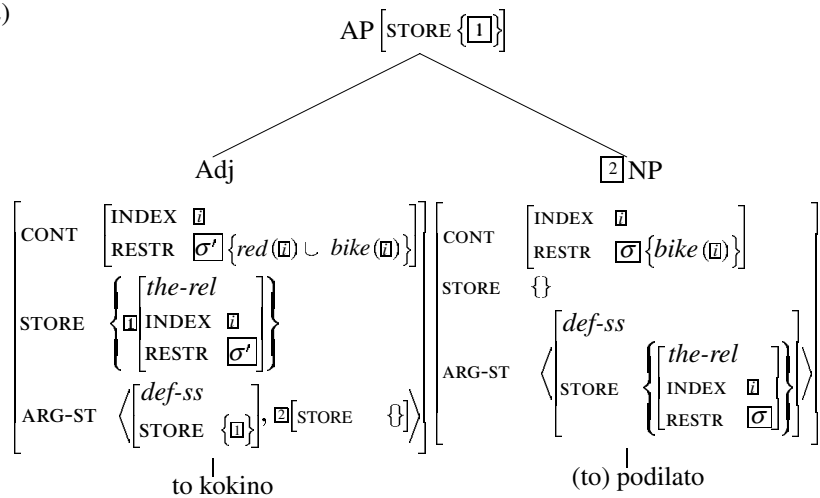
On the other hand, if no further constraints are imposed on saturated definite nominals (nouns, adjectives and numerals), such nominals will be required to 'rigidify' the Store Amalgamation Constraint, by amalgamating the STORE values of all of their arguments into their own STORE set. The types *sat-def-n-wd* and *sat-def-adj-wd* should, thus, remain intact.[33] Therefore, in the revised grammar the semantics of polydefinites (*to-kokino to-podilato*) and monadics (*to-kokino podilato*) are as illustrated in the

[33] The types *sat-pl-n-wd* and *sat-pl-adj-wd* are irrelevant since they do not realize a definite affix.

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following tree:

(72)



Notice, however, that our revised account is faced with a serious flaw. If all unsaturated nominal types are specified for an empty STORE value, then quantifiers originating from embedded constituents (for instance, noun complements) will be prevented from propagating up so as to be integrated into the meaning of the sentence. This point is illustrated in (73) below. The existential quantifier originating from the determiner of the embedded nominal *kapiu fititi* 'of a student' must be amalgamated into the STORE value of the (unsaturated) noun *ergasia* ('dissertation') in order to be passed up to the lexical head *ti-diplomatiki* 'doctoral' and ultimately to the verb, where it can be assigned scope. At the same time, the quantifier introduced by the definite affix *ti* (an argument of the noun) must be blocked from appearing in the noun's store for the reasons explained above.

(73) Kathe lektoras diavazi [ti-diplomatiki [ergasia [kapiu fititi]]].
Every lecturer reads [the [doctoral [dissertation [of [a student]]]]].

To ensure that our account makes the right predictions, the constraint on unsaturated nominals (nouns and adjectives that bear a *def-ss* object on their SPR list) must be revised as follows. Only quantifiers originating from the first (leftmost) argument in the nominal's argument structure list should be exempted from store amalgamation. The ARG-ST list of *unsat-def-n-wd*, *unsat-pl-n-wd*, *unsat-def-adj-wd* and *unsat-pl-adj-wd* is, therefore, partitioned into an initial member, which is an object of type *def-ss*, and the rest (a list that can be non-empty or empty). The revised constraint is given in (74).

