Stability and change in postverbal subject positions

Nikolaos Lavidas
Aristotle University of Thessaloniki

ΠΕΡΙΛΗΨΗ

Στο παρόν άρθρο εξετάζουμε τις παραμέτρους που καθορίζουν τη σταθερότητα και τις αλλαγές στις μεταρηματικές θέσεις του υποκειμένου, και ειδικά τη διατήρηση και την απώλεια της σειράς Ρήμα Υποκείμενο Αντικείμενο. Σε αντίθεση με την αστάθεια στη σειρά των όρων στην ιστορία της Αγγλικής, η σειρά των όρων στην Ελληνική χαρακτηρίζεται από σταθερότητα σε σχέση με τη δυνατότητα μεταρηματικού υποκειμένου. Αυτή η διαφορά είναι αποτέλεσμα της παρεμπόδισης ("blocking") των συνεπειών των τάσεων στην Πληροφοριακή Δομή ("Information Structure Drift"), που οφείλεται στη σταθερότητα της δυνατότητας παράλειψης του υποκειμένου καθώς και στη σταθερότητα των χαρακτηριστικών του ονοματικού συστήματος.

KEYWORDS: syntactic change, VSO, Information Structure Drift, pro-drop, D-system

1. Introduction[*]

The aim of this paper is to examine changes and stability in postverbal subject positions, especially the retention of postverbal positions and the V(erb)S(ubject)O(object) word order in the history of Greek, in contrast to the loss of postverbal positions and the VSO order in the history of English. According to the pro-drop parameter (Rizzi 1982), the availability of null subjects, the absence of that-t(race) effects, and the presence of postverbal subjects are correlated. Greek shows stability in its history regarding all three characteristics of the pro-drop parameter (Lavidas 2008, 2009). With regard to postverbal subjects (and following Roussou & Tsimpli's (2006) approach), VSO in both Classical Ancient and Modern Greek may be the output of two derivations: the first derivation involves V in T(ense) and S and O in domainV, whereas the second derivation involves V in C(omplementiser), S in domainT, and O in domainV. On the other hand, not all postverbal structures are retained in languages that allowed postverbal subjects in earlier periods. The loss of the VS and the VSO order is attested, for example, in the history of English: Old English allows null expletives, optionality between V2 and non-V2 word order,[1] and VSO, whereas Modern English does not allow null expletives, V2 characteristics, or VSO. Moreover, the development of V2 properties (Benincà 1984; Fontana 1993; Poletto 2006) and VSO order is different in the history of different Romance languages: for example, in contrast to Modern Spanish, V2 and VSO (but not VS) were lost from Italian during the Renaissance and are not found in Modern Italian (although Modern Italian is a pro-drop language).

In this paper, we will try to show the following two points:

(i) *Stability* in the history of Greek regarding the six possible word orders, in contrast to *word order instability* in the history of English, is the result of a "blocking" of the consequences of Information Structure Drift (Westergaard 2010), and this "blocking" can be

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[1] Cf. the following examples of V2 and non-V2 optionality in Old English (Westergaard 2009: 65):

(1) *On   his   dagum **sende** Gregorius us   fulluht.*
   in   his   days   sent   Gregory   us   baptism
   "In his time, Gregory sent us Christianity."
   (from Haeberli 2002a: 88, ChronA2 18.565.1)

(2) *&   fela   dinga swa gerad man **sceal** don.*
   and   many   things so wise man must   do
   "And such a wise man must do many things."
   (from Haeberli 2002a: 90, Law 4 448.5.4)

caused by stability in pro-drop and some aspects of the D(eterminer)-system.[2] Following Lightfoot's approach to language change and its relation to language acquisition, a reflection of the importance of this parameter for word order in Greek will be presented. According to Westergaard (2010), Information Structure Drift is connected to the tendency of subjects to be given information. Westergaard has shown (analyzing V2 in the history of English) (a) that a word order linked to informationally given subjects is more frequent in language use (for example, SV without V2 properties) than a word order linked to discourse-new subjects (for example, VS or sentences with V2) and (b) that the word order linked to discourse-new subjects (for example, VSO) is vulnerable to change (because it may fall below the threshold for acquisition; cf. paragraph 2.2.1 below).

(ii) The differences in the presence of VS and VSO in Greek –as from the Hellenistic Greek period onward a higher frequency of postverbal subjects is observed– are not related to the D-system or V2 phenomena but to changes in the availability of V in T. Following Lightfoot's approach again, we will attempt to show a reflection of the role of the availability of V in T in child language.

2. Derivation of postverbal subjects and VSO: theory and diachrony
2.1. Theoretical background of postverbal subjects
Regarding the syntactic analysis of postverbal subjects, we follow Roussou & Tsimpli (2006). Roussou & Tsimpli assume the presence of (recursive) clitic-shells in the clause structure.[3, 4] The recursion of the clitic-shells in the V domain (d_V), the T domain (d_T), and the C domain (d_C) is consistent with the proposals of Platzack (2001), Grohmann (2003), and Manzini & Savoia (2004) regarding the division of the clause structure into the "thematic" domain above V (or as part of the VP-shell), the T domain (where grammatical relations are established), and the C domain (where discourse and information structure are represented). Roussou & Tsimpli suggest that the recursion of the clitic-shell involves not only clitics but also argument DPs. According to this account, VSO may be the output of two derivations: the first would involve V in T and S and O in d_V, and the second would involve V in C, S in d_T, and O in d_V:

(1a) $[_T$ estile $[_{CL1}$ o   Petros $[_{CL2}$ to   ghrama $[_V$ t_v $]]]]$
      sent.3SG   the.NOM Petros.NOM the.ACC letter.ACC
(1b) $[_C$ estile $[_{CL1}$ o   Petros $[_{CL2}$ $[_T$ t_v $[_{CL1}$ $[_{CL2}$ to   ghrama $[_V$ $t_v]]]]]]]]$
        sent.3SG   the.NOM Petros.NOM   the.ACC letter.ACC
    "Petros sent the letter." (from Roussou & Tsimpli 2006: 329, ex. 17)

The structures in (1) are identical at the surface level[5] but differ in their interpretation: (1a) is a declarative sentence that can be used as an answer to a wide-focus question ("What happened?"; Roussou & Tsimpli 2006: 317-322); (1b) involves verb-focusing and can be used

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[2] Stability in D-system characteristics means that, in all periods of the history of Greek, DPs inflect for case and phi-features.

[3] The structural positions that DPs occupy have been described based on the similarities between clitics and determiners: according to Sportiche (1995, 1999), clitics are generated in distinct functional positions outside the VP, and these functional positions are realized by DP arguments. Manzini & Savoia (2004) have argued that clitic heads form a cluster, a "clitic-shell", that can repeatedly appear above V, T, and C, as in (1) (CL1 and CL2 roughly correspond to subject and object clitics, respectively):

    (1) $[_α$ CL1 – CL2 C $[_β$ CL1 – CL2 T $[_γ$ CL1 – CL2 V$]]]$

[4] Due to space limitations, we will not discuss here other important theoretical analyses of Modern Greek word order, such as those of Alexiadou & Anagnostopoulou (2001) or Spyropoulos & Philippaki-Warburton (2002).

[5] We should mention the role of prosody in the different interpretations of these sentences (1a and 1b). (1a) is a declarative clause, while (1b) is a verb-focusing clause that can be either an emphatic statement or –with interrogative intonation– a question.

either as an emphatic statement or as a yes-no question. According to Roussou & Tsimpli, (1b) illustrates a structure in which one clitic position per domain is activated, and therefore spelled out, whereas in (1a) both clitic positions in the same domain are filled, which means Modern Greek allows both arguments to appear in d_V. On the other hand, not all pro-drop languages allow both VSO derivations: for example, Modern Italian does not use any of the above derivations (without focusing or topicalization).[6] Roussou & Tsimpli argue that this difference between pro-drop languages that do or do not allow VSO order can be reduced to a lexicalization parameter that relates to the D-system of the specific grammars. According to Roussou & Tsimpli's analysis, the fact that the determiner system in the two languages differs (Modern Greek distinguishes between a nominative ('subject') and an accusative ('object') definite article, while in Modern Italian this distinction is neutralized) results in Modern Greek having two distinct sets of determiners that lexicalize different features on the clitic-shell, whereas in Modern Italian the same element lexicalizes both features (those relating to a subject and an object DP). This means that, in Modern Greek, DPs inflect for case and phi-features, whereas in Modern Italian they do not. According to this approach, the result of that difference is that a subject DP and an object DP can both occur in the same domain in Modern Greek (because the nominal features associated with the subject and the object are distinguished and each spells out a different feature), but not in Modern Italian (because D can spell out the nominal features associated with either the subject or the object; if it introduces an object DP, the presence of a subject DP in the same domain is blocked).

