Determiner Spreading as DP-Predication

ABSTRACT

Determiner Spreading (DS) is a type of adjectival modification that involves more than one definite article and so far has only been extensively described in Greek. This paper discusses the properties of DS by comparing it to similar constructions in Semitic, Albanian and Mainland Scandinavian. We argue that DS is a configuration involving DP predication and serving both as an argument and as a predication structure. In the last part of the paper we provide data on the acquisition of DS by children acquiring Greek which support this analysis over some of its well-known alternatives in the literature.

1 INTRODUCTION

Determiner Spreading ('DS' henceforth) is a definite noun phrase construction in Modern Greek ('MG' and 'Greek' henceforth), in which more than one definite article determiner can appear in front of the noun phrase's adjectives.[1] DS is found through most of the history of the Greek language, going back to at least Herodotus (5th century BC).[2] In the present paper we will examine this phenomenon first by comparing it to similar constructions in Semitic, Albanian and Mainland Scandinavian. Additionally, we will present data on the acquisition of DS by children acquiring Greek and we will discuss their implications for competing syntactic analyses of the phenomenon.

As already mentioned, DS is a form of adjectival modification involving more than one definite article and one or more adjectives, displaying distinctive

semantic characteristics. It prototypically involves a D(eterminer)-A(djective)-D(eterminer)-N(oun) order or a D(eterminer)-N(oun)-D(eterminer)-A(djective) one, existing alongside 'ordinary' adjectival modification in Greek, which involves a (D)-A-N or an N-A order. The phenomenon is intriguing for a number of reasons: why do these two different ways of 'doing' adjectival modification exist? What are their interpretive differences? How can we explain noun phrase-internal determiners and a single noun in an analysis adhering to the DP-hypothesis (popularised by Abney, 1987 – but of many progenitors)? To what extent is it possible to unify DS with similar adequately studied phenomena of 'multiple articles' in other languages?

Finally, it is intriguing to look at the acquisition of DS by children exposed to Greek, given that this language also possesses 'ordinary' adjectival modification with a single (or no) article. Does DS emerge simultaneously with or later than this 'ordinary' version of adjectival modification? Can we utilise the above and other acquisition facts in order to evaluate different analyses of DS?

This paper will examine Determiner Spreading from a syntactic point of view and touch upon its semantics only in order to clarify matters pertaining to its syntax. Insightful semantic approaches to the phenomenon, although not fully compatible with the syntactic analysis put forward here, are provided in Larson 2004 and Kolliakou (2003; 2004). It will argue that DS is a DP-predication structure; more specifically, that it is a DP serving both as an argument and a predicate structure. It will then go on to argue that acquisition facts provide support for this analysis over the accounts of Androutsopoulou (1994; 1995), Alexiadou & Wilder (1998) and Giusti (2003). This paper is organised as follows: Section 2 describes the properties of DS and Section 3 illustrates previous analyses of the phenomenon, their virtues and

shortcomings. Section 4 presents our own analysis and shows how, with minimal assumptions, it correctly accounts for the Greek facts and Section 5 discusses how our analysis explains the acquisition facts of DS in Greek. Finally, a summary and conclusions are given in Section 6.

2 THE DATA

This section is concerned with the properties of Determiner Spreading in Greek. DS is a type of adjectival modification that involves the use of multiple definite articles preceding adjectives and nouns. Moreover, in DS only *definite* articles may precede adjectives and the noun. This section will present the distributional properties of DS, that is the word order facts (subsection 2.1), as well as the interpretation of DS (in subsection 2.2). In the last subsection (2.3) we will compare DS with superficially similar constructions in Semitic, Albanian and Mainland Scandinavian.

2.1. Possible word orders with DS

In DS, several word orders are possible. As far as the position of *one* adjective related to the position of the noun is concerned, there are two possible word orders, the word order Determiner-Adjective-Determiner-Noun (D-A-D-N), as shown in (1a) and the word order Determiner-Noun-Determiner-Adjective (D-N-D-A), as shown in (2) below. [3]

(1) **To** spiti **to** meghalo
the house the big

(2) **To** meghalo **to** spiti.

the big the house
'The big house'

When more than one adjective is present in DS, then *all* the possible combinations of constituents inside the nominal phrase are grammatical, provided that all adjectives as well as the noun are preceded by definite articles. Thus, in the case of two adjectives and a noun, all the 2^3-2=6 possible combinations are grammatical, as shown in (3a-f) below.

(3) (a) **To** meghalo **to** petrino **to** spiti.
the big the of.stone the house
(b) **To** meghalo **to** spiti **to** petrino.
the big the house the of.stone
(c) **To** petrino **to** spiti **to** meghalo.
the of.stone the house the big
(d) **To** petrino **to** meghalo **to** spiti
the of.stone the big the house
(e) **To** spiti **to** meghalo **to** petrino.
the house the big the of.stone
(f) **To** spiti **to** petrino **to** meghalo.
the house the of.stone the big
'The big stone house.'

The data in (3) above gives, at first blush, the impression that word order is free in DS to the point of this structure appearing 'flat' or even 'non-configurational'. We will actually demonstrate in section 4 that this is far from

true. For the time being, having just presented the free word order displayed in DS constructions, it is necessary to review some word order restrictions in DS.

Note that in non-DS ('monadic' in Kolliakou 2003; 2004) Greek nominal phrases involving adjectival modification and headed by a definite article, adjectives are *always prenominal*, as shown in (4) below. Moreover, in non-DS nominal phrases, the relative order of the adjectives tends to be rigid and is governed by restrictions related to the type of the adjectives (Cinque, 1994; Stavrou, 1996; 1999 for MG).

(4) (a) **To** meghalo petrino spiti.
The big of.stone house
(b) ***To** spiti meghalo petrino.
The house big of.stone
'The big stone house.'

Regarding DS, a first prominent characteristic of the construction is the following: not all adjectives need to be preceded by an article; the noun can be articleless, too. In this case, ordering freedom is restricted. First, if one of the adjectives is not preceded by an article, *all adjectives must be prenominal* unless preceded by an article themselves (6b); contrast (5a) and (5b) below with (3e) above.

(5) (a) ***To** spiti meghalo **to** petrino.
The house big the of.stone
(b) ***To** spiti **to** meghalo petrino.
The house the big of.stone
'The big stone house.'

Second, and complementing the state of affairs exemplified under (5) above, if the noun is not preceded by an article it is obligatory for it to immediately follow an adjective, as in (6) below. Interestingly, sequences like *to petrino spiti* in (6a) and *to meghalo spiti* in (6b) below look like fully-fledged DPs.

(6) (a) **To** meghalo **to** petrino spiti.
The big the of.stone house

(b) **To** meghalo spiti **to** petrino.
The big house the of.stone
'The big stone house.'

(c) **To** meghalo petrino spiti **to** palio
the big stone house the old
'The old big stone house'

The statements in (7) below recapitulate the word order state of affairs in DS:

(7) (a) no indefinite articles can be involved in a DS noun phrase;

(b) if all adjectives and the noun are preceded by the definite article, ordering is free;

(c) if the noun is not preceded by an article, it must be preceded *by an adjective*;

(d) all adjectives must be prenominal, unless preceded by an article themselves.

2.2. On the interpretation of DS

Noun phrases involving DS are interpreted differently from definite noun phrases; sometimes only subtly differently. As Kolliakou (1998; 2003; 2004) notes, DS is not semantically identical to adjectival modification with a single definite article. Adjectival modification with a single definite article may have either a restrictive or a non-restrictive interpretation, as in (8a) below; on the other hand, prototypically *DS has only a restrictive reading*, i.e. "DS 'narrows down' a given set of referents by picking out a proper subset of it" (Kolliakou 1998: 4-5; 2004: 268-276). This is illustrated in (8b) below.[4]

(8) (a) O dhiefthindis dhilose oti ***i*** *ikani* *erevnites*
the manager declared that *the* *competent* *researchers*
tha eprepe na apolithun
FUT had.to SUBJ fired.3^{RD}PL
'The manager declared that the competent researchers should be fired.' (*restrictive* or *non-restrictive* interpretation)

(b) O dhiefthindis dhilose oti ***i*** *ikani* ***i*** *erevnites*
the director declared that *the* *competent* *the* *researchers*
tha eprepe na apolithun.
FUT had.to SUBJ fired. 3^{RD}PL
'The manager declared that just the competent researchers should be fired.' (only *restrictive* interpretation)

In example (8a) above, an adjectivally modified definite noun phrase may have two principal interpretations, a non-restrictive interpretation or a restrictive one. In the non-restrictive interpretation, we have information about only one group of researchers, those who should be fired (possibly due to

financial difficulties of the company) and who are also characterised as competent; thus, there are no cues as to whether there is another group of researchers which should not be fired: *i ikani erevnites* ('the competent researchers') describes a salient set of competent researchers.

On the other hand, in the restrictive interpretation of the DS noun phrase in (8b) above, a set of competent researchers is singled out from a larger set of researchers, a superset, and only the competent ones should be fired (maybe because they are involved in some secret plot against the company). In the restrictive interpretation, it is implicated that other researchers (who, for instance, are not competent and therefore not dangerous for the company) should not be fired.

In the ambiguous sentence (8a) above, prosody may be used to disambiguate between the two interpretations. If the adjective is stressed, the restrictive interpretation is favoured.[5] DS in (8b), on the other hand, allows only for the restrictive interpretation. Thus, DS is felicitous whereby the nominal phrase, say D-A-D-N ('*i ikani i erevnites*'), refers to a proper subset of a set denoted by D-N ('*i erevnites*'). Although this is a crucial point in understanding DS, in section 4.3 we will go further and show the restrictive reading to be only one of the possible interpretations for DS. Moreover, both the available interpretations are here going to be argued to stem from the *predicative* nature of DS.

Elaborating, we have so far reviewed the *restrictive* interpretation of DS. Nevertheless, often a second kind of reading is possible for DS, as discussed in Manolessou (2000). Observe the examples in (9) below:

(9)	a.	vyike	exo	s	[**ton**	krio	**ton**	kero].
		went-out	out	in	the	cold	the	weather

'S/he went out in the cold weather.'

b. Ti thelun [**ta** kala **ta** pedia]?
What want the good the children
'What do the good children want?'

c. Tha se dho brosta s [**ton** Lefko **ton** Pirgho].
FUT you see front in the White the Tower
'I'll see you in front of the White Tower.'

d. Bike s [**to** kenuryo (tis) **to** aftokinito] ki efiye
got.in.1ST.SG in the new hers the car and left
'She got into the/her new car and left.'