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(74)

$$\textit{unsat-non-lx} \Rightarrow \begin{bmatrix} \text{HEAD} & \textit{lex-nom} \\ \text{SPR} & \langle \boxed{1}\, \textit{def-ss} \rangle \\ \text{STORE} & \left\{ \left[\text{STORE } \boxed{\Sigma_2}\right], \ldots, \left[\text{STORE } \boxed{\Sigma_n}\right] \right\} \\ \text{ARG-ST} & \left\langle \boxed{1} \left[\text{STORE } \boxed{\Sigma_1}\right] \right\rangle \oplus \left\langle \left[\text{STORE } \boxed{\Sigma_2}\right], \ldots, \left[\text{STORE } \boxed{\Sigma_n}\right] \right\rangle \end{bmatrix}$$

The modified account ensures that generalized quantifiers originating from definite affixes in both monadics and polydefinites are integrated into the meaning of the sentence exactly once. Moreover, since store amalgamation always takes place on a saturated nominal (the lexical head of the phrase), the RESTR set of a quantifier introduced by a definite affix incorporates all the restrictions of the nominal phrase that the definite affix occurs in. Finally, the account allows quantifiers originating from embedded constituents to be passed up in the usual way and assigned scope at an appropriate locus.

5.3 *Polydefinites and contextual constraints*

In section 3, I argued that a polydefinite nominal has a special pragmatic import: it is used to pick out a proper subset of a salient set in discourse. In this respect, polydefinites achieve effects similar to those induced in many languages purely by prosodic means – the so-called DEACCENTING. In this section I demonstrate that the account of definites put forward here can directly capture the special import of polydefinites and deaccented monadics.

Nominals employed for non-monotone anaphora (polydefinites and deaccented monadics) are associated with a special contextual constraint. In HPSG terms, they bear an additional restriction, one that requires their index to be anchored to an entity that is included in or forms a proper subset of a set previously introduced in discourse. (75) below shows the CONTENT and CONTEXT value of a polydefinite (*to kokino to podilato*) or deaccented monadic (*to* KOKINO *podilato*). The value of the argument SUBSET of the *include-in* relation is identified with the value of the index $\boxed{1}$, whereas the value $\boxed{2}$ of the argument SUPERSET stands for an antecedent discourse referent such that $\boxed{1}$ is a proper subset of $\boxed{2}$.

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(75)
$$\left[\begin{array}{ll} \text{CONTENT} & \left[\begin{array}{ll} \textit{the-rel} & \\ \text{INDEX} & \boxed{1} \\ \text{RESTR} & \left\{ \textit{red}\left(\boxed{1}\right) \cup \textit{bike}\left(\boxed{1}\right) \right\} \end{array}\right] \\ \text{CONTEXT} \mid \text{BACKGND} & \left\{ \left[\begin{array}{ll} \textit{include-in-rel} & \\ \text{SUPERSET} & \boxed{2} \\ \text{SUBSET} & \boxed{1} \end{array}\right] \right\} \end{array}\right]$$

where $\boxed{1} \subset \boxed{2}$

On the other hand, a canonical (non-deaccented) monadic lacks such a restriction:

(76)
$$\left[\begin{array}{ll} \text{CONTENT} & \left[\begin{array}{ll} \textit{the-rel} & \\ \text{INDEX} & \boxed{1} \\ \text{RESTR} & \left\{ \textit{red}\left(\boxed{1}\right) \cup \textit{bike}\left(\boxed{1}\right) \right\} \end{array}\right] \\ \text{CONTEXT} \mid \text{BACKGND} & \{\} \end{array}\right]$$

Given that Greek employs both syntactic and prosodic means (polydefinites and deaccenting, respectively) for the type of non-monotone anaphora discussed here, it would be entirely unjustified to attempt to pin the non-monotonicity effect onto a homonymous, albeit semantically distinct, form of the definite article. Moreover, such a move would be inconsistent with a core assumption in the current approach: that a single syntactic requirement for a definite specifier originates from the argument structure of the head noun in both monadics and polydefinites, despite multiple morphological realizations of that requirement in the latter.

Notice further that the *include-in* restriction cannot be lexically specified in the CONTEXT attribute of adjectives of the saturated definite sort (*to-kokino*). It is clear that not every adjective of this type triggers such a constraint – for instance, *to-kokino* is also the lexical head of the (canonical, non-deaccented) monadic *to-kokino podilato*. Rather, it is the presence of this adjective in a particular construction – a polydefinite – that triggers the non-monotonicity effect. Therefore, the contextual constraint should be stated at the phrasal level, as shown in (77).