2.2. Diachronic aspects of postverbal subjects

The general picture of the word order diachrony in two languages (Greek and English) that demonstrate two examples of the aspect of the pro-drop parameter that has to do with postverbal subjects is as follows: in Old English, both SV and VS are available, but in Modern English only SV is available. In Old English, both OV and VO are available, but in Modern English only VO is available. Changes in pro-drop (that is, from expletive drop to non-pro-drop), V2 (from V2/non-V2 variation to non-V2), and D-system (loss of morphological cases) are attested in the history of English. On the other hand, in the history of Greek we observe from the Hellenistic period onward the retention of SV and VS orders with an increase of postverbal subjects and the availability of both VO and OV with a preference for VO. There are no changes in pro-drop, V2, or the D-system characteristics (DPs always inflect for case); there are only changes in the tense system.

We argue that reflections of the previous parameters are to be found in language acquisition data. As we will show, in child Greek it is only when the morphological realization of nominal features in the nominal system is available –and not as soon as pro-drop emerges– that VSO is also available. Westergaard (2005a) has argued that children learning English show an early sensitivity to characteristics related to SV/VS and VO/OV orders and sentences with the verb in the second position.

2.2.1. Loss of VSO; English

Returning to the English diachrony, VSO is ungrammatical in Modern English, but it is attested in Old and Middle English. Old and Middle English are expletive pro-drop languages (Hulk & van Kemenade 1995), as shown in example (2):[7]

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[6] VSO is allowed in Modern Italian only if (a) the subject bears contrastive focus, or (b) the object is doubled by a clitic, or (c) the subject is a pronominal.

[7] By expletive pro-drop, we mean the availability of dropping the expletive (expletive-drop does not result in an ungrammatical sentence; that is, it is not unattested, and Old English can have, but does not require, expletive pro-drop; see Haugland 2007). Cf. also Hulk & van Kemenade (1995: 232): "Expletive pro-drop is found in a number of Germanic languages ([...] Modern Dutch, Old and Middle English)".

(2)   *and   swa   miclum   sniwde*
       and   *pro*   so   heavily   snowed
       "And it snowed so heavily." (Epist. Alex. 159, 538)

As far as the grammaticality of VSO orders in Old and Middle English is concerned (in contrast to the ungrammaticality of this order in Modern English [a non-pro-drop language]), VSO orders in the history of English can be seen as examples of both types of VSO derivation: the availability of VSO order is due to *the D-system* (the morphological realization of nominal features in the nominal system; Old English VSO orders) and/or *V2-characteristics* (Old and Middle English VSO orders):[8]

(3a)   *Secgaðeac ure   bec   þæt we sceolon ðas   feowertyne*
       say.3PL   our.NOM   books.NOM   that we shall   these   fourteen
       niht   mid   micelre geornfulnysse healdan
       nights   with   great   earnestness   hold
       "Our books also say that we should hold these fourteen days with great earnestness." (Ælc.G. XIII.5)
(3b)   *þa   gemette   he   sceaðan*
       then   met.3SG   he.NOM   robbers.ACC
       "Then, he met the robbers." (AELS 31.151)
(3c)   *Him geaf   þa   se   cync   twa   hund   gildenra   pænenga*
       him   gave.3SG then   the.NOM king.NOM   two   hundred.ACC
       golden.GEN   pennies.GEN
       golden.GEN   pennies.GEN
       "Then, the king gave him two hundred golden pence." (Apollo, 42.51.20)
(3d)   *hæfdon   hi   hiora   onfangen*
       had.3PL   they.NOM   they.GEN   received
       "They had received them." (ASC, Parker 894)

Allen (1999: 35) argues that, in a sentence such as (3a), "nothing appears to be emphatic, but important new information is to be found at the end of the sentence [...]. What is being focused on here is the message that the books tell us, rather than the source of the message". A characteristic example of the XVSO order in Old English is presented in (3b). The subject pronoun often inverts with the verb in sentences introduced by *þa* and *þonne* 'then' (van Kemenade et al. 2008; van Kemenade 2009). According to the well-accepted proposal that there are two landing sites for the verb in Old English –one in C (or Force) (when the first constituent is a wh-word, the negator *ne* or the adverbs *þa/þonne*) and one in T (or Fin) (cf. Los 2009)– the verb in (3b) would most likely be considered as having the landing site in C. The example in (3c) is quite interesting, as the order is *IndirectO V þa S DirectO* and not the often attested order *þa V S*: the indirect object is fronted, but the subject and the direct object remain postverbal (Haeberli 2002a, b). Furthermore, many cases of the Auxiliary Verb-Subject-Object order are also attested (3d).

Following Kroch & Taylor (1997) and Westergaard (2009), we assume that the verb in Old English moves to T (or I, in their terms),[9] making Old English what is referred to as an IP-V2 (or TP-V2) language (like Modern Yiddish and Modern Icelandic, in contrast to

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[8] We should note that the distribution of English and Greek VSO is different (and that Old English, like Greek, had both derivations). In Old English, VSO with the verb in clause-initial position is rare (due to the TP-V2 characteristics), and most VSO clauses are of the type XVSO. In Early Middle English, verb-initial VSO exists, but it is even rarer and mostly in clauses that begin with the clitic negation *ne*.
[9] Even if the Topic is in [Spec, CP]: Kroch & Taylor (1997): "while the tensed verb in an Old English V2 sentence moves to I[0], the topic moves, not to Spec,IP but to Spec,CP".

languages such as Modern German or Modern Dutch, where the verb moves to C).[10] The inflectional system of Old English appears to allow the postverbal position of both subject and object even in cases when V has not moved to C (according to the approach of Roussou & Tsimpli, in this case the Subject will be in d_V: $[_T V [_{CL1} S [_{CL2} O [_V t_v]]]]$). Four cases are productive in Old English (nominative, accusative, dative and genitive), and, according to Roberts (1997), overt movement in Old English is triggered by strong features of functional heads (cf. also van Kemenade 1987; Biberauer & Roberts 2005). In contrast, VSO orders in Middle English cannot be attributed to the D-system because case markings are lost.[11] Tables 1 and 2 present the D-system (demonstratives/articles and nouns) in Old and Middle English, respectively.

Table 1. The D-system of Old English
1a. Old English demonstratives[12]

	singular			plural
	masculine	feminine	neuter	
nominative	*se*	*seo*	*þæt*	*þa*
accusative	*þone*	*þa*	*þæt*	*þa*
genitive	*þæs*	*þære*	*þæs*	*þara*
dative	*þæm*	*þære*	*þæm*	*þæm*

1b. Old English nouns (for example, the *a*-stem declension: *stan* 'stone', masculine)

	singular	plural
nominative	*stan*	*stanas*
accusative	*stan*	*stanas*
genitive	*stanes*	*stana*
dative	*stane*	*stanum*

Table 2. The D-system of Middle English
2a. Invariant form *the*: definite article[13]

	singular	plural
nominative	*the*	*the*
accusative	*the*	*the*

2a´. *that*: deictic

	singular	plural
nominative	*that*	*tho* (northern: *tha*, later: *those*)
accusative	*that*	*tho*

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[10] According to Westergaard (2009), Kroch & Taylor's analysis is in accordance with the newer approaches of Roberts (1996) and van Gelderen (2004), who, in a Split-CP model, also argue that the verb in Old English declaratives moves to a head (Fin°) that is lower than the landing site for the verb in *wh*-questions. Furthermore, van Gelderen (2004) assumes that the non subject-initial elements in Old English are in [Spec,TopP] position, while the subject is in the head of this projection (below ForceP in van Gelderen's system).