Of course, given the discussion of (3) above, the orders *ton kero ton krio*, *ta pedhia ta kala* and *ton Pirgho ton Lefko* are also perfectly grammatical. However, the above examples cannot always be naturally construed with restrictive readings. (9a) can be uttered plainly if the weather is cold outside, not necessarily only if cold weather is understood as a subset of weathers. Turning to a plural DS constituent in (9b), when addressing the children in question, a pragmatically felicitous usage of this sentence, the speaker does not mean to single out the set of good ones out of a salient set of children. More intriguingly, in (9c) a well-known landmark in Salonica can naturally be presented in a DS form. Kolliakou (2004: 273-276) discusses related examples of DS with proper names, arguing them to be restrictive (as many people may share the same name). Still, both in (9c) and in the case of proper names, no restrictive reading may be necessary; in fact, it is virtually impossible in (9c) as there are neither other 'white' buildings nor more towers in Salonica. All three cases represent run-of-the-mill usage and in all of them restrictive readings are disfavoured. In this respect, (9d) is perhaps the most revealing example, in the sense that the constituent *to kenuryo to aftokinito* may indeed be read in a

restrictive way, picking out the new car out of a set of cars; nevertheless, it is also perfectly possible to use it even if just *one* car exists, which also happens to be a new one. The point emerging here is that DS does have a special semantic interpretation, but it is not the case that this is necessarily a restrictive one.

As Manolessou points out, the interpretation of the DS noun phrases in (9) is a ***predicative*** one. Nevertheless, this is not the whole story, as adjectival modification can also be predicative, e.g. *a white elephant* ≈ *an elephant* (that) is *white* (see Larson 1999 for detailed exposition and an account). Hence, we have to sharpen this observation taking into account the restrictive interpretations available for the construction, and claim that DS involves ***DP predication***: it is a nominal constituent where one DP is predicated of another. So, in principle, DS is different from 'ordinary' adjectival modification because the latter involves picking out the intersection of two sets, denoted by the predicate adjective and the predicate noun respectively, whereas the former – Determiner Spreading – denotes the intersection of two sets, respectively denoted by an elliptical DP containing the adjective, and a DP containing the noun, in its simplest manifestation.[6]

The importance of this predicative interpretation and its relation to the restrictive one, in fact the latter will be shown to be a *subcase* of the former, will be further explored in section 4.3.

2.3. Determiner Spreading and similar constructions crosslinguistically

Having reviewed the basic syntactic and semantic characteristics of DS, we are now going to compare it with similar constructions in other languages. Although we suppose that similar 'multi-article' noun phrases are not

typologically as atypical as one might think, we are only going to draw on evidence from such constructions in Semitic, Albanian and Mainland Scandinavian. The reason is that, although similar phenomena have been described in the above languages with a varying degree of detail and from distinct theoretical points of view, we have solid evidence that in these languages 'multi-article' noun phrases behave indeed as constituents.[7]

In Semitic, *standard* adjectival modification is a 'multi-article' noun phrase, with articles preceding every lexical constituent, all adjectives as well as the noun. This has been described as 'agreement for definiteness'. Exemplifying with examples from Hebrew, (10a) below is a faithful translation for 'the big house', with no special semantic effects being involved, like a restrictive interpretation as above. It is not possible to have a D-A-D-N order (10b), or an adjective not agreeing for definiteness, as (10c) illustrates.

(10) (a) **Ha**-bayit **ha**-gadol.
The-house the-big
(b) * **Ha**-gadol **ha**-bayit.
The-big the-house
(c) ***Ha**-bayit gadol.
The-house big
'The big house'

A unified analysis for the Greek and the Semitic facts is not straightforward, because in Semitic nominal phrases with adjectives 'agreeing for definiteness' can display only a D-N-D-A order and because the 'definiteness agreement' structure is actually *the standard way* to express adjectival modification.[8]

Moving to Mainland Scandinavian, shorthand for Swedish and Norwegian here, we observe a similar case of what has been called 'double definiteness'.

(11) (a) ***den** store gutt
the big boy
(b) **den** store gutt-**en**
the big boy-DEF
'The big boy'
(c) gutt-**en**
boy-DEF
(d) ***den** gutt
the boy
'The boy'

In Mainland Scandinavian, an article-like element *–en* / *–et* attaches on either a single noun (11c), or on adjectives and in the presence of a 'strong' article *den* / *det*, as in (11b). Single nouns cannot be preceded by *den* / *det* (11d); at the same time both *den* / *det* and *–en* / *–et* attached on the adjective are needed in adjectival modification.[9] The ungrammaticality of (11a) in Mainland Scandinavian, an 'ordinary' definite noun phrase, brings this double definiteness construction, obligatory with adjectives, closer to Hebrew than Greek DS. Furthermore, it has no 'special' effect on interpretation (*den store gutt-en* simply means 'the big boy').[10]

Finally, we turn to 'multi-article' noun phrases in Albanian. As Albanian and Modern Greek have a long history of contact and as the two languages display extensive syntactic similarities, our interest in this language

is of a more substantial nature: here we would expect a construction identical to DS, a line of reasoning taken up by Giusti (1997; 2003).[11]

However, the ordering constraints in (7) put DS in contrast to 'adjectival articles' (Giusti 1997:104) in Albanian. Consider (12) below (from Giusti, ibid.).

(12) (a) djal-**i** **i** mire *Albanian*
boy-the the good
(b) ?***i** mir-**i** djalë
the good-the boy
'The good boy'
(c) një djalë **i** mire
a boy the good
'A good boy'
(d) djal-**i** besnik
boy-the faithful
'The faithful boy'

(13) (a) *(*ena) aghori **to** kalo *Greek*
a boy the good
(b) * **to** aghori kalo
the boy good
'A good boy'

In Albanian the article can be suffixed on the noun: (12a). The only possible word order without adjectival articles is *djalë i mire*, as **djal-i mire*, **mir-i djalë* and **i mire djalë* are out. At the same time, orders involving

adjectival articles in Albanian are nowhere as flexible as those involving DS in Greek (3).[12]

The following points are relevant to our investigation of the Albanian DP with adjectival determiners:

1. a definite article can precede an adjective in an indefinite noun phrase, as in (12c) above, unlike in Greek – contrast with example (13a) above,
2. an articleless adjective can co-occur postnominally with a noun 'matched' with an article, as in (12d), unlike the situation in Greek – compare with example (13b); even so, this feature of Albanian is lexically conditioned: if we replace the adjective *besnik* with *mire*, (12d) becomes ungrammatical. No such lexical requirements on behalf of adjectives exist in Greek.
3. The presence of more than one article does not 'free up' ordering possibilities, as evident in (12b) above and unlike what happens in Greek – consider example (3).
4. Finally, and as Giusti (1997:104) notes contrasting (12a) with (12c), "[…] articles are not inserted for semantic, but rather for… morpho-syntactic reasons."

Given these points, we wish to argue that Albanian adjectival articles and Determiner Spreading are not identically derived constructions, despite their surface similarities.

Recapitualting, the table below summarises the differences among DS, Semitic 'definiteness spreading', Scandinavian 'double definiteness', and Albanian 'adjectival determiners'.

&&PLEASE INSERT TABLE 1 HERE&&

3 PREVIOUS ANALYSES

A number of analyses have been offered to account for the phenomenon of DS; we will now review three of them: Androutsopoulou (1994; 1995), Alexiadou & Wilder (1998) and Giusti (2003). We concentrate on them mainly because we feel that, at the time this paper is being written, they offer the best-articulated *syntactic* accounts of the phenomenon in a Principles and Parameters framework aspiring towards Minimalism, this being the framework followed here.[13] It is also probably worth noting that each of them is informed by major recent developments in syntactic theory; hence: Androutsopoulou (1994; 1995) by the proposals that a greater number of functional categories (may) exist, besides the better studied C(omplementiser), I(nflection) and D(eterminer); Alexiadou & Wilder (1998) by Kayne's (1994) Antisymmetry Hypothesis; Giusti (2003) by Chomsky's (1993) Bare Phrase Structure.

3.1. Androutsopoulou (1994; 1995)

Androutsopoulou (1994; 1995) takes DS to be akin to Semitic 'definiteness spreading' and she accounts for it along the following lines. First of all, the 'extra' definite articles in the structure of DS are not of the category D, but rather spell-outs of a definiteness feature [+def], which she argues not to be a semantic feature, but a syntactic one. This appears to be in the spirit of Delsing's (1988) analysis for Mainland Scandinavian, as mentioned above. Like in Scandinavian, 'intermediate' articles look like the definite Determiner, but they are not. Every definite article heads its own functional agreement projection, called Definite Phrase (DefP), hosting agreement features (gender,

number, case) and the [+def] feature. Although DefPs host the feature [+def], the locus of definiteness and referentiality is D and not the 'intermediate' articles, heads of DefPs. Finally, APs intervene in the projection line between D and N, à la Abney (1987) and Radford (1993). The 'initial' structure being the one under (14), movement to (the highest) SpecDefP derives the different word orders, an instance thereof illustrated in (15) below.

(14) *DS (=3a) in Androutsopoulou's account*
&&PLEASE INSERT FIGURE 1 HERE&&

(15) *DS with derived order (= 3b) in Androutsopoulou's account*
&&PLEASE INSERT FIGURE 2 HERE&&

Androutsopoulou's account can capture all the orderings under (3) above either a) with a series of movement operations to the highest SpecDefP or SpecDP b) with the possibility to merge the two adjectives in different orders.[14] Even so, the question of what drives such XP movement operations remains unresolved. Even setting this aside, the analysis leaves a number of open questions regarding the nature of Def:

a. what happens in cases such as (6), where articles ('Def heads') can be missing;
b. why Def heads are morphologically identical to Ds (unlike, for instance, Scandinavian D *den* and the definite suffix *–en*);
c. how their [def] feature, a *syntactic* and not a semantic one, is interpreted at LF, especially in view of the prototypically restrictive interpretation of DS;
d. whether Def heads are present in other syntactic environments in MG.[15]

3.2. Alexiadou & Wilder (1998)

An account in a different spirit is that by Alexiadou and Wilder (1998), who take the restrictive interpretation of DS as their starting point. They go on to analyse DS noun phrases as involving predication and more specifically, as *reduced relative clauses*. The analysis for relative clauses adopted is the one in Kayne (1994), namely that relative clauses are made up from a D head taking a CP (clausal) complement: $[_{DP}\ _{D}$*the* $[_{CP}\ [_{NP}$ *stone house*$]_j$ $[_{C}$*that* $[_{IP}$ *I saw* $t_j]]]]$. Hence, Alexiadou and Wilder's proposed structure for DS is that of a reduced relative clause, complete with an embedded full CP:

(16) $[_{DP}\ D\ [_{CP}\ AP_i\ [_{C}\ \varnothing\ [_{IP}\ \alpha\ t_i\ ]]]]$

At the heart of DS is embedded an IP structure where the AP is predicated of the subject α. The predicate AP moves to the SpecCP, adjacent to D, and the order D-A-α obtains. Now, the surface order of constituents depends on the identity of the subject α. Thus, if α is a simple DP, then a 'basic' D-A-D-N order ensues, as in *to meghalo to spiti* in (17) below. Movement of the subject *to spiti* to a higher position, such as SpecDP, yields the D-N-D-A order.