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(77) *polydef(inite)* ⇒

$$\mathbf{H}\left[\begin{array}{l}\text{CAT}\,|\,\text{HEAD}\quad adj\\ \text{CONT}\,|\,\text{INDEX}\quad \boxed{1}\\ \\ \text{CONTEXT}\,|\,\text{BACKGND}\quad \left\{\left[\begin{array}{ll}\textit{include-in-rel}\\ \text{SUPERSET} & \boxed{\sigma}\\ \text{SUBSET} & \boxed{1}\end{array}\right]\right\}\end{array}\right],\left[\text{HEAD}\,|\,\text{DEF}\quad +\right]$$

where $\boxed{1} \subset \boxed{\sigma}$

That is, the *include-in* restriction is associated with phrases consisting of an adjectival head daughter and a definite non-head-daughter. Lexical constraints discussed above (see section 4.4.1) ensure that the head daughter is also definite – therefore, there is no need to explicitly state this in (77). Moreover, given that DEF is a feature defined for *nominal* objects (NPs and APs), the element in the DTRS list in (77) cannot correspond to a constituent occurring in an irrelevant adjectival construction – for instance, the PP complement of an adjective such as *perifanos* 'proud'.[34]

Note finally that the constraint in (77) does not apply to monadics, since the latter involve a non-head-daughter specified [DEF −]. Deaccented monadics can be associated with the *include-in* restriction by a constraint such as the following:

(78) *deacc(ented)-nom(inal)* ⇒

$$\mathbf{H}\left[\begin{array}{l}\text{CAT}\,|\,\text{HEAD}\quad adj\\ \text{CONT}\,|\,\text{INDEX}\quad \boxed{1}\\ \\ \text{CONTEXT}\,|\,\text{BACKGND}\quad \left\{\left[\begin{array}{ll}\textit{include-in-rel}\\ \text{SUPERSET} & \boxed{\sigma}\\ \text{SUBSET} & \boxed{1}\end{array}\right]\right\}\end{array}\right],\left[\text{HEAD}\quad \textit{subst}\right]$$

where $\boxed{1} \subset \boxed{\sigma}$

Proper integration of deaccenting into HPSG is beyond the scope of this work. Nonetheless, the multidimensional sign architecture allows for mutual constraints to be stated between phonology, context and syntax. Thus, (78) requires that the index of a deaccented AP should be anchored to an entity that constitutes a subset of a salient set in discourse.

[34] As already mentioned in the previous section, such adjectives do not productively occur in polydefinites.

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6. Conclusion

Previous work on Greek definites has been concerned with purely syntactic analysis, without addressing intriguing issues bearing on semantics and pragmatics that are intrinsically related to the syntactic matters. I have sought here to close this gap and provided a constraint-based account of the form, meaning and use of monadics and polydefinites.

Specifically, I have shown that a composition approach to the Greek definite article, in the spirit of previous work couched in HPSG, can account straightforwardly for its morphosyntactic properties and enables monadics and polydefinites to be syntactically unified, without positing unmotivated complexity in the grammar for deriving the form of the latter. Moreover, issues related to definite concord and word order that remain unresolved or pose problems for previous analyses are directly accounted for here. Further, I have proposed that saturated definite nominals alone introduce a generalized quantifier, and have provided a uniform semantics for the two types of definites, ensuring that the contribution of the definite article in polydefinites is integrated into the semantic content of the sentence exactly once. The special import of polydefinites has been argued to originate from a contextual constraint that requires the index to be anchored to an entity that forms a proper subset of a set salient in discourse.

This approach is, thus, consistent with the view that syntactic representation alone cannot successfully capture differences in meaning or use; rather, semantic and contextual information need to be rigorously integrated into the grammar. The multidimensional architecture of HPSG allows a straightforward formulation of the proposed linguistic generalizations.

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Author's address: *School of English Literature, Language and Linguistics, Percy Building, University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, U.K.*
E-mail: Dimitra.Kolliakou@newcastle.ac.uk

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