[11] Cf. also van Kemenade (2009), who argues that the Old English word order system (that, according to van Kemenade, was a system of Information Structure-based ordering of constituents) disappeared when the type of Old English demonstratives was lost in Middle English.

[12] These fulfilled the functions of both definite article and demonstrative adjective.

[13] In the earliest Middle English texts one can still find inflected forms of the definite article (mainly the Old English plural form): in the 13th century, *the* is the rule in most dialects.

2b. Middle English nouns (one inflection class for all)

	Early Middle English		Late Middle English	
	singular	plural	singular	plural
nominative	*ston*	*stones*	*stoon*	*Ston(e)s*
accusative	*ston*	*stones*	*stoon*	*Ston(e)s*
genitive	*stones*	*stonen/es*	*stoon*	*Ston(e)s*
dative	*stone*	*stones/es*	*stoon*	*Ston(e)s*

We have argued elsewhere (Lavidas 2009) that the reason VSO orders are not lost (but are infrequent) in Middle English (when the loss of the case distinctions occurred) is that another change happened during this period: the change of Northern Middle English to a CP-V2 language. Kroch & Taylor (1997) have shown that while the Verb in Old English V2 clauses surfaces in the Infl(ection) (T, in our terms) position (Old English was not a CP-V2 language),[14] the northern dialect of Middle English (before other English dialects), due to its extensive contact with Medieval Scandinavian, developed first the verb-movement syntax of a CP-V2 language.

The question that arises now is how CP-V2 and VSO depending on CP-V2 disappeared. According to Westergaard (2005a, 2010), the loss of V2 is due to Information Structure Drift, which is connected to the tendency of subjects to be given information: a word order that is linked to informationally given subjects is more frequent in language use than a word order that is linked to discourse-new subjects, and, for this reason, the word order that is linked to discourse-new subjects is vulnerable to change.[15] In Westergaard's view, the Information Structure Drift in English is a factor contributing to an increase in non-V2 word order caused by the tendency of subjects to convey given information. Westergaard (2005a, b) has shown that, as a mixed grammar (for example, V2/non-V2 variation) spreads, the word order linked to informationally given subjects (for English, non-V2) should naturally increase because subjects generally tend to be given information. Westergaard assumes that two subject and object positions are distinguished by information structure:[16] the higher one is used for given information (typically *pronouns*) and the lower for new information (typically *full DPs*). Information Structure Drift has to do with the input for language acquisition: Westergaard (2010) shows that whereas approximately 90% of all subjects are pronouns in the input to children, the situation is reversed for objects, which are pronouns only approximately 20% to 35% of the time. This infrequency has implications for language change because cues (or micro-cues) that are extremely infrequent in child-directed speech are vulnerable to change.[17]

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[14] See above ("...Old English what is referred to as an IP-V2 (or TP-V2) language (like Modern Yiddish and Modern Icelandic, in contrast with languages like Modern German or Modern Dutch where the verb moves to C"), and fn. 8.

[15] One of the aims of this article is to test the hypothesis that Information Structure Drift is a principle that can trigger language change (in word order) and determine the path of this change. Of course, drift here is not considered an inevitable development; cf. Westergaard (2010: 111 [our emphasis]): "The effect that information structure may have over an extended period of time has been referred to as Information Structure Drift (Westergaard 2005). It is important to note, however, that *this is not considered to be an inevitable development* once it has been initiated, as in a common definition of 'drift' in studies of historical language development. In the present model, where language acquisition and language change are closely interrelated, *such drift*, which often spans several hundred years, *is impossible*, simply because children are only exposed to one stage of the development and obviously have no information about previous stages."

[16] Van Kemenade et al. (2008) have also shown the existence of two subject positions in embedded clauses in Old English. These two positions are again distinguished by information structure: the high position is filled by pronominal and salient nominal subjects and the low position by non-salient nominal subjects.

[17] For a discussion on cues and micro-cues, cf. Lightfoot (1999, 2006), Lightfoot & Westergaard (2007), Westergaard (2008), and paragraph 3 below. Cf. also Westergaard (2010: 109-110 [our emphasis]): "[…] micro-cues may specify the clause type that the cue is relevant in (e.g. V2 in questions in English but not in declaratives), minor classes of categories that it may apply to (e.g. verb movement applying to auxiliaries in

Bech (2001) and Westergaard (2005a) have argued that in Old English the non-V2 word order was preferred if the subject was given (often a pronoun), and the V2 word order was preferred if the subject was new information.[18] The loss of the V2 word order in declarative sentences during the Middle English period is interpreted by Westergaard (2005a, 2010) as evidence that the subject position that survives is the one that is preferred for given subjects. With respect to the development from OV to VO in English, because pronominal objects were strongly preferred in OV constructions,[19] Westergaard analyses the loss of OV in English as an instance of the tendency of the low object position (the one closely linked to new elements) to survive through the particular word order preferences in acquisition input (see Table 12 and relevant discussion below).

To summarize, it appears that the presence of nominal (case) inflections in Old English suffices to provide VSO orders (with V in T and both S and O in d_V), while its loss in Middle English blocks VSO under the same derivation. However, VSO still surfaces in Middle English due to the V2-pattern that has V in C. The loss of V2 and VSO results from Information Structure Drift, which relates to the language acquisition input (subjects became preverbal as the typical given information and objects postverbal as the most typical new information).[20] The question that may arise is why these "stable" tendencies/preferences in the input of mixed grammars caused a word order change at a specific period (and not earlier). Our hypothesis is that the answer can be derived from an analysis of Information Structure Drift –Information Structure Drift affects mixed (SV/VS and/or VO/OV) languages– and perhaps from a correlation between D-system and pro-drop and the blocking of Information Structure Drift (see the Greek data below). Westergaard (2007) suggests that throughout a period when a mixed grammar exists there are certain preferences that must be subject to information structure: pronominal objects appear in OV constructions, while heavy DPs are preferred in VO constructions. Westergaard relates these preferences to her claim that the patterns of information structure in typical conversational language or child-directed speech are important for language change.[21] According to Westergaard, with respect to constructions that allow mixed word orders dependent on the information structure, the word orders with given subjects and new objects are more frequent. Hence, whenever we have a mixed

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English but not lexical verbs), or *patterns of information structure that are relevant* […] structures with an extremely low input frequency may be ignored by children in the acquisition process and disappear from the I-language grammar of the next generation."

[18] Westergaard (2010) also gives an example of a language with freer word order than English: present-day Russian allows both OV and VO, and pronominal objects virtually always appear in OV constructions.

[19] We should note that, while object pronouns do indeed usually precede the verb in Old English, DP objects are approximately 50% before and 50% after, on average.

[20] Regarding the relationship between the Information Structure Drift and the Generative Grammar theory (and the position of this notion in this particular theory of language), we would include the Information Structure Drift in the "third factor" principles in terms of Chomsky (for theory of language) and van Gelderen (for language change). Van Gelderen considers Economy principles, for example, as one of the basic reasons (principles) for language change and "language change as an area to see 'third factors' at work". Parameters such as the Information Structure Drift can be analyzed to play a role similar to Economy principles (see, among other studies, van Gelderen 2008a, b) and can be regarded as related to the third factor. Cf. van Gelderen (2008b: 299): "Chomsky (2004; 2007) argues that we need to attribute as little as possible to UG and instead rely as much as possible on principles not specific to the faculty of language, i.e. 'third factor principles'. Many Economy Principles, (36) ['Feature Economy: Minimize the semantic and interpretable features in the derivation included'] included, fall into this latter category in that they reduce the computational burden."

[21] Westergaard bases her claim that there is a preference for given (preverbal) subjects and new (postverbal) objects in mixed languages on six cases of word order change in mixed languages: in all (unrelated and from different periods) cases, the position related to the given object or the new subject is lost. In three cases, the low object position (VO) survives (loss of OV in English, Norwegian, and Icelandic), and in three cases the high subject position survives (loss of V2 in declaratives in the history of English and in wh-questions in Modern Norwegian dialects and of the low subject position in embedded clauses in the history of English).

grammar, the preferences (in adult language and input) will be for given/preverbal subjects (and/or new/postverbal objects), with the result of an expected change (in favour of SV and/or VO) in word order.