When the subject α is a DS structure itself, then recursion follows, yielding $[_{DP}\ D\ [_{CP}\ AP_i\ [_{C}\ \varnothing\ [_{IP}\ [_{DP}\ D\ [_{CP}\ AP_j\ [_{C}\ \varnothing\ [_{IP}\ DP\ t_j\ ]]]]\ t_i\ ]]]]$, e.g. *to meghalo to petrino to spiti*. Again, the embedded subject *to spiti* can arrive at a highest position using the specifiers of the respective DPs as escape hatches. By way of illustration, consider (17) below.

(17) *D-A-D-N as* $[_{DP}\ D\ [_{CP}\ AP_i\ [_{C}\ \varnothing [_{IP}\ DP\ t_i\ ]]]]$

&&PLEASE INSERT FIGURE 3 HERE&&

Alexiadou and Wilder's proposal is characterised by the virtue of acknowledging the restrictive interpretation of DS and plausibly capturing it as a reduced relative inside a DP. At the same time, the structure proposed is too complex in the sense that it radically differs from that of monadic DPs, as it posits a whole verbless clause in the complement of D, as well as a set of constraints and movement operations we have little insight into. Furthermore, under this analysis, D-A-D-N appears to be the default order with D-N-D-A order derived by a further movement to the specifier of the matrix DP. Nevertheless, there is no evidence that either D-A-D-N or D-N-D-A constitutes a default order.[16]

3.3. Giusti (2003)

Giusti's analysis is similar to Alexiadou & Wilder's – but without the proposed phrase marker containing a CP constituent. In this account, the D-A *is* a constituent, more specifically, an AP agreeing for definiteness. This agreeing AP is generated at the specifier of a YP situated between D and N, where all APs are hypothesised to be merged. The D-N-D-A order is derived by movement to the N head over the AP to a higher head position X, as illustrated in (18) below, an operation that could be posited to take place anyway (Cinque, 1994). The D-A-D-N order is derived by a further optional XP movement operation of the 'definite' AP (D-A) to the specifier of DP.

(18) *Giusti's account*

&&PLEASE INSERT FIGURE 4 HERE&&

One of its consequences is that the D-N-D-A order is postulated to be the basic one something that is in accord with the situation in Semitic (as in example (9) above), Albanian (as in example (12) above) and the situation in older forms of Greek, as noted in footnote 16. The D-A-D-N order is also argued to involve SpecDP, a position that has independently been shown to be particularly 'active' in Greek (see also footnote 14).

However, Giusti's analysis does not account for the special restrictive / predicative interpretation of DS, as this does not seem to have anything to do with the categories X and Y, whereas arguing that Greek DS is 'basically' D-N-D-A is also unmotivated. A final issue is with the status of the N-to-X movement, posited in Cinque (1994) to account for the Noun-Adjective orders in Romance. When it comes to whether this operation takes place in MG, opinions are split between this head-movement operation overtly targeting a much lower head, e.g. Num, right above the (nP-)NP (Panagiotidis, 2000) and such a head-movement operation not existing at all in MG (Alexiadou & Stavrou, 1998). The latter view is strengthened by the fact that, except in DS, D-N-A orders are ungrammatical, see Stavrou (1996) for discussion.

4 AN ALTERNATIVE ANALYSIS

We will now present an analysis that captures the predicative nature of DS while being in concord with acquisition facts. We precisely proceed from the fact that DS has a restrictive / predicative interpretation. In order to do so, we will not argue for a restrictive relative clause. Instead, we will claim that DS is a case of ***DP predication*** in the form of a DP small clause.

4.1. DS and its kin

Although we have already briefly discussed the relation between the restrictive and the predicative nature of DS in section 2.2, further elucidation in the form of examples (19-20) below is necessary. As judgements are subtle, contexts are provided.

(19) Context: The personnel of an institute consists of researchers (‘*erevnites*’) and teaching staff. In this particular institute some of the personnel are competent and some are incompetent. A number of people have just left the institute and someone comments:

(a) i erevnites i ikani efighan. *DS*
the researchers the competent left

(b) i erevnites pu itan (??i) ikani efighan. *restr. rel*
the researchers that were the competent left.
‘The researchers who were the competent ones left.

(c) i erevnites itan i ikani. *with copula*
the researchers were the competent
‘The researchers were the competent ones.’

(20) Context: The job selection process in company X is a two-day long process involving a lot of waiting (‘*anamoni*’) and participating in different phases thereof in different locations far apart from each other. The two days are over and the process has just finished. A candidate says to another:

(a) ?i anamoni i eknevristiki elixe. *DS*
the wait the irritating finished

(b) i anamoni pu itan (?*i) eknevristiki elixe. *restr. rel*
the wait that was the irritating finished

'The wait, which was the irritating thing, finished. '

(c) ?i anamoni itan i eknevristiki. *with copula*
the wait was the irritating
'The wait was the irritating thing.'

Let us first clarify examples (19-20) above. In (19) an adjective combines with the concrete noun *erevnitis* ('researcher') in three distinct environments, whereas in (20) with a deverbal / event noun, *anamoni* ('wait'). The environments respectively are:

1. Determiner Spreading: (19a), (20a).
2. Restrictive relatives with a referential predicate, characterising a referential 'head' (cf. *the man who was the responsible one has fled*): (19b), (20b).
3. An equative (cf. *this man is the responsible one*).[17]

In (19), the combination of D-A *i ikani* ('the competent ones') with a concrete noun is possible in (19a) and (19c) but very deviant in the context of a restrictive relative. Similarly, turning to (20) we observe along with Manolessou (2000: Ch.4) that DS is anomalous with deverbal nouns such as *anamoni* ('wait') (20a).[18] Nevertheless, (20a) and (20c) are much better than (20b), where D-A *i eknevristiki* ('the irritating one') is embedded within a relative clause. Moreover, (19b) and (20b) are perfect when the predicate they involve is not referential. In other words, Determiner Spreading does not pattern up with restrictive relative clauses, but with equatives.[19] This is particularly instructive because if, as in Alexiadou & Wilder (1998), DS syntactically involved a reduced relative clause, then we would not expect the

contrast between the acceptability of relatives with D-A and Determiner Spreading.

More importantly, and as is made clear especially in (19c) and (20c) above, DS involves not a D-A constituent that consists an AP agreeing for definiteness, as argued before, but a D-A constituent that is an *elliptical* DP. This is why in the aforementioned examples they can be used as referential predicates, although no overt noun is present. The fact that D-A constituents are *elliptical* DPs is also evident from the translations of these examples, cf. the translation of (19c) as 'The researchers were the competent ones'.

With the above in mind, we will now go on to present our analysis.

4.2. SpecDP again

DS has been shown to be a predicative relation, more specifically, a relation between a DP *subject* and a DP predicate. In other words, the relationship between constituents like *to meghalo* and *to spiti* in DS is that of a DP predicate to its specifier. Hence, and deferring discussion of the nature of the elliptical DP *to meghalo* until the next subsection, our proposed configuration for DS can be either:

(21) [$_{DP}$ [$_{DP\text{-}subject}$ to meghalo] [$_{D'}$ to spiti]]
or
[$_{DP}$ [$_{DP\text{-}subject}$ to spiti] [$_{D'}$ to meghalo]]

(22) *Phrase marker for* [$_{DP}$ [$_{DP\text{-}subject}$ *to meghalo*] [$_{D'}$ *to spiti*]]
&&PLEASE INSERT FIGURE 5 HERE&&

The idea that Determiner Spreading involves two constituents with one in SpecDP, belongs to Horrocks & Stavrou (1986).[20] This configuration is in concord with both Stowell's (1981) 'small clause' analysis, the small clause being the whole DP here, and Williams' (1994) configuration for predication: the DP at SpecDP is the subject of the referential predicate at D'.

Before proceeding, it is important to clarify a problem concerning the nature of the DS subject.[21] Although it is clear the predicate in DS is referential, nothing in principle would prevent indefinite or generic subjects showing up in SpecDP, yielding instances of DS like the ungrammatical (13a), akin to Albanian (12c). Why is this not possible? The answer lies in the peculiarities of Greek subjects.

Greek does not tolerate generic subjects and these have to be headed by the definite article;[22] in this respect Greek resembles Italian as discussed in Longobardi (1994). The only way to force sentential subjects headed by the null indefinite article in Greek is by D-linking them. This 'aversion' to generic subjects headed by the null indefinite determiner is absolute with small clauses, as illustrated in the context of a copula sentence (23a) and *consider*-constructions (24a). Interestingly, indefinite subjects headed by the 'indefinite article' *enas*, *mia*, *ena*, are also out as subjects of sentences (23b) and small clauses (24b), unless a numeral or D-linked / specific.[23]

(23) a. *(O) xronos ine politimos.
The time is valuable.
'Time is valuable.'

b. Mia falena ine orea.
one whale is mammal
'One / a (specific) / *a whale is pretty.'

(24) a. Theori [*(ton) kafe vlavero]
considers the coffee harmful
'She / he considers coffee harmful.'

b. ?Theori [enan kinigho fonia]
considers one hunter killer
'S/he considers one / a (specific) / *a hunter a killer.'

Indefinite subjects with *enas*, *mia*, *ena* are much better in sentences (23b) than in small clauses. Speculating, this is probably a 'Diesing effect' (Diesing 1992): the complementiser field in small clauses is either inexistent or less fully articulated than in sentences. Therefore, specific interpretation of indefinite subjects with *enas*, *mia*, *ena* is harder to trigger syntactically either because of the deficiency of the small clause's complementiser field or because small clauses have *no* complementiser field and their subject must move long distance to the matrix complementiser field. In any case, DPs definitely lack a complementiser field, hence we expect such generic and indefinite subjects to be impossible in the SpecDP – in Determiner Spreading, in other words – precisely as expected.

An important point in our analysis is that it does not involve movement: the subject DP merges directly with the predicate DP. Because any DP can be a predicate and of course any DP, being itself referential, can be a subject, the ordering of DPs appears to be free in DS, although in each case different predicates describe different subjects. So, in [$_{DP}$ [$_{DP\text{-subject}}$ *to meghalo*] [$_{D'}$ *to spiti*]], the meaning is roughly 'the big one which is the house', or similar, whereas [$_{DP}$ [$_{DP\text{-subject}}$ *to spiti*] [$_{D'}$ *to meghalo*]] means something along the lines of 'the house which is the big one'. The difference is subtle, but present. Still, this is not the whole story: more needs to be said about the nature of the

elliptical DPs, whose we see only the determiner and the adjective. This is the focus of the next subsection.

Before moving on, let us briefly point out a valid question, that is, whether DS can involve two DPs neither of which is elliptical. The answer is yes; at least in MG. Examples include the following (adapted from Stavrou-Sifaki, 1995: 218):[24]

(25) (a) o Solomos o piitis.
the Solomos the poet
'Solomos the poet.'
(b) o aetos to puli.
the eagle the bird
'The eagle, the bird.'
(c) esis i nei kalitehnes.
you the young artists
'You, the young artists.'