2.2.2. Stability of VSO; Greek
Modern Greek allows all six possible word orders and can manifest VSO (even without focusing or topicalization):

(4)   *dhiorthose   o   Janis   ti   vlavi*
      repaired.3SG   the.NOM   Janis.NOM   the.ACC   damage.ACC
      "Janis repaired the damage."

Modern Greek crucially differs from Middle English: Modern Greek exhibits a wider distribution of VSO order than Middle English, and VSO is more productive in Modern Greek because it does not depend on the movement of V-to-C and the presence of a topic or focus in the clause-initial position (Lavidas 2008).

All six possible word orders are available in Ancient Greek, while SOV is considered the basic order of Homeric Ancient Greek (cf., among others, Friedrich 1975):

Table 3. Homeric Ancient Greek[22]

SOV 28 (27.7%)	SVO 25 (24.8%)	OVS 28 (27.7%)	Total
OSV 18 (17.8%)	VOS 1 (1%)	VSO 1 (1%)	101 (100%)

SV and OV have been identified as the basic orders not only in Homeric and Classical Ancient Greek poetry but also in prose (Fraser 2002).[23] See Table 4, which is based on Fraser's numbers.[24]

Table 4. Distribution of word order (in main clauses) in Classical Ancient Greek[25]

SOV 34.2%	SVO 21.1%	OSV 16.7%
VSO 4.9%	VOS 4.9%	OVS 17.8%

Moreover, Taylor (1994) has argued that the Ancient Greek data reflect an ongoing change from verb-final (OV) to verb-medial (VO) orders beginning with or before Homer and nearing completion with Hellenistic Koine. A study, however, of Hellenistic Koine and subsequent periods (Medieval and Modern Greek) shows that the ongoing change did not end with Hellenistic Koine. On the other hand, this ongoing shift does not influence the presence of VSO orders, which are attested in Homeric, Classical and Koine Greek (see 5a-c).

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[22] From Friedrich (1975); sample from *Iliad* 1, 5, 9 and citations from grammars**.**

[23] Fraser's conclusion that the basic word orders in Ancient Greek were SV and OV holds both for poetry and prose. Cf. Fraser (2002: 94): "The comparable word order in hexameter, trimeter, and prose texts described above shows that metre is not a significant constraint on Greek word order".

[24] For the possibility of using poetry to check syntactic structures, see Theophanopoulou-Kontou (2011): "[...] in contrast to counter semantic/pragmatic lexical occurrences, constituent structure variations (unordered structures, elliptical/discontinuous constructions) conform to a great extent to general principles of the grammar (restrictions on movement, constituency, case/Θ-role assignment), an analysis within the generative model (Chomsky 1995, 2000ff) being thus applicable. The derivation of deviated constructions (cases of hyperbaton, of enjambment, unordered structures) is also supported through the extension of phrase structure (left periphery, Agreement and Θ-domains) already suggested in the literature (Rizzi 1997, Roussou 2000)".

[25] Based on Fraser (2002: 74); samples from *Oresteia*, *Medea* and *Crito*.

(5a) VSO in Homeric Greek (Taylor's example 16a)

gnôi	*dè*	*kaì*	*Atreídēs*	*eurù*	*kreíōn*
recognize	PTC	also	son-of-Atreus.NOM	wide.NOM	ruling.NOM

Agamémnōn	*hḕn*	*átēn*
Agamemnon.NOM	his.ACC	blindness.ACC

   "The son of Atreus, wide-ruling Agamemnon, may know his blindness." (Hom. Il. 1, 411)

(5b) VSO in Classical Greek (Taylor's example 16b)

ékhei	*dè*	*ho*	*móskhos*	*hoûtos*	*ho*	*âpis*
has	PTC	the.NOM	calf.NOM	this.NOM	the.NOM	Apis.NOM

kaleómenos	*sēmḗia*	*toiáde*
being-called.NOM	marks.ACC	the-following.ACC

   "This calf, which is called Apis, has the following marks." (Hdt. 3.28.3)

(5c) VSO in Hellenistic Koine

aposteleî	*ho*	*huiòs*	*toû*	*anthrṓpou*	*toùs*
sends	the.NOM	son.NOM	the.GEN	man.GEN	the.ACC

angélous	*autoû*
angels.ACC	his

   "The son of man is sending his angels." (Mt. 13, 41)

In examples (5a) and (5b), the second position particle (*dé*) is evidence of the movement of V to C and not to T. It should be noted that, according to Dik (1995), Ancient Greek sentences consist of two pragmatically preverbal slots (Topic [P1] and Focus [P0]), a predicate position (the default position for the verb) and a pragmatically unmarked postverbal part. Hence, Dik's analysis that all (including, of course, S and O) postverbal elements (unmarked for discourse-pragmatic values) are relegated to a postverbal position that is unordered is in accordance with the basis of our argumentation. Dik has also shown that the verb in Ancient Greek moves (when it is pragmatically marked) to the focus or the topic position, which means that, according to Dik, an Ancient Greek VSO order is:

TOPIC(empty) FOCUS(V) PREDICATE POSITION(empty) X/POSTVERBAL PART(S, O)

As Table 5 shows, there is an increase of postverbal subjects (VSX) from the Homeric to the Hellenistic Koine period (that does not hold for the XVS order, which is derived through the movement of V to C, a movement that is possible already in Homeric Ancient Greek).[26]

Table 5. Distribution of word order in Homer, Herodotus, and Luke[27]

	Homer (Homeric Greek)	Herodotus (Classical Greek)	Luke (Hellenistic Greek)
XVS	12% (13/109)	12% (16/134)	5% (5/102)
VSX (= VSO or VOS; with only full DPs)	7% (8/109)	15% (20/134)	25% (25/102)

According to the reinterpretation of Taylor's analysis (1994) proposed by Kiparsky (1996) and Condoravdi & Kiparsky (2001), in Homeric Greek no TP (or IP, according to Kiparsky 1996) is syntactically projected. The change to VO order studied by Taylor is analyzed by Kiparsky (1996) and Condoravdi & Kiparsky (2001) as the result of the rise of a functional T node that hosts the finite verb: Homeric Greek must lack a separate category T in the syntax

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[26] This increase of the frequency of postverbal subjects in Hellenistic Koine is significant. We will not, however, discuss this increase in detail because Taylor (1994) has a very successful analysis of this increase and because our aim is to search in another direction, that is the loss (in English but not in Greek) of the VSO orders. The data show that there is an obvious increase of this order but not a loss or a rise of this order.

[27] Based on Taylor (1994: 10).

so that the inflected verb in Homeric Greek thus belongs to the composite category VT. In post-Homeric Greek, T becomes a separate category (see 6 below). Because we do not agree on the possibility of the absence of the T category in Homeric Greek (for theoretical reasons that have to do with the syntactic approach we follow), we interpret this analysis (in a different syntactic approach) as evidence that V cannot appear in T in Homeric Greek, in contrast to the subsequent periods of Greek.

(6)   Kiparsky (1996):
       a. CP [VIP [clitic ...]]   (Homeric Greek)
       b. CP [IP [VP [clitic ...]]]   (Hellenistic Koine)

Moser's analysis (2008, 2009) of Homeric Greek supports the assumption that V in Homeric Greek, unlike in later stages of Greek, cannot be in T.[28] According to Moser, there are four types of evidence that show that the three Homeric Greek verb stems (Present, Aorist, Perfect) are neither tenses nor aspects but "lexical-ontological distinctions" linked to Aktionsart, i.e., the situation-type aspect (Homeric Greek Perfect is related to stativity, Aorist forms mainly denote achievements (punctual occurrences), and Present forms mostly express activities): (a) most verbs appear in Homeric Greek in forms based on only one of the three stems (only on the Present, Aorist, or Perfect); (b) Perfect forms are mainly intransitive verbs and often co-occur with Present forms with the same interpretation (see ex. 7); (c) similar to Perfect forms, Aorist forms have uses (such as in similes) that are absent from Classical Greek and correspond to Present forms; and (d) most Aorists lack the augments that mark past tense and that are indispensable in Classical Greek.