In (25a), a proper name DP combines with another one; in (25b) two definite DPs combine together; in (25c) it is a pronoun and a definite DP. The semantic interpretation of all the examples in (25) is similar, if not identical, to DS, involving predication between DPs. Stavrou-Sifaki dubs the phenomenon illustrated above *epexegesis* and she teases it apart from apposition, which inter alia involves an intonation break between the two DPs. She moreover offers a very similar analysis to ours, also unifying epexegesis with DS. Therefore, by extending our analysis to epexegesis, we would represent (25c), for instance, as [$_{DP}$ [$_{DP\text{-subject}}$ *esis*] [$_{D'}$ *i nei kalitehnes*]] ('you, the young artists').

Details aside, DS is anything but a peculiar phenomenon involving just D-A sequences. The importance of *epexegesis* and the fact that our analysis can promptly unify it with DS is something to be further discussed in section 4.7 but what can be said here is that DPs involving referential predication are run-of-the-mill in Greek; labels such as 'DS' or 'Epexegesis' are merely descriptive, evocative of the type of constituents involved.[25]

4.3. Deriving the interpretive effects

We saw in section 2.2 that Determiner Spreading DPs can have a restrictive reading, i.e. pick out proper subsets from the superset described by the DP. At the same time, we also encountered the availability of a predicative reading for DS. How are the two related to each other? Although the semantics of the structure is actually beyond the scope of this contribution, an informal account will be sketched, the details having to be worked out in future research.

Let us follow an extensional approach and take predication to involve two intersecting sets. To start with a simple example, consider modification by an intersective adjective in a noun phrase such as *petrina spitia* ('stone houses', cf. examples (3) to (6)). If in the simplified representation of (26) below S is the set of stone things and H the set of houses, the noun phrase refers to the intersection of the two sets:

(26) $|[\text{petrina spitia}]| = S \cap H$

Determiner Spreading is interpreted identically, albeit with *full DPs* in the place of an adjective and a noun. As expected, in the DS version *ta petrina ta spitia* ('the stone the houses') different sets are involved, call them S' (the set of *the* stone things) and H' (the set of *the* houses). Membership of these sets S' and H' is not only restricted by the concepts the adjective *petrina* and the noun

spitia denote, as was the case with (26), but also by the respective Determiners *ta* and whatever else a Greek DP, such as Num, contains. Determiner Spreading, a predication relation, is again interpreted as the intersection of the two sets:

(27) |[ta petrina ta spitia]| = S' ∩ H'

The difference between DS and a 'monadic' (D-A-N) DP is easy to express: DS involves *two* 'monadic' DPs, in each of which the Determiner restricts the outcome of a predication relation like the one in (26). In contrast, DS is the intersection of two *already* restricted sets.

Now we need to derive the restrictive reading of DS, which, as indicated above, is a subcase of the predicative one. This task can be carried out as follows: recall that membership of the sets S' and H' is not only restricted by the concepts their respective lexical (adjective and noun) material denotes, but also by their determiners, Num heads and so on. Now, given the various contextual factors conspiring with syntactic structure to yield the extension of (definite or other) DPs, it may happen that one of the sets, let's say the subject DP's extension, is a proper subset of the other one with S' ⊂ H'; this is the restrictive interpretation of DS, the only interpretation according to Kolliakou's *Polydefiniteness Constraint* (2004: 272-276). Of course, in a situation where S' ⊂ H' holds, it is also trivially true that the whole S' is the intersection of itself with H'. Informally, a DP with Determiner Spreading like *ta petrina ta spitia* can be interpreted either predicatively as 'the stone ones that have the property of being the houses', as from (26), or restrictively as 'the stone ones of the houses', as from (27). Given that, a 'monadic' DP *ta petrina spitia* ('the stone houses') can have an interpretation similar to that indicated in (26), the

pragmatically preferred reading for DS, which contains more structure, is usually along the lines of the one indicated in (27).

To summarise, DS is a DP predication structure with a DP subject predicated over a DP predicate. The resulting relation, one of two sets intersecting, is the expected one, although a subcase where the intersection is one of the (sub)sets itself, is available and is naturally interpreted restrictively. Crucially, we have taken for granted so far that D+A constituents are DPs. The reason why is explained in the next subsection.[26]

4.4. The D+A constituent is an elliptical DP

A DP made of an article D and an adjective can be perhaps seen as a curiosity. Actually, as mentioned above, constituents like *to meghalo* are nothing but *elliptical DPs*, involving a semantically (i.e. non-descriptive) and phonologically null noun e_N (Kester, 1996; Corver & Delfitto, 1999; Panagiotidis, 2002 and elsewhere). According to Panagiotidis (2002), semantically empty nouns, whether phonologically null as well (e_N) or not (*one* in English) are also present within pronouns, also argued to be full DPs; the presence of e_N syntactically licenses the determiner and provides a trivial predicate for the determiner range over in order to perform its semantic function. Despite its not denoting a concept, e_N may mark other LF interpretable features.

What this means in our case is that the D-A constituent functions quasi-pronominally, it being an elliptical DP of the form $[_D$ *to* $[_{FP}$ $[_{AP}$ *petrino*$]$ F $[_N$ $e_N]$. So, the presence of an article before an adjective is not a definiteness agreement marker on it, exactly as it is not before the adjective *ikani* in (19c) either.

The resulting structures in detail are given in (28) and (29) below.

(28) *D-A-D-N*

&&PLEASE INSERT FIGURE 6 HERE&&

(29) *D-N-D-A*

&&PLEASE INSERT FIGURE 7 HERE&&

4.5. Deriving the word orders

A potentially serious problem with all the other syntactic accounts is deriving the full set of different word orders described in section 2 without overgenerating. Despite the fact that recursion can probably do the trick for the evidence presented under (3) in Alexiadou & Wilder's (1998) and Giusti's (2003) analyses, accounting for the grammaticality of (3) and (6) as opposed to (5) – repeated below for convenience – can be less straightforward.

(3) (a) To meghalo to petrino to spiti.
the big the of.stone the house
(b) To meghalo to spiti to petrino.
the big the house the of.stone
(c) To petrino to spiti to meghalo.
the of.stone the house the big
(d) To petrino to meghalo to spiti
the of.stone the big the house
(e) To spiti to meghalo to petrino.
the house the big the of.stone
(f) To spiti to petrino to meghalo.

the house the of.stone the big
'The big stone house.'

(5) (a) *To spiti meghalo to petrino.
The house big the of.stone
(b) *To spiti to meghalo petrino.
The house the big of.stone
'The big stone house.'

(6) (a) To meghalo to petrino spiti.
The big the of.stone house
(b) To meghalo spiti to petrino.
The big house the of.stone
'The big stone house.'

In (3), we saw that all the combinatorial possibilities (six in the case of two adjectives and a noun) for DS are grammatical if an article precedes all the lexical elements of the construction. In this case, three DPs are involved in the DS DP. One of them, informally the rightmost, is the referential predicate, say *to meghalo* e_N in (3c). Its subject is yet another DS DP, *to petrino* e_N *to spiti*, which in its own turn is made of a referential predicate *to spiti*, and its subject *to petrino* e_N. This is clarified in (30) below, where the structure of (3c) is given. It is hence worth noting here that the word order 'freedom' displayed in (3) is by no means a token of 'non-configurationality' but, rather, the result of DPs (including DS DPs) being free to function as subjects.

(30) *DS with two adjectives* (or 'the triumph of recursion')
&&PLEASE INSERT FIGURE 8 HERE&&

In the account presented here, the contrast between (5) and (6) can also be satisfactorily captured with no added assumptions. In (6), if two DPs, one subject and one referential predicate, are involved in DS, nothing prevents any or both of them to possess a more complex structure, such as one including adjectives, demonstratives, possessors and so on. The examples in (6) illustrate only one of these options, namely the non-elliptical DP involving an AP. So, (6a) is analysed as [$_{DP}$ [$_{DP\text{-subject}}$ *to meghalo* e_N] [$_{D'}$ *to petrino spiti*]] and (6b) as [$_{DP}$ [$_{DP\text{-subject}}$ *to meghalo spiti*] [$_{D'}$ *to petrino* e_N]] – see also (28) and (29).

Turning to (5) now, if the article *to* marks the boundaries between the DPs in DS, the ungrammaticality of (5a) becomes obvious, as it would have the DP **to spiti meghalo* as subject. Comparing now **to spiti meghalo* with (4b) and (12b), we realise it suffers from the same problem: they both display the D-N-A order banned in MG. As for the unacceptability of (5b), we wish to note that an elliptical DP with *two*, as opposed to one, APs is not permitted either. This is already discussed for English in Sadler & Arnold (1994). Whatever the principled explanation, this entails that (5b) is ungrammatical because it contains the ungrammatical elliptical DP **to meghalo petrino* as its DP predicate.

4.6. Open issues

Our account captures both the word order facts as well as the interpretive peculiarity of DS. There are nevertheless two issues remaining.[27]

First of all, it is not clear why DS is unavailable in Romance languages, where elliptical DPs with adjectives ('D-A'), and noun ellipsis in general, are also available. A related issue is why **the blue one the house* is ungrammatical in English. In brief, why are DP small clauses only possible in Greek, as far as

we know? This seems to be related to the fact that in MG the SpecDP position is more active than in languages that do not display Determiner Spreading. It can be the landing site for left-dislocated genitives, focused or not (Horrocks & Stavrou, 1987), demonstrative operators (Panagiotidis, 2000) and, as discussed in section 4.2, DP or strong pronoun subjects in epexegesis configurations.

The above brings us to the following question: if SpecDP is an A' position, it cannot plausibly host subjects. There is of course a lot of evidence of SpecDP being an A' position and even serving as an escape hatch for DP-internal wh-words. Should this be so, then we will have to split DP into at least a 'nominal C' and 'a nominal Infl' layer, at least. DS would involve the specifiers of this 'nominal Infl'. See, once more, Horrocks & Stavrou, 1987 as well as Giusti, 1995 for D as a nominal Complementiser (hence SpecDP as an A' position) and Abney, 1987 for D as a nominal Inflection (hence SpecDP as an A position); Campbell (1996) and Den Dikken (2001), as well as footnote 14, contain some further discussion.[28]

In general, future research will be necessary in order to establish whether the availability of SpecDP in MG as an A' position for operators (demonstratives, focused genitives) and topics as well as an A position for subjects of predication is evidence for *two* D projections. The answer cannot be as straightforward as along the lines of Greek possessing an extra D projection with an A' specifier, because non-dislocated possessors are always postnominal, unlike English *Tom's diner*, for instance. On top of that, it is also true that wh-extraction out of a DP with DS is much worse than extraction from a non-DS DP. This would suggest that SpecDP can host a subject, as an A position, while simultaneously blocking an A' operation, wh-extraction. This is peculiar and worth more researching into.

(31) a. ? tinos$_i$ ides [to petrino spiti t_i]?
whose saw.2ndPL the of.stone house
b. ?* tinos ides [to petrino to spiti t_i]?
whose saw.2ndPL the of.stone the house
'Whose stone house did you see?'

4.7. Conclusion: against methodological profligacy in minimalist times

We have offered a novel account of DS in Greek. In doing so, we have distinguished it from the superficially similar phenomena of Semitic definiteness spreading, Albanian adjectival determiners and Mainland Scandinavian double definiteness. At the same time, we suggested it be unified with epexegesis, along the lines of Stavrou-Sifaki (1995), with both phenomena being instances of referential predication. This analysis has a number of advantages over previous analyses. First of all, it explains the free distribution between D-A-D-N and D-N-D-A in DS. It also captures all the different orders in (3) and (6) while excluding (5a) with no additional assumptions. The restrictive interpretation of the phenomenon is shown to be a pragmatically induced subcase of its referentially predicative function. As one would expect from a subject-predicate configuration, it is a relation between a SpecXP (the subject) and a predicate (the X'): no special functional categories are postulated, no reduced relative CPs are taken to be embedded within the DP, no unidentified categories are required and, for what it is worth, no movement operations (and their triggers) are necessary.

Most crucially in terms of methodological parsimony and commitment to Occam's Razor, DS has clearly been shown not to be a particular *construction*, a configuration at the periphery of grammar. On the contrary, it

was shown to only involve what happens when elliptical DPs are involved in referential predication and, essentially, identical to Epexegesis: LF can see both the highest category (D) and the internal structure (subject-predicate) and interprets both accordingly.

On top of the above advantages, the proposal developed here can, unlike the previous ones, correctly account for the acquisition process of DS (and Epexegesis) by children exposed to MG, as we will show in the next section.

5 EVIDENCE FROM ACQUISITION DATA

This section will first illustrate the predictions for the acquisition of DS deriving from the analyses presented in the previous sections. Subsequently, data on the acquisition of DS from three children acquiring MG will be presented. Finally, we will evaluate the syntactic analyses discussed above on the basis of the acquisition data.

5.1. Predictions for the acquisition of DS

The predictions for the acquisition of DS will be formulated on the basis of two facets. Firstly, we will consider how much structure is needed in order for the child to be able to produce utterances involving DS. In other words, what are the minimal requirements in a child's grammar for the emergence of DS? This differs in each analysis presented above. The second issue relates to the emergence of the several word orders available with DS and is based on the idea that early stages of language development can potentially reflect the underlying word order of a construction. This originates from research in the 60s and 70s that looked at the acquisition of transformations (McNeill, 1970;

Bellugi, 1971) and made use of children's errors (e.g., auxiliary inversion in questions) to provide evidence for a derivational theory of language. This idea was continued to be employed within the Principles and Parameters Theory. E.g., Thornton (1990) showed that 2-and-a-half year old children sometimes use an extra wh-phrase at the medial position in long-distance questions (*What do you think what Cookie Monster eats?*) and argued for the psychological reality of successive cyclic movement.[29] Within the Minimalist Program, the idea that early child data may reflect the underlying word order relates to the notion of economy. For example, according to Powers (2000), the two-word stage reflects the use of Merge only once, and the multi-word stage reflects successive use of Merge. According to Armon-Lotem (1998), the child prefers Merge over Move because this is less costly and according to Zuckerman (2001) initially a default mechanism directs the child to set a parameter to the most economical value that will result in less overt movement (see also Platzack, 1996; Roeper, 1996). In the rest of this section, the predictions from the four analyses discussed in the previous sections will be presented in turn.

The analysis of Androutsopoulou (1994; 1995) makes two predictions for the acquisition of DS. As DS involves multiple DefP layers, these layers should be available in the child grammar for the generation of DS. Additionally, as the word order D-N-D-A is derived from the word order D-A-D-N, D-A-D-N should emerge prior to D-N-D-A.

As far as word order is concerned, the analysis of Alexiadou & Wilder (1998) makes the same predictions as the analysis of Androutsopoulou (1994; 1995): the order D-A-D-N should again emerge prior to the order D-N-D-A, as D-N-D-A is the result of movement. However, given that the base word order in this analysis is D-D-N-A, this word order might be the first to be attested.[30] Finally, this analysis requires the availability of much more structure than the

analysis of Androutsopoulou. The DP-layer as well as the CP-layer should be available in the child grammar for the generation of DS.[31]

The predictions deriving from the analysis of Giusti (2003) with respect to the emergence of the different word orders are exactly the same as in Androutsopoulou's and Alexiadou & Wilder's. The order D-A-D-N should emerge prior to the order D-N-D-A, as the latter is the derived one. However, there is a difference between the analysis of Giusti and that of Alexiadou & Wilder: as the base word order in Giusti is D-D-A-N (and not D-D-N-A as in Alexiadou & Wilder) then this should be the first to emerge in child speech.[32] With respect to the availability of structure, only the DP layer is necessary for the generation of DS in the analysis by Giusti.

In our own account, as in Giusti's analysis, only a DP layer is necessary for the emergence of DS. As far as word order is concerned, it makes a totally different prediction compared to all the other analyses. Given that both word orders D-A-D-N and D-N-D-A are base word orders, it predicts the simultaneous emergence of both of them. Finally, two further novel predictions result from our analysis: 1) as according to it DS involves noun ellipsis, D-A structures involving ellipsis are predicted to emerge prior to or simultaneously with DS; 2) given that we analyse DS as a small clause, small clauses are predicted to emerge prior or simultaneously with DS.

The predictions deriving from the four analyses are summarised in Table 2 below.

&&PLEASE INSERT TABLE 2 HERE&&

The next section presents the data used to evaluate these predictions.

5.2. Acquisition data

The predictions for the acquisition of DS have been evaluated on the basis of the speech of three monolingual Greek children growing up in Athens, Greece. The data come from two corpora, the Christofidou Corpus (see Christofidou, 1998; Kilani-Schoch et al., 1997; Marinis, 2000/2003) and the Stephany Corpus (see Stephany, 1985; 1997) that comes from the CHILDES database (MacWhinney & Snow, 1985).

The Christofidou Corpus consists of the recordings of one child, Christos. The data collection was made by the mother of the child, Anastasia Christofidou, which was the main person interacting with the child and the recordings were made on a weekly basis. The recordings took place in a natural setting in the house of the family and consisted mainly of the description of picture books, free play with toys and talking about activities during the day or during previous days. The data analysed in this study consist of 69 recordings between the age of 1;7 and 2;8. The data has been transcribed in CHAT format and coded on the basis of the CHILDES coding scheme. Noun phrases involving imitations of preceding adult utterances, self-repetitions and formulaic expressions have been excluded from the analyses.

The Stephany Corpus consists of the recordings of five children (see Stephany, 1985). For the purposes of the present study only the data from two of the five children have been analysed (Mairi and Maria), as there were very few if any instances of DS in the speech of the other three children. The recordings of the Stephany Corpus were made in six-month intervals by Ursula Stephany (for details about the recordings, the transcription and the coding scheme of the Stephany Corpus, see Stephany, 1985). As in the Christofidou Corpus, phrases involving imitations, self-repetitions and formulaic expressions have been excluded from our analysis.

Details about the two Corpora used in this study are given in Table 3 below.

&&PLEASE INSERT TABLE 3 HERE&&

The next section will show when DS emerges in the speech of the three children under investigation as well as the number of utterances involving DS attested in their speech.

5.3. The emergence of DS

DS emerges in the speech of Christos at the age of 2;3.21 (year;month.day). At this age, Christos is at Stage II of his overall language development, that is his mean length of utterance (MLU) is between 2.0 and 2.5. Consider examples (31) and (32) below.

(31) Child:	Ta	kani	bu	**to**	**palio**	**to**	**Bede**.
	FUT	do	bu	the	old	the	Mercedes
	'The old Mercedes will fall down.'						
(32) Child:	To	xxx	**to**	**puli**	**to**	**meghalo**	o	Pitsos.
	to	xxx	to	puli	to	meghalo	o	Christos (target utterance)
	the	xxx	the	bird	the	big	the	Christos
	'Christos should/will xxx the big bird.'							

In the speech of Mairi and Maria, DS emerges at the age of 2;9.15 and 2;9.12 respectively, consider examples (33) and (34) below from the speech of Maria.

Mairi is at Stage III, that is her MLU is between 2.5 and 3.0 and Maria at Stage VI, her MLU is over 3.0.[33]

(33)Child:	Ke	(th)a	vro	ke	**ton**	**meghao**	**ton**	**liko.**
	and	FUT	find	and	the	big	the	wolf
	'And I will find the big wolf.'							

(34) Child: Thelo na pao **athino to to kabine to athino**.
Thelo na pao s-ton kabine ton alithino (target utterance)
want SUBJ go real the to-the toilet the real
'I want to go to the real bathroom.'

Example (34) above, shows a self-repair in the middle of DS, which we think is very revealing of Maria's capability to construct DS with both word orders (see also Stephany, 1997 for a similar view). Maria starts constructing DS with the D-A-D-N word order omitting the initial definite article. In the process of self-correction, she produces the D-N-D-A word order. Were she not able to use this word order, then she would have retreated to the D-A-D-N word order she started using initially.

As the two corpora analysed consist of naturalistic speech, the use of DS was not required and therefore the number of utterances involving DS is very low for Mairi and Maria.[34] However, in the speech of Christos the number of utterance involving DS was considerably higher than in the speech of the other two children.[35] Table 4 shows the emergence of DS and the total number of utterances involving DS in the speech of the three children.

&&PLEASE INSERT TABLE 4 HERE&&

As one set of predictions for the emergence of DS is related to the availability of functional layers in child grammar, the next section will concern the availability of the DP layer, which is relevant for all analyses and the CP layer, which is relevant for the analysis of Alexiadou & Wilder (1998).

5.4. Acquiring the DP- and the CP-layer

As DS involves the availability of the DP layer in all analyses discussed in this paper,[36] it is important to establish when this layer becomes available in their grammar. Evidence for the availability of the DP layer can be provided among others by the productive use of definite articles in obligatory contexts.

This is illustrated in Table 5 below that compares productive use of definite articles to the emergence of DS.

&&PLEASE INSERT TABLE 5 HERE&&

As shown in this table, all children use definite articles productively prior to the emergence of DS. This is what we predicted from all four analyses discussed here.

As the analysis of DS by Alexiadou & Wilder involves the CP layer, the CP layer should be available in child speech prior or simultaneously to the emergence of DS. Evidence for the availability of the CP layer can be provided by the use of wh-movement in their speech. Table (6) shows the emergence of wh-movement compared to the emergence of DS in the speech of the three children under investigation.

&&PLEASE INSERT TABLE 6 HERE&&

Table 6 shows that as in the case of the DP layer, all children under investigation show instances of wh-movement before they start using DS. Consider example (35) below from Christos.