(7) *epeì*   *polù*   boúlomai   *autḕn*   *oíkoi*   *ékhein*
     because   much   want.PRS.1SG   she.ACC   house.DAT   have.INF
            kaì   *gár*   *rha*   *Klutaimnḗstrēs*   probéboula
            and   because   PTC   Klytemnestra.GEN   want.PF.1SG
     "...because I very much want to have her at home. For I prefer her to Klytemnestra."
     (Hom. Il. 1, 112-113, Moser's (2008) example 1)

On the other hand, it appears that no consequences of Information Structure Drift are observed in the history of Greek, namely, the consequences of the tendency of the subjects to be given information (mostly pronominal) and precede the Verb and of the objects to be new information (mostly full DPs) and follow the Verb. Our hypothesis is that the diachronic stability of pro-drop characteristics and of the morphological realization of nominal features in the nominal system (see Tables 6 and 7) seems to play a role in the apparent "blocking" of Information Structure Drift in Greek.[29] This argument is in accordance with Westergaard's

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[28] The augment (prefix *e-*) cannot be analyzed as a marker of temporal distinctions in Homeric Greek because it is not obligatorily present in the Aorist. Moser (2008) argues that "[in Homeric Greek] most Aorists do not have the augment signalling past tense", and Wackernagel (1926: 212) claims that in Homer unaugmented and augmented preterits are equivalent in function. Cf. also Drewitt (1912), Schewan (1912), Rosén (1973), Pagniello (2002). For example, *kaléssato* is an unaugmented form (aorist, 3rd singular, indicative, middle voice; *kaléō* 'call'): *têi dekátēi d' agorḕn dè* kaléssato *laòn Akhilleús* ("But on the tenth Achilles called the people to assembly", Hom. Il. 1, 54).

[29] In general, there is a consensus that all principles (and tendencies) of language change can be blocked. For the various possible types of blocking of principles, see also van Gelderen (who uses a different, but again generative, model of explanation). For her, principles of language change, Economy principles, for example, "can interact and be 'blocked' by language-internal rules or language-external prescriptive rules and a typically human wish for linguistic innovation". The explanation model of van Gelderen has different characteristics but also includes principles; furthermore, blocking parameters of language-internal and language-external type again exist. Hence, blocking the effect of a "drift" (as described by Westergaard), or of any tendency in one language

(2010: 111 [our emphasis]) remark that "[…] *external factors or the specific development of certain syntactic micro-cues* must have had a more powerful effect than Information Structure Drift, which in this paper is argued to be one factor (presumably among many) in diachronic language development".[30, 31]

Table 6. The D-system of Ancient (Classical) Greek
6a. Ancient Greek (definite) articles

	singular			plural		
	masculine	feminine	neuter	masculine	feminine	neuter
nominative	*Ho*	*hē*	*tó*	*hoi*	*hai*	*tá*
accusative	*Tón*	*tḗn*	*tó*	*toús*	*tás*	*tá*
Genitive	*Toû*	*tês*	*toû*	*tôn*	*tôn*	*tôn*
Dative	*Tôi*	*têi*	*tôi*	*toîs*	*taîs*	*toîs*

6b. Ancient Greek nouns (for example, the masculine first declension noun in -as, *tamias* 'treasurer')

	singular	plural
Nominative	*tamías*	*tamíai*
accusative	*tamían*	*tamías*
Genitive	*tamíou*	*tamíôn*
Dative	*tamíai*	*tamíais*

Table 7. The D-system of Modern Greek[32]
7a. Modern Greek (definite) articles

	singular			plural		
	masculine	feminine	neuter	masculine	feminine	neuter
nominative	*O*	*i*	*to*	*i*	*i*	*ta*
accusative	*Ton*	*tin*	*to*	*tus*	*tis*	*ta*
Genitive	*Tu*	*tis*	*tu*	*ton*	*ton*	*ton*

7b. Modern Greek nouns (for example, the masculine noun *tamias* 'treasurer, cashier')

	singular	plural
Nominative	*tamias*	*tamies*
accusative	*tamia*	*tamies*
Genitive	*tamia*	*tamion*

but not the other (or in one period but not in the other), appears to be possible in all relevant generative approaches and can be of various types. If the blocking was not possible, significant tendencies will result in the same changes in all periods and languages. Our hypothesis (based on theoretical reasons, the syntactic analysis of the relevant word order characteristics; cf. Roussou & Tsimpli 2006) is that case morphology can "block" language change in word order.

[30] An example of external factors is the following: "in some present-day Norwegian dialects, [...] pressure from the standard language seems to cause a return from non-V2 to V2" (Westergaard 2005b). The role (if any) of external factors in the development of word order in Greek (and English) is beyond the scope of the present paper and is left open for further research.

[31] It appears that there are various factors that can block a principle. This cannot restrict the explanatory power of the principle. See also fn. 25 and the relevant literature mentioned there. The blocking of a principle or of any tendency in one language but not the other can be of various types; if not, significant tendencies will result in the same change in all languages.

[32] Greek continues to morphologically realize nominal features in the nominal system in the periods that followed the Ancient Greek period (Hellenistic Koine, Medieval, Modern Greek), not without any changes, of course. Cf. Joseph (2001): "The nominal forms and categories given [...] for Ancient Greek are valid as well into the Koine period, though the dative case and all dual number forms begin to fall into disuse during that time, and are completely absent from colloquial Modern Greek. In addition, starting in the Koine period and continuing on into the Medieval period, most noun paradigms came to be restructured, with the basis for their organization becoming gender (masculine, feminine, and neuter) rather than the formal stem-classes (*i*-stem, consonant-stem, *o*-stem, etc.) of Ancient Greek."

Therefore, word order flexibility is also retained in Medieval Greek, as we can see from our research on the text of Digenes Akrites (cf. Jeffreys 1998):[33]

(8) Word order flexibility in Medieval Greek:[34]
(8a) VO
    evlepan   *tin*   *ehmalosian*
    saw.3PL   the.ACC   captivity.ACC
    "They saw the captivity." (Dig.E-0210)
(8b) OV
    leonda   *dhinon*   *idhasin*   *apeso*
    lion.ACC   terrible.ACC   saw.3PL   outside
    "They saw a terrible lion outside." (Dig.E-0786)
(8c) VOS
    idhen   *tutus*   *o*   *amiras*
    saw.3SG   them.ACC   the.NOM   commander.NOM
    "The commander saw them." (Dig.E-0132)
(8d) VSO
(i) *vlepi*   *olos*   *o*   *laos*   *tin*   *haran*
    see.3SG   all.NOM   the.NOM   people.NOM   the.ACC   happiness.ACC
    tutin   *olin*
    this.ACC   all.ACC
    "All the people see all this happiness." (Dig.E-0208)
(ii) *idhan*   *i*   *ofthalmi*   *mu tin*   *panimniton*   *Theotokon*
    saw.3PL   the.NOM   eyes.NOM   my the.ACC   much-praised.ACC   Theotokos.ACC
    "My eyes saw the much praised Theotokos." (Dig.E-0549)
(iii) *idhasi*   *ghar*   *ta*   *omatia*   *mu*   *ta*   *dhakria*
    saw.3PL   because   the.NOM   eyes.NOM   my   the.ACC   tears.ACC
    tis   *mitros*   *mu*
    the.GEN   mother   my
    "As my eyes saw the tears of my mother." (Dig.E-0376)

Table 8a. Distribution of word order in a sample (100-1198, Escorial version) from the text "Digenes Akrites" (Early Medieval Greek)

VSO 12.6% (16)	SOV 30.8% (39)	SVO 22.1% (28)	Total 100% (127)
OVS 22.1% (28)	VOS 8.7% (11)	OSV 4% (5)	

Table 8b. Distribution of word order in a sample (B, 1-1860) from the text "Erotokritos" (Late Medieval Greek)

VSO 8.7% (9)	SOV 48.6% (50)	SVO 20.4% (21)	Total 100% (103)
OVS 11.7% (11)	VOS 7.8% (8)	OSV 2.9% (3)	

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[33] Because Fraser mainly uses poetry, we have decided to compare Fraser's conclusions with data from Medieval Greek poetic texts. Cf. Fraser (2002: 52): "Word order patterns are considered in terms of morphology and prosody as well as syntax. As prosodic structure is especially visible in verse, the paper undertakes a study of word order in a corpus of poetic texts, and the results are compared with two prose texts, and with earlier studies of prose order". See also Theophanopoulou-Kontou (2011) on the syntax of poetic texts.
[34] In all examples, the same lexical item ("see") is used to show that the different word orders do not depend on the lexical semantics of the verb.

Tables 8a and 8b show that all six possible word orders are attested. From the above observed diachronic tendencies we can conclude the following with respect to (i) VSO derivation and (ii) the relationship between VSO order and other changes in the clause structure (cf. Table 9): (a) word order flexibility and VSO order are attested when a change/transition from OV to VO (as in Greek, Old and Middle English) or V2 to non-V2 (as in Old and Middle English) is in progress (in other words, in mixed grammars); (b) if a language has VSO (in d$_V$), then it also has null or null-expletive subjects (but not vice versa),[35] as attested in the examples of Old English, Classical Greek, and Modern Greek; (c) the relation of the VSO order to the D-system and to the presence of V in T is confirmed: VSO order (S and O in domain V) is allowed when DPs inflect for case and V can appear in T (Old vs. Middle English).

Table 9. General picture of the correlated parameters

	Old English	Middle English	Modern English
null subject parameter	expletive pro-drop	expletive pro-drop	non-pro-drop
D-system	DPs inflect for case	DPs do not inflect for case	DPs do not inflect for case
OV/VO and V2/non-V2 alternation	OV / VO, TP-V2 / non-TP-V2	CP-V2 (Northern Middle English)	VO, no V2
VSO	VSO	VSO	*VSO

	Ancient Greek	Medieval Greek	Modern Greek
null subject parameter	pro-drop	pro-drop	pro-drop
D- and T-system	DPs inflect for case; no V in T (Homeric); V in T (Classical)	DPs inflect for case; V in T	DPs inflect for case; V in T
OV/VO and V2/non-V2 alternation	OV / VO	OV / VO	OV / VO
VSO	VSO	VSO	VSO

3. Implications for the cue-based approach of language change

Following Lightfoot's (1999, 2006) cue-based approach to language acquisition and change, we will attempt to reveal the role of language acquisition in the previously observed tendencies in word order diachrony. According to Lightfoot, children scan the Primary Linguistic Data (PLD) for designated cues that are the result of certain triggers in the input. Language change occurs when a statistical shift in the input causes the frequency of a trigger

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[35] There seems to be a correlation between VSO with S and O in d$_V$ and the parameter of pro-drop in accordance with Rizzi's (1982) hypothesis about a correlation between the pro-drop parameter and VSO orders. Rizzi linked pro-drop to VSO but without focusing on the two possible derivations of VSO [V in T or V in C]. In Table (9), we refer to the availability of expletive pro-drop (expletive pro-drop is not so frequent in Middle English), but we leave the role of the frequency of expletive pro-drop open to further research (see above, fn. 8 and Haugland (2007: 59-65) for an overview and some examples). With regard to Middle English expletives, cf. Hulk & van Kemenade (1995: 246-247): "Given our theory, we expect the development concerning verb second to go hand-in-hand with the development concerning expletive pro-drop. Our data show that we find expletive pro-drop until the early 15th century; this is borne out by such data studies as van der Gaaf (1904) and Elmer (1981); some ME data are given in (39):

(39)   a. *þenne   scheomeþ   me (Obj)   þerwiþ*
           then   shames   me   with-that
           'Then I am ashamed of that.' (St. Marh. 34, 30)

        b. *him (Obj)   wile   sone   longe   þarafter*
           him   will   soon   long   after-that
           'He will soon long for that.' (Trin. 148,19)"

to fall below the critical level for acquisition. Hence, the cue-based approach (a variant of the Principles and Parameters approach to language variation and acquisition) distinguishes External Language (E-Language, the utterances that a child hears) from Internal Languages (I-Languages or Grammars, the systems that are the result of exposure to input; Lightfoot & Westergaard 2007). The child develops her/his I-Language in response to structures that are heard in E-Language; these structures are the cues designated and "are expressed in sentences that a child hears, which can only be analyzed, given everything else the child knows, if a particular cue is utilized" (Lightfoot & Westergaard 2007). The structures or cues are the parameters of change, but children do not evaluate Grammars with regard to sentences: children interpret the E-Language through the structures provided by UG (Lightfoot 2006: Chapter 4). Consequently, language change occurs if/when E-Language expresses cues in a different way, and this change results in the emergence of new I-Languages in children. The cues for VSO availability that could be proposed are (a) $_{transitive}$V in C[36] and (b) V in T and argument DPs with different features depending on their grammatical (subject/object) function. With regard to these two cues, two facts about child Greek seem to be very indicative for the diachrony of word order: Greek children pass through a stage during which T-related projections are not activated (cf. Table 10a).[37] Tables 10a to 10e show that the VS order is attested from the beginning (pro-drop is also attested very early), whereas the VSO order is attested only after verbal (V in T) and nominal (case) inflection are acquired.[38]

Table 10a. "Non-finite"[39] verb types in child Greek[40]

	Spiros 1;9 (stage I)	Jana 1;11 (stage I)	Jana 2;5 (stage II)	Meri 1;9 (stage II)
"non-finite" types	76% (96)	51% (45)	35% (62)	38% (50)
other types	24% (31)	49% (43)	65% (116)	62% (83)
Total	(127)	(88)	(178)	(133)

Table 10b. Subject drop in child Greek[41]

	Spiros 1;9 (stage I)	Jana 1;11 (stage I)	Jana 2;5 and 2;9 (stage II)	Meri 1;9 and 2;3 (stage II)
subject drop	79.9% (72/90)	87.14% (61/81)	77.86% (210/271)	84.94% (351/413)

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[36] This VSO cue is similar to part of the V2 cue.

    Cue for V2 syntax: $_{CP}$ [XP $_C$ V...] (Lightfoot 2006: 86).

[37] Cf. Varlokosta et al. (1998), and Varlokosta (2005). Tsimpli (2005: 181) agrees that "irrespective of the analysis, it appears that Greek children in early stages of linguistic development produce forms which are not appropriately marked for tense and agreement features". Greek children appear to acquire nominal inflection relatively late as well (Table 10c).

[38] The remarks on the acquisition data in this section have a very specific role –and, of course, it is obvious that we do *not* try to link modern data with an early change. Acquisition data can reveal the process of acquisition of aspects of Information Structure that are important for the relevant changes (we follow Westergaard's methodology of study of the relation between language acquisition and change). The discussion of the acquisition data is related to the Information Structure Drift. The hypothesis is that the Information Structure Drift (when not "blocked") is connected with language acquisition (as language change is related to language acquisition in a cue-based acquisition way). See Westergaard (2010: 110 [our emphasis]): "In this connection, *the patterns of information structure in typical conversational language or child-directed speech are important.* As we saw in the previous section, the predominance of informationally given subjects and informationally new objects should be robust in children's input."

[39] Greek-speaking children in stage I use dependent (perfective non-past) verb forms ("non-finite" according to Varlokosta et al. 1998).

[40] From Varlokosta et al. (1998: Table 5).

[41] From Lavidas (2001: Table 4).

Table 10c. Definite articles in child Greek[42]

Definite articles (in obligatory contexts)								
Spiros 1;9 (stage I)	Jana 1;11 (stage II)	Jana 2;5 (stage III)	Jana 2;9 (stage III)	Meri 1;9 (stage II)	Meri 2;3 (stage III)	Meri 2;9 (stage III)	Maria 2;3 (stage II)	Maria 2;9 (stage III) [43]
23%	15%	93%	97%	77%	88%	91%	67%	93%

Table 10d. Word order in child Greek[44]

Alexia	SVO	VSO	OVS	VOS
1;11	1	0	13	3
2;0	1	0	7	4
2;1	1	2	9	5
2;2	9	5	10	8

Table 10e. Word order in child Greek[45]

Elli	SVO	VSO	OVS	VOS
1;9	1	0	1	1
1;10	4	0	4	10
1;11	2	0	3	2
2;0	8	1	6	16
2;1	13	8	2	17

In child Greek, the peripheral positions associated with Focus and Questions (C domain) are acquired before the inflectional domain (Tsimpli 2005). The inflectional domain develops in the second stage, that is verbal and nominal morphology, and the first derivation of the VSO order develop almost simultaneously.