(35)	Child:	**Ti**	kani	xxx[37]	o	Picioch?	(Christos 2;1.14)
		ti	kani	xxx	o	Christos	(target utterance)
		what	does	xxx	the	Christos	
		'What is Christos doing?'					

The use of wh-movement prior to the emergence of DS is not relevant for the analyses of Androutsopoulou, Giusti and our own, which do not make any predictions as to when the CP layer shall emerge in comparison to DS. However, it is relevant for the analysis of Alexiadou & Wilder. As wh-movement emerges prior to DS, this analysis is supported by the acquisition data.

The next set of predictions relate to the emergence of the several word orders that are possible in DS. The word order data will be presented in the next section.

5.5. Acquiring word-order

This set of data is the most relevant for the evaluation of the syntactic analysis of DS, as each analysis makes different predictions for the acquisition sequence process. However, there is one fundamental difference between our analysis and all other analyses. Our analysis predicts the emergence of all word orders

simultaneously, as both word orders (D-A-D-N and D-N-D-A) involve the same structure and no movement is involved. In contrast to our analysis, all other analyses predict some word order to emerge prior to another, as the two possible word orders are the result of movement. Additionally, the analyses of Alexiadou & Wilder and Giusti predict an underlying word order that does not correspond to any surface word order.

Table 7 shows the emergence of the two word orders in the children under investigation.

&&PLEASE INSERT TABLE 7 HERE&&

As shown in Table 7, there were no instances of the underlying word orders in the analyses of Alexiadou & Wilder and Giusti. This is not totally unexpected, as this word order does not correspond to any surface word order, but more importantly because definite articles are clitic elements and it would have been rather unusual for children to use two consecutive clitics at an early stage of development, given that children acquiring Greek do not use clitics at an initial stage of development (Marinis, 2000).

However, the most crucial piece of data from this table is the simultaneous emergence of both word orders in the speech of all three children. Consider examples (36a) and (36b) below from the speech of Mairi.

(36)	(a)	Child:	**O**	**mik(r)os**	**o**	**likos**	pu	ine?
			the	small	the	wolf	where	is
			‘Where is the small wolf?’				(Mairi 2;9.15)	
	(b)	Child:	**O**	**likos**	**o**	**mik(r)os**	pu	ine?
			the	wolf	the	small	where	is

'Where is the small wolf?' (Mairi 2;9.15)

Example (36) shows that the two word orders are in free variation in the speech of Mairi. This developmental pattern has only been predicted in our analysis, as both word orders require the same amount of structure and are analysed in the same way. All other analyses predict a pattern, in which the word order D-A-D-N emerges prior to the word order D-N-D-A. This latter pattern has not been attested in the data analysed in this study.

Additional support for our analysis comes from the emergence of elliptical structures involving empty nouns and small clauses. This will be discussed in the next section.

5.6. Acquiring elliptical structures involving D-A and small clauses

DS in our analysis involves an elliptical DP; more specifically, it involves a DP with an empty noun. As a consequence, the prediction for the acquisition of DS is that utterances involving empty nouns should be attested prior to the emergence of DS. Table 8 shows the emergence of elliptical DPs consisting of a definite article and an adjective, but without the presence of a noun (D-A) in the speech of the children under investigation. Additionally, Table 8 shows the number of elliptical DPs attested in the speech of the children and the emergence of DS for comparison.

&&PLEASE INSERT TABLE 8 HERE&&

As shown in Table 8, all children show instances of elliptical DPs prior to the emergence of DS. Maria shows only one instance of D-A, however,

Christos and Mairi use quite a lot of elliptical DPs. Consider example (37) below from Mairi.

(37) Adult: Rodha ine afti?
wheel is this
'Is this a wheel?'
Child: Ne. **i** **kitini** ine. (Mairi 2;3.17)
yes the yellow is
'Yes. It is the yellow one.'

Finally, DS in our analysis is an instance of a small clause. This predicts that small clauses should emerge prior or at the same time with DS. Table 9 shows the emergence of small clauses in the speech of the three children.

&&PLEASE INSERT TABLE 9 HERE&&

Small clauses emerge very early in the speech of all children, much earlier than DS. Consider examples (38) and (39) below.

(38) Adult: Aftos ine o thios.
this is the uncle
'This is the uncle.'
Child: I o baba atos. (Mairi 1;9.17)
Ine o babas aftos (target utterance)
Is the daddy this
'This is daddy.'

(39)	Child:	ena	mik-aki	piti	ine	ato.	(Maria 1;9.17)
		ena	mikro	spit-aki	ine	afto	(target utterance)
		a	small	house-DIM[38]	is	this	
		'This is a smal house.'					

It is not surprising that all children show instances of small clauses at a very early stage. In fact, Radford (1990) suggested that child utterances at the two-word stage are instances of small clauses (see also Powers, 1996; Potts & Roeper, 2005).

Summarising this section, the children under investigation start using elliptical DPs and small clauses prior to the emergence of DS. Although this is not incompatible with the other analyses of DS, it provide additional support for our analysis, as this is the only analysis that predicts the emergence of elliptical DPs prior to the emergence of DS and analyses DS as a small clause.

6 CONCLUSION

In this paper we have argued for an analysis of Determiner Spreading in Modern Greek as DP predication. By doing so, not only do we manage to distinguish this phenomenon from other constructions involving article-like elements attached to adjectives, but we also capture the distinctive semantic interpretation of DS, which is sometimes one of a subset, what has been dubbed the restrictive interpretation, and sometimes a predicative, the choice between the two being down to semantic-pragmatic factors.

Our analysis captures DS as a configuration of a DP with a subject DP in its specifier. Thus, we are able to account for the freedom of word orders

when each lexical element, noun and adjectives, is preceded by articles; moreover, we can also explain the ordering restrictions arising when one of these articles is 'missing'. We also lay the groundwork towards unifying DS with other constructions of Greek, and probably beyond, involving two DPs in a tight relation of predicativity with each other.

Comparing our account with competing analyses of DS we reach the conclusion that not only ours accounts for word order facts and the semantic interpretation of DS in a considerably more accurate fashion but that also it does so using a significantly simpler theoretical armamentarium as well as a more thrifty methodological machinery. Finally, we evaluate the accounts presented on the basis of first language acquisition data. We find that, although the data are compatible with all these analyses that make clear predictions about the emergence of particular aspects of grammar, they also suggest the accuracy of the one presented here, as they clearly illustrate both basic orders of DS to emerge simultaneously.

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Table 1. Noun phrases with multiple articles

	Semitic definiteness spreading	*Albanian* adjectival determiners	*Scandinavian* double definiteness	*Greek* Determiner Spreading
Obligatory	✓		✓	
Special Interpretation				✓
With indefinites		✓		

Table 2. Predictions for the acquisition of DS

	Layers	***word-order***
Androutsopoulou (1994;1995)	DefP	D-A-D-N > D-N-D-A
Alexiadou & Wilder(1998)	DP, CP	D-D-N-A > D-A-D-N > D-N-D-A
Giusti(2001)	DP	D-D-A-N > D-A-D-N > D-N-D-A
present analysis	DP	D-A-D-N = D-N-D-A

Table 3: Corpora

	Christofidou	***Stephany***	
Child	**Christos**	**Mairi**	**Maria**
Age	1;7-2;8	1;9/2;3/2;9	2;3/2;9
Nr. of recordings	69	12	5
Nr. of utterances	12,383	4,154	3,074

Table 4: First use and number of utterances involving DS

	First use	***Total nr. of utterances***
Christos	2;3.21	28
Mairi	2;9.15	2
Maria	2;9.12	2

Table 5: Productive use of definite articles vs. emergence of DS

	definite articles	***DS***
Christos	2;0	2;3
Mairi	1;9	2;9
Maria	2;3	2;9

Table 6: The emergence of wh-movement vs. emergence of DS

	wh-movement	***DS***
Christos	2;1	2;3
Mairi	1;9	2;9
Maria	2;3	2;9

Table 7: The emergence of the two word-orders in DS

	D-D-A-N	***D-D-N-A***	***D-A-D-N***	***D-N-D-A***
Christos	-	-	2;3.21	2;3.21
Mairi	-	-	2;9.15	2;9.15
Maria	-	-	2;9.12	2;9.12

Table 8: First use and number of utterances involving D-A vs. emergence of DS

	First use	***Total nr. of utterances***	***DS***
Christos	2;1.14	45	2;3
Mairi	2;3.17	18	2;9
Maria	2;3.09	1	2;9

Table 9: The emergence of small clauses vs. emergence of DS

	small clauses	***DS***
Christos	2;1	2;3
Mairi	1;9	2;9
Maria	2;3	2;9

FIGURE 1

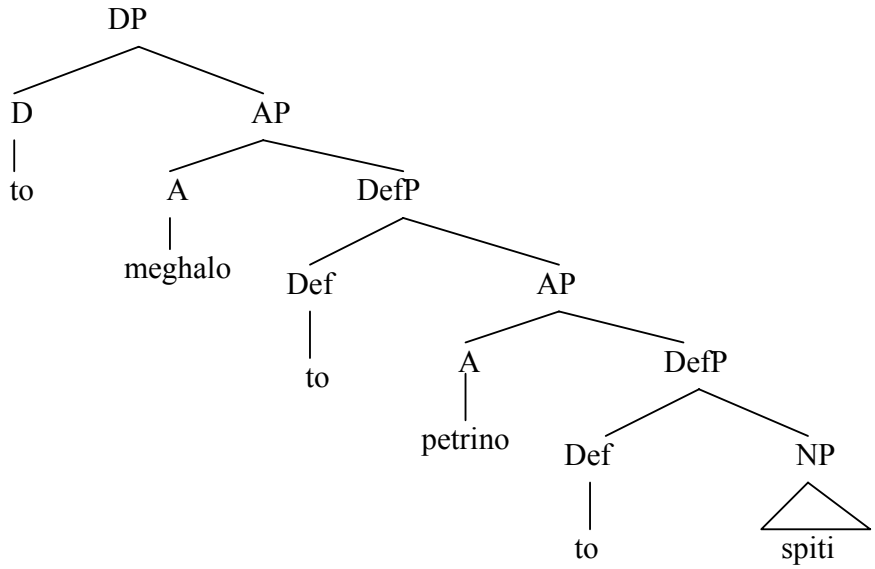
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FIGURE 2