On the other hand, Tables 11a to 11d show that early child English manifests pro-drop, SVO, VO, and OV but not VSO.

Table 11a. Subject drop in child English[46]

	Adam 2;5 (stage I)	Eve 1;6 (stage I)	Adam 3;0 (stage II)	Eve 2;1 (stage II)
subject drop	55%	39%	29%	15%

Table 11b. Word order in child English[47]

Emergence of word orders	Eva	Christy
SV	1;4	1;5
VO	1;4	1;5
VS	1;6	1;5
OV	1;7	1;6
SVO	1;7	1;9

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[42] From Marinis (2002: Table 2). Cf. Roussou & Tsimpli (2006: 323): "The contrast between nominative and accusative case in Greek is expressed primarily through the definite article".

[43] The stages here refer to the stages in the acquisition of the DP (Marinis 2002: 175).

[44] From Tsimpli (2005: Table 10). Tables (10a-e) (and 11 below) have data from different children. Of course, individual differences may cause problems in an attempt to generalize. On the other hand, our only goal here is to provide evidence –following the methodology of Westergaard (2007)– that the VS order in the Greek child language is attested from the beginning (first stages) of acquisition (pro-drop is also attested very early), while VSO is attested only after verbal (V in T) and nominal (case) inflection are acquired (and that [see Tables in (11) below] early child English manifests pro-drop, SVO, VO, and OV, but not VSO).

[45] From Tsimpli (2005: Table 10).

[46] From Hyams & Wexler (1993: 426, Table 1).

[47] From Bowerman (1990: Figures 5, 6).

Table 11c. Some word order "errors" in child English (= non-target Modern English-like word orders)[48]

order	child	age
OV	Gia	1;7
OV	Kendall	1;10
OV	Susan	1;10
OV	Adam	2;3
VS	Kendall	1;10
OVS	Kendall	1;10

Table 11d. Word order in child English[49]

Number of utterances	Adam 2;3	Valian 1;10
SVO	38	40
VO	108	12
OV	5	2

What we conclude is that only when and if children receive cues for argument DPs that inflect for case and for V in T will they derive a grammar with both derivations of VSO order. [50, 51] On the other hand, if children receive only one of these two cues, only one of the VSO derivations is possible: in other words, if children do not receive the V in T cue, they will not derive VSO orders with V in T but only with V in C (as in Homeric Greek), and if children do not receive the cue for the morphological realization of nominal features in the nominal system (subject and object DPs that spell out different features depending on their grammatical function), they will not derive VSO orders with S and O in the same domain (as in Middle English).[52]

As far as the input that children receive is concerned, Westergaard argues that in English child-directed speech, subjects are predominantly given information (pronouns) and objects new (full DPs), and these frequencies in the input may cause children to develop a default grammar with SV and VO (and, according to Westergaard, with only one subject or object position) (Table 12).

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[48] From Powers (2000: 95, Table 2).

[49] From Koizumi (2002: 69, Table 27).

[50] As discussed above, following Lightfoot's (1999, 2006) cue-based approach to language acquisition and change, children scan the PLD for designated cues that are the result of certain triggers in the input. Language change happens when a statistical shift in the input causes the frequency of a trigger to fall below the critical level for acquisition (see the discussion above). The cues for VSO availability we proposed above are (a)$_{transitive}$V in C and (b) V in T and argument DPs with different features depending on their grammatical (subject/object) function. The triggers for the above cues are probably (a) the position of V before S and O and (b) the verbal endings (forms) that express tense and different morphological cases (nominative/accusative) of DPs.

[51] VSO orders with V in C are attested earlier. Cf. Tsimpli (2005): "In Elli's VSO data, examples [...] involve sentences introduced with the mood marker *na*. In these cases it can be argued that the verb moves and head-adjoins to Mood [...] given that subjects and objects cannot appear between this marker and the verb (but object clitics can)".

[52] It should be noted that children mainly refer to the "here and now" and also have more limited world knowledge, with the result that they make more use of grammatical than pragmatic properties (Tsimpli 2006). In our view, "children's sensitivity" to pragmatically based properties has to do with the input they receive. Westergaard argues that, in English child-directed speech, subjects are predominantly given information (pronouns) and objects new (full DPs), and these frequencies/preferences may play a role in the development of default Grammars with SV and VO (in the case of a mixed language). Therefore, we will follow the model of Westergaard and try to give an overview of adult word orders (below) in Greek corpora as well. Hence, our opinion is that if, according to Westergaard and Lightfoot, frequency may affect decisions with respect to cues, pragmatically based (in this aspect) adult Grammars can affect grammatically based child Grammars.

Table 12. Realization of subjects and objects in a sample of English child-directed speech[53]

	pronouns	DPs/clauses	*it/there*	*that*	other	total
subjects	193 (65.4%)	35 (11.9%)	18 (6.1%)	46 (15.6%)	3 (1%)	295 (100%)
objects	8 (6.2%)	96 (73.8%)	14 (10.8%)	10 (7.7%)	2 (1.5%)	130 (100%)

On this basis, we will try to compare the above remarks on English child-directed speech (input for children acquiring English) with evidence about the input (adult speech) in Greek. Because, of course, we do not have a collection of data of Ancient Greek child-directed speech, we are going to use Ancient Greek texts.[54] In Tables 13a to 13b, we provide an overview of the realization of subjects and objects in a sample from the beginning of Plato's *Gorgias* and Aristophanes' *Clouds*.[55]

Table 13a. Realization of subjects in a sample of Classical Ancient Greek speech (Aristophanes, *Clouds*, 1-400, and Plato, *Gorgias*, 447a-452b)

	null subjects			personal pronouns			DPs		
	Arist.	Plato	*Total*	Arist.	Plato	*Total*	Arist.	Plato	*Total*
subjects	285 (71.5%)	138 (62.5%)	423 (68.1%)	43 (11%)	18 (8.4%)	61 (10.2%)	69 (17.5%)	64 (29.1%)	133 (21.7%)
pre-V	-	-	-	32 (8%)	16 (7.4%)	48 (7.9%)	48 (12.1%)	38 (17.3%)	86 (14%)
post-V	-	-	-	11 (3%)	2 (1%)	13 (2.3%)	21 (5.4%)	26 (11.8%)	47 (7.7%)

all subjects (100%)		
Arist.	Plato	*Total*
397	220	617

Table 13b. Realization of objects in a sample of Classical Ancient Greek speech (Aristophanes, *Clouds*, 1-400, and Plato, *Gorgias*, 447a-452b)

	personal pronouns						DPs		
	weak pronouns			strong pronouns					
	Arist.	Plato	*Total*	Arist.	Plato	*Total*	Arist.	Plato	*Total*
objects	21 (12.2%)	5 (9.8%)	26 (11.6%)	30 (17.5%)	15 (29.4%)	45 (20.2%)	121 (70.3%)	31 (60.8%)	152 (68.2%)
pre-V	12 (7%)	4 (7.8%)	16 (7.1%)	22 (12.9%)	10 (19.6%)	32 (14.4%)	66 (38.4%)	23 (45.1%)	89 (40%)
post-V	9 (5.2%)	1 (2%)	10 (4.5%)	8 (4.6%)	5 (9.8%)	13 (5.8%)	55 (31.9%)	8 (15.7%)	63 (28.2%)

all objects (100%)		
Arist.	Plato	*Total*
172	51	223

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[53] Mother in file Adam.10. From Westergaard (2010: Table 4).

[54] It is obvious that in the absence of evidence on the actual input for language acquisition of Ancient Greek, the corresponding input can only be that provided by texts (we admit that it is extremely difficult to compare the input for acquisition of an ancient language with the input for acquisition of a modern language). The data we have decided to present here are from the beginnings of Aristophanes' *Clouds* and Plato's *Gorgias* because, as argued by Willi (2010: 306), the beginnings of these works represent the macro-genre (or an approximation) of casual conversation. Of course, our data do not constitute the child-directed input, but they can provide some evidence on tendencies in the adult E-Language of the specific periods.