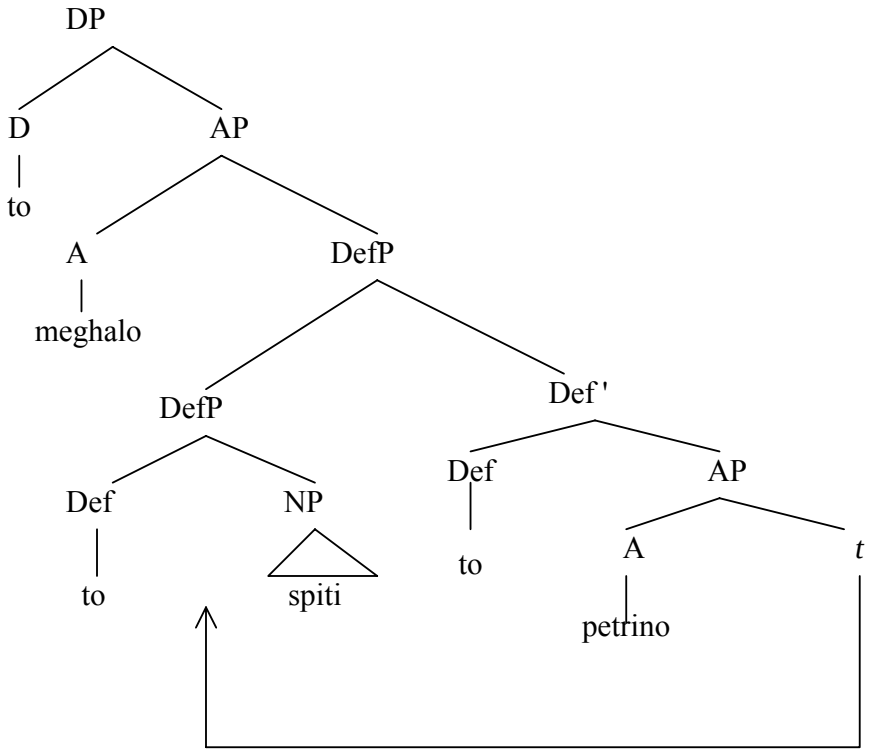
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FIGURE 3

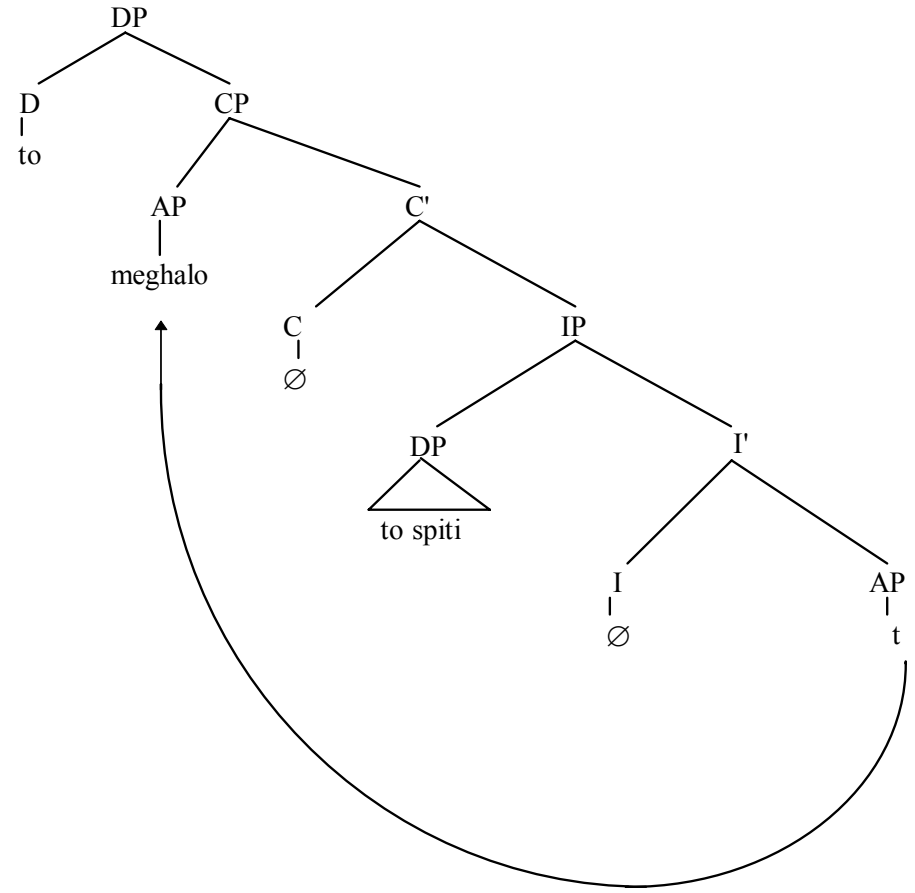


FIGURE 4

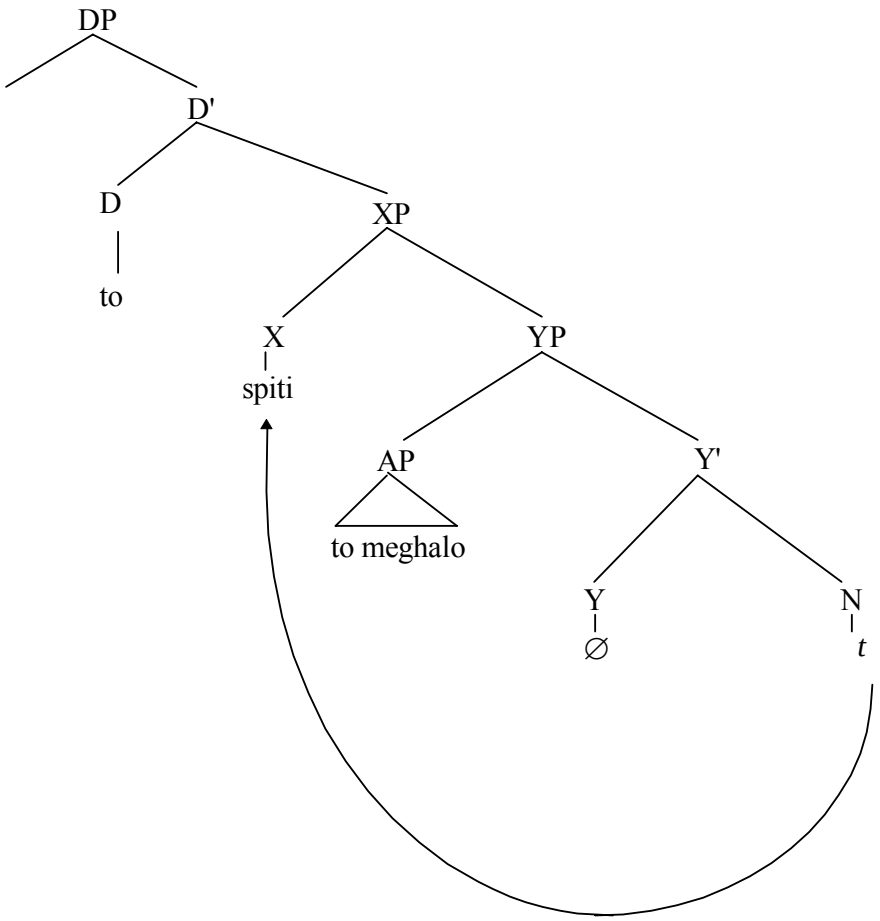


FIGURE 5

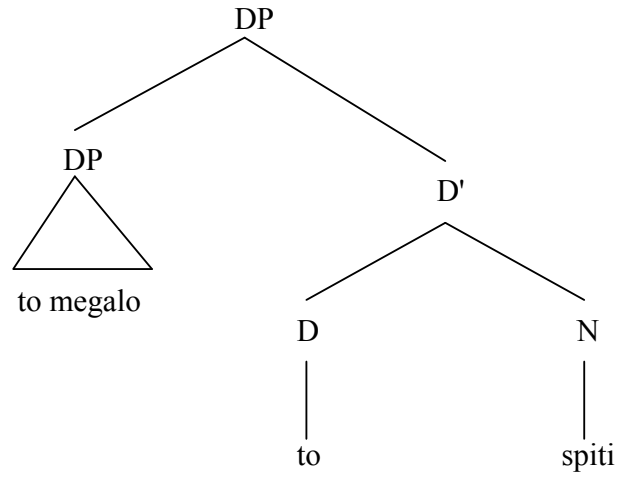


FIGURE 6

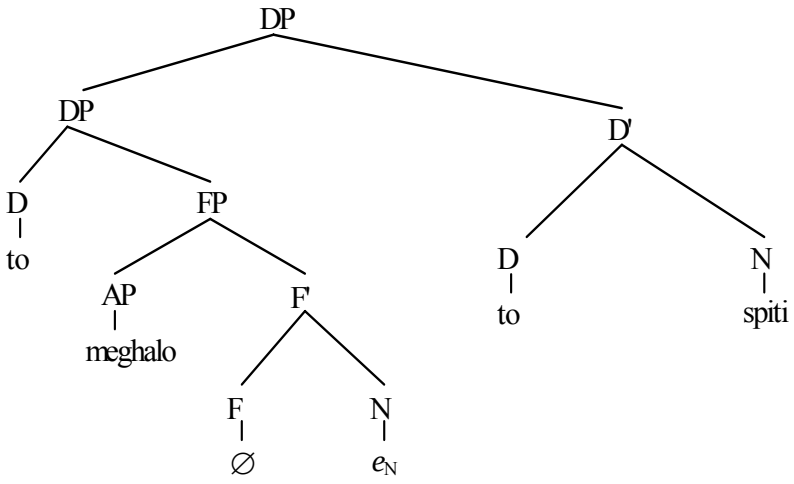


FIGURE 7

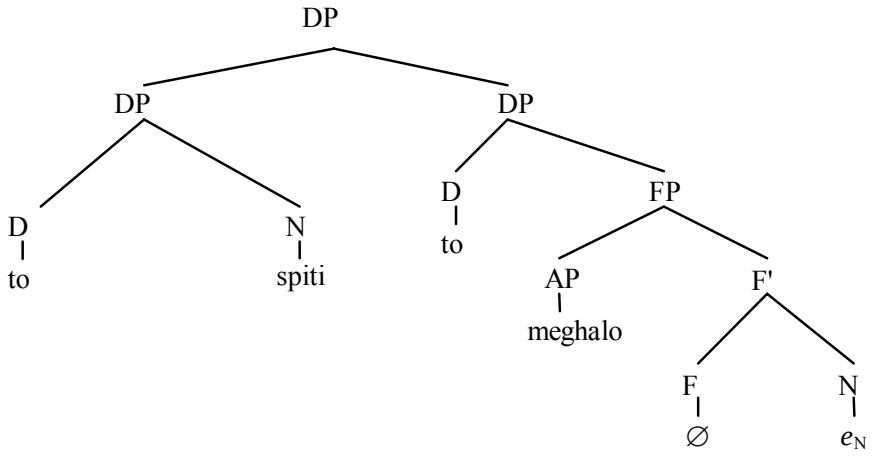
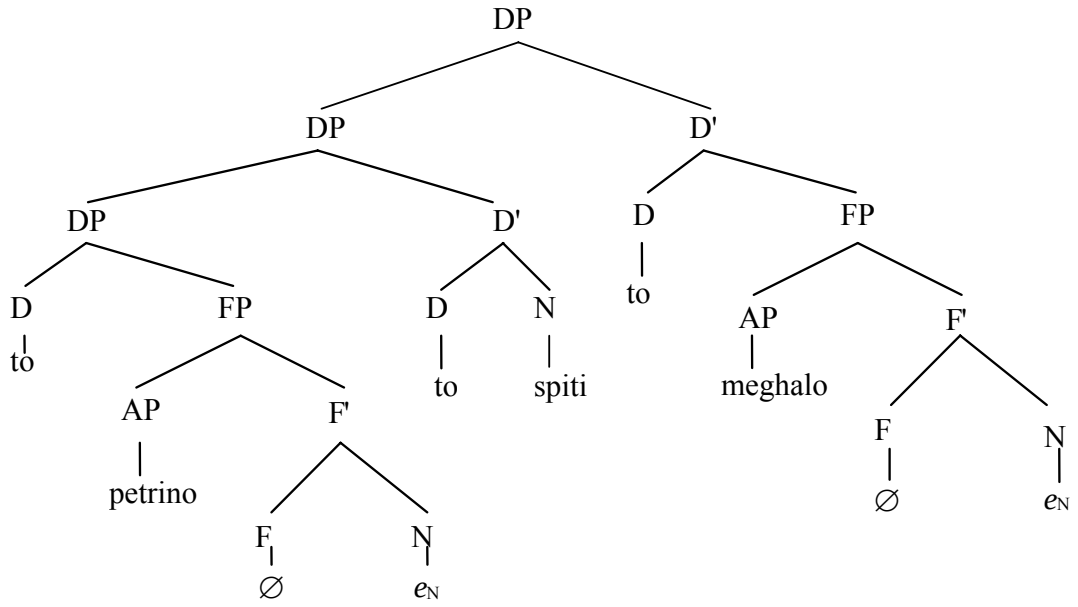


FIGURE 8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FOOTNOTES

[1] To the best of our knowledge, the term 'Determiner Spreading' was introduced by Androutsopoulou (1994). We prefer this neutral term over the more recent 'polydefinite' (Kolliakou 2003; 2004), because Greek 'definite' determiners (the *o*, *i*, *to* paradigm) are not exclusively definite in interpretation; Giannakidou & Stavrou's (1999) have shown the Greek 'definite' article to be an intensionalisation operator. Expectedly, Determiner Spreading is not a definite construction: for instance, it is possible in generic DPs. We will nevertheless continue using 'D', '(definite) determiner' and '(definite) article' throughout this paper to refer to the *o*, *i*, *to* paradigm. Regarding the Greek 'indefinite determiner', we will have very little to say about it, as this is not involved in DS structures and it does not uncontroversially belong to the syntactic category of Determiner.

[2] See Manolessou (2000: Ch. 4) for a detailed description and discussion.

[3] Articles and related markers appear in boldface throughout this section.

[4] FUT= "future"; SUBJ= "subjunctive". Example adapted from Kolliakou (2004: 270). Discussion here follows Kolliakou (1998; 2004) and Manolessou (2000: Ch. 4).

[5] See Kolliakou (2004) on the relevance of prosody in disambiguating Greek DPs.

[6] A further piece of evidence potentially supporting the relevance of predication in DS is the fact that only intersective adjectives can participate in it as Richard Larson (p.c.) pointed out. Very interestingly, DS with *epithets* such as *murlos* ('nutter'), *kopanos* ('blockhead') and so on is interpreted predicatively and hardly ever as restrictive. We leave this open, as relatively little is understood about the position, referential properties (but see Lasnik 1991) and feature-makeup of epithets. The interested reader is referred to Manolessou (2000: Ch. 4).

[7] Anamaria Fălăus (p.c.) pointed out to us that Romanian (and, as a reviewer adds, related varieties such as Aromanian) appears to have Determiner Spreading, in fact it has a dedicated D-element for use in this environment: *cel*. See also Campos & Stavrou (2004) – which came out when this paper was almost completed.

[8] We are grateful to Idan Landau for discussing and elucidating the Hebrew facts. Actually, there are intriguing similarities of Hebrew adjectival modification to Construct State nominals, where a sort of 'definiteness spreading' also occurs (Ritter, 1991; Siloni, 1997; Dobrovie-Sorin, 2000).

[9] The examples in (11) are Norwegian, from Giusti (2003). As 'Mainland Scandinavian' here refers to Swedish and Norwegian dialects but not Danish, (11a) is grammatical in Danish but (11b) is out. The contrast between (11c) and (11d) obtains in all the three: Danish, Swedish and Norwegian. In most Scandinavian varieties (11d) has an emphatic / demonstrative interpretation instead, that's why is starred under a 'the boy' reading.

[10] Actually, it is anything but obvious that *–en* / *–et* is a D article, despite Hellan (1986) and Taraldsen (1990) arguing so. It has been convincingly suggested that *–en* / *-et* is a separate functional category involving a syntactic feature [+def] (cf. Kester 1996: 141-154 and, especially, Delsing, 1988) or a marker of definiteness agreement (Giusti 2003); in the latter case, (11c) is preferred over (11d) on economy considerations, because (11c) projects less structure.

[11] As we are going to argue that DS and Albanian adjectival articles are two different phenomena, interesting questions arise on the nature of micro-parametric variation, the nature of syntactic borrowing as well as the effects of language contact on language change, open for further research.

[12] (12b), cited as grammatical in Giusti (1997), is at best marginal for some native speakers (Luciano Todri, p.c.); the same holds for ?**i mire djalë*, an ordering possibility not listed in (12). Both belong to the literary idiom and the northern Gheg variety of Albanian, hence are considered archaic and unnatural by speakers of Standard Albanian, a variety originating from the southern Tosk dialect. We are grateful to Luciano Todri for providing us with valuable discussion on his native Albanian intuitions and to Arhonto Terzi for relevant discussion.

[13] As there is no such thing as a 'Minimalist Theory', minimalist aspirations are methodologically expressible in any grammatical framework; see Chomsky (1995: 92) for instance.

[14] SpecDP is the position for DP-internal focus and topics (Horrocks & Stavrou, 1987) and demonstratives (Stavrou & Horrocks, 1989; Campbell, 1996; Panagiotidis, 2000) in MG. More discussion on SpecDP is deferred until section 4.2.

[15] Contrast this to the rather 'productive' nature of Mainland Scandinavian double definiteness markers *–en* and *–et*, as they can appear in the *absence* of *den* and *det* with interesting interpretive effects (albeit different from those of DS): compare *Vitte Hus-et* ('The White

House') with *det vitte hus-et* ('the white house', e.g. on the hill). Again, see Hellan (1986), Delsing (1988) and Taraldsen (1990) for discussion.

[16] But note that Manolessou (2000: Ch.4) presents evidence that historically D-N-D-A predates D-A-D-N in Greek by several centuries.

[17] We wish to thank an anonymous reviewer for discussing judgements with us as well as the necessity to properly contextualise examples in (19) and (20).

[18] Why this is the case is beyond the scope of this work: the interested reader is referred to Manolessou's work for insights.

[19] Two anonymous reviewers wonder whether this entails that DS and equatives have the same underlying structure. We would not wish to make such a claim; we only mean to show that both DS and equatives have *similar* underlying structures, which are unlike that of relative clauses. Moreover, both DS and equatives are interpreted in *some* predicative fashion, so this similarity is not circumstantial.

[20] Although Stavrou does not take them to be both DPs.

[21] We are indebted to Caroline Heycock and Kleanthes Grohmann for discussing this topic with us.

[22] I.e. the *o*, *i*, *to* paradigm. See footnote 1.

[23] We treat D-linking and specificity in unison here. No theoretical claims are implied. We are grateful to an anonymous reviewer for extensive comments on indefinite subjects in DS and elsewhere.

[24] The structure exemplified in (25) is extremely common and a way to express kinship terms with proper names in MG: *o thios (o) Nikos* ('uncle Nikos').

[25] Naturally, DS involving *two* elliptical DPs is fine, especially as an elliptical answer to a question like "Which house would you buy?": *to meghalo to petrino* ('the big stone one')

[26] How can a Ds constituent be both propositional (a predication structure) and referential? Its head is still a D, that of the predicate DP, thus a 'referential' category.

[27] The discussion here has greatly benefited from discussions with Kleanthes Grohmann, who we wish to thank.

[28] An anonymous reviewer whether this entails that we import a full clausal structure into DS, like Alexiadou & Wilder (1998) do. The answer is evidently negative: we do not propose a

constituent with full discourse (C) and temporal / aspectual (Infl) structure, we only speculate on the possibility of *two* D positions being available.

[29] For the psychological reality of traces in sentence processing research, see Fodor (1989), and more recently Gibson & Warren (2004) and Marinis, Roberts, Felser & Clahsen (2005).

[30] However, as this word order involves adjacent definite articles, it is rather unlikely to be attested in early developmental stages, which show a high rate of definite article omission.

[31] In Alexiadou & Wilder's analysis, DS involves reduced relative clauses, and thus, the CP layer is necessary. Evidence for the existence of the CP layer can be provided if the child is using wh-questions, as wh-questions unambiguously require the projection of the CP layer.

[32] But see footnote 29.

[33] One of the reviewers raises the issue of whether the delayed emergence of DS in Mairi's and Maria's speech (at 2;9) could be an epiphenomenon of the data collection timing. Interestingly, there is data from both children when they are younger than 2;9 and at a similar or later developmental stage from Christos when he first used DS – Mairi's recordings at 1;9 with MLU over 2.0 and at 2;3 with MLU over 2.5 and Maria's recording at 2;3 with MLU 2.5. In these recordings, Mairi and Maria do not show any instances of DS. Therefore, we do not think that the delayed emergence of DS in those two children is due to the cross-sectional nature of the corpus per se. However, given the gap of recordings between 2;3 and 2;9 for both children, we cannot exclude the possibility that they started using DS at some point between the age of 2;3 and 2;9. But this would still be later than in the speech of Christos, who started using DS at the age of 2;3 with MLU between 2.0 and 2.5.

[34] One of the reviewers raises the issue as to whether such a small dataset can validate the hypotheses under discussion. We agree that the data from Mairi and Maria are sparse, and that it is not possible to make a strong claim only on the basis of them. However, the data from Christos are much more reliable, as he shows a larger number of utterances with DS. In addition, given that the recordings were made on a weekly basis, this is a quite dense dataset that can provide a reliable source for the issue of the emergence of the two word orders.

[35] We agree with one of the reviewers about the importance of being able to show that children have the adult interpretation of DS. Due to the lack of sufficient context, it was not possible to address this issue. It is a well-known fact that in longitudinal data it is very difficult to infer about the exact meaning of an utterance and disentangle different possible readings. Elicitation

and comprehension tasks would be most appropriate to address this issue, which we leave open for future research.

[36] As DefP in the analysis of Androutsopoulou is involved only in DS, there is no independent way to find out whether the children have acquired this layer other than by the use of DS. However, this analysis involves also the use of the DP layer, which can be independently tested as in the other analyses.

[37] xxx = unintelligible word

[38] DIM = 'Diminutive'.