[55] TLG: *Thesaurus Linguae Graecae*. University of California, Irvine (http://www. tlg.uci.edu/).

It is worth noting that, in the above examples, when the null subjects are not counted, the result of the comparison between the realization of the subjects and objects is different from the relevant result in English; that is, the situation does not seem to be reversed for subjects and objects in Ancient Greek. The availability of pro-drop has an effect on the input, which, in turn, results in the availability of the constant presence of both positions (according to Westergaard's analysis of information structure) for subjects and objects (with the consequence that both SV/VS and VO/OV are available).

Table 13a´. DP or pronoun as subject

	pronouns	DPs
subjects	61 (10.2%)	133 (21.7%)

Table 13b´. DP or pronoun as object

	pronouns	DPs
objects	26 (weak) + 45 (strong) (31.8%)	152 (68.2%)

If, however, we count the null subjects together with the pronouns (as null subjects are an option for a sentence with a given implied subject),[56] then the result is similar to that of Modern English: the realization of subjects and objects is reversed, and it seems there is a preference for given subjects and new objects.

Table 13a´´. Null Subj. + pronoun or DP as subject

	null subjects + pronouns	DPs
subjects	423 + 61 (78.3%)	133 (21.7%)

Tables 14a to 14b´ give an overview of the production of adults in the Stephany corpus from the CHILDES database (MacWhinney 2000, Stephany 1997), the mothers in files mai27b4 (age of child 2;3.18), mai33c4 (age of child 2;9.15), and spi21a2 (age of child 1;9.11).

Table 14a. Realization of subjects in a sample of Greek child-directed speech[57]

	null subjects				personal pronouns			
	mai27b4	mai33c4	spi21a2	*Total*	mai27b4	mai33c4	spi21a2	*Total*
subj	300 (69.3%)	171 (77.7%)	79 (70.5%)	550 (71.9%)	55 (12.7%)	20 (9.1%)	23 (20.5%)	98 (12.8%)
pre-V	-	-	-	-	22 (5.1%)	9 (4.1%)	8 (7.1%)	39 (5.1%)
post-V	-	-	-	-	33 (7.6%)	11 (5%)	15 (13.4%)	59 (7.7%)

	DPs				other
	mai27b4	mai33c4	spi21a2	*Total*	*Total*
subj	72 (16.6%)	29 (13.2%)	10 (8.9%)	111 (14.5%)	6
pre-V	23 (5.3%)	2 (0.9%)	1 (0.9%)	26 (3.4%)	-
post-V	49 (11.3%)	27 (12.3%)	9 (8%)	85 (11.1%)	-

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[56] Following Greenfield & Smith (1976), Hyams (1986), and Hyams & Wexler (1993), we assume that an argument can be omitted if it is easily inferred and that, typically, such arguments are given. According to this claim, children, for example, omit arguments that are most easily recoverable, and, because subjects are often given information, they omit them.

[57] In Tables 14a and b: Mothers in files mai27b4, mai33c4, and spi21a2; CHILDES, corpus Stephany.

total (100%)			
mai27b4	mai33c4	spi21a2	*Total*
433	220	112	765

Table 14b. Realization of objects in a sample of Greek child-directed speech

	personal pronouns							
	weak pronouns				strong pronouns			
	mai27b4	mai33c4	spi21a2	*Total*	mai27b4	mai33c4	spi21a2	*Total*
obj	109 (66.5%)	106 (72.6%)	26 (61.9%)	241 (68.5%)	6 (3.7%)	2 (1.4%)	1 (2.4%)	9 (2.6%)
pre-V	103 (62.8%)	98 (67.1%)	22 (52.4%)	223 (63.4%)	0	0	0	0
post-V	6 (3.7%)	8 (5.5%)	4 (9.5%)	18 (5.1%)	6 (3.7%)	2 (1.4%)	1 (2.4%)	9 (2.6%)

	DPs				other
	mai27b4	mai33c4	spi21a2	*Total*	*Total*
obj	48 (29.3%)	33 (22.6%)	13 (31%)	94 (29.5%)	-
pre-V	3 (1.8%)	2 (1.4%)	4 (9.5%)	9 (2.6%)	-
post-V	45 (27.4%)	31 (21.2%)	9 (21.4%)	95 (26.9%)	-

total (100%)			
mai27b4	mai33c4	spi21a2	*Total*
164	146	42	352

From these Tables, it is clear that the input children acquiring Modern Greek receive does not include a reversed situation regarding explicit subjects and objects (similar to Ancient Greek data). Only if we take null subjects and pronouns together as examples of given subjects is the situation similar to Modern English data, and a very strong tendency for given subjects is revealed.

Table 14a´. DP or pronoun as subject

	pronouns	DPs
subjects	92 (12.8%)	111 (14.5%)

Table 14a´´. Null Subj. + pronoun or DP as subject

	null subjects + pronouns	DPs
subjects	550 + 98 (84.7%)	111 (14.5%)

Table 14b´. DP or pronoun as object

	pronouns	DPs
objects	241 (strong) + 9 (weak) (71.1%)	94 (29.5%)

On the other hand, one observes a strong preference for preverbal direct objects in the Modern Greek sample (in contrast to the Ancient Greek sample). This preference has to do with the presence of weak pronouns (clitics) that are obligatorily in a preverbal position in Standard

Modern Greek.[58] Obviously, this characteristic (a strong preference for the realization of objects as preverbal weak pronouns) has important consequences for the input Greek children receive, especially the stability observed in the history of Greek regarding the OV order.

Table 15 presents the two main findings of the comparison: (a) In Modern English child-directed speech, a reversed situation for subjects and objects is evidenced; in both Ancient and Modern Greek that reversed situation does not hold (and is only revealed if we count pronouns and null subjects together). This result means that the input children acquiring Greek receive does not contain a contrast or preference regarding the two positions of subjects and objects ([high and low position of subjects and objects, according to the analysis by Westergaard] that could result in the dominance of SV and the loss of VS). (b) On the other hand, the presence of preverbal weak pronouns has an important consequence for the Greek input: weak pronouns (object clitics) seem to change the situation observed in Ancient Greek and to cause a preference for pronouns and given direct objects (as observed in Modern Greek data). This tendency (for objects realized as pronouns) reveals a significant difference between Ancient and Modern Greek data and is in the opposite direction to that of general Information Structure Drift (which could result in a continuation of the OV/VO variation).

Table 15. Comparison of the realization of subjects/objects in samples of Modern English child-directed speech, Ancient Greek texts, and Modern Greek child-directed speech

	subjects		objects	
	pronouns	DPs/clauses	pronouns	DPs/clauses
Modern English	65.4%	11.9%	6.2%	73.8%
Ancient Greek	10.2% + null subj. 78.3%	21.7%	31.8%	68.2%
Modern Greek	12.8% + null subj. 84.7%	14.5%	71.1%	29.5%

4. Conclusions

We have argued that postverbal subject positions and flexibility in word order are attested if flexibility with regard to the characteristics of OV/VO and/or V2/non-V2 (mixed grammars) is the case. We stated the hypothesis that there is a diachronic (and not only synchronic) relation between the VSO order and (a) the D-system and (b) the V in T option: the VSO order (with S and O in the same domain) is allowed when DPs inflect for case and V can appear in the T position. The stability in the history of Greek regarding the six possible word orders in contrast to the word order instability in the history of English can be interpreted as the result of a "blocking" of Information Structure Drift by stability in pro-drop and D-system characteristics. The differences in the frequency of postverbal subjects in Greek are not related to the D-system or V2 phenomena but to the availability of the V in T position.

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[58] The development of the weak pronouns in the history of Greek can be described as follows. In Ancient Greek, the position of the weak pronouns is dependent on first position, preferential, and focused constituents. In Hellenistic Koine, postverbal placement is the preferred order (Janse 1993, 2000). In Medieval Greek, the weak pronoun object becomes part of the verb phrase (Mackridge 1993: 339). The tendency toward placement on the left of the verb becomes the only possibility with finite verbs in Standard Modern Greek (Joseph 1990: 129).

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