Constituent order and syntactic change in the history of Greek*

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Abstract

This paper discusses developments in constituent order and in the position of the dative argument in different classes of verbs. On the basis of data examined, the paper shows that VO/OV order and Exp-Th/Th-Exp evolution facts did not necessarily parallel each other. I argue that impersonal, monotransitive and ditransitive types of verbs show different behaviour regarding the position of their dative complement and claim that this can be attributed to a combination of factors, like animacy and grammatical relations. Furthermore, in this paper I provide new data and I discuss the extent to which the different status of dative constituents (DPs *vs* pronouns, animate *vs* inanimate) plays a role in the differences in constituent order in the sentence.

Keywords: Case, dative, word order, animacy, pronouns

1. Introduction

This paper is an investigation into the relationship between constituent order and syntactic changes that took place in the evolution of Greek. The central issue relates to extensive alterations in the case system, and in particular to the fact that morphological dative was gradually substituted from the paradigm. The period that is of interest here extends mainly from the Hellenistic until the late Byzantine era of Greek (roughly 4th century BC-14th century AD).

Several important earlier studies deal with the issue of the substitution of dative in Greek, including historical grammars (Goodwin 1881; Jannaris 1897; Smyth 1920; Gignac 1981, among others) and other works (for instance, Humbert 1930; Merlier 1930; Catsimali 1990). Firstly, historical grammars treat the phenomenon mainly by providing an extensive description and many examples but case evolution facts are not examined within a syntactic theory in which morphological changes can be related to syntactic alterations. In fact, little attention is paid to whether cited examples can have further implications when differentiating between the texts or the periods that these examples are found. Other works approach the phenomena from a more theoretical point of view but without the adequate detail in relating and explaining the loss of dative case marking to structural changes in the system of the language. It is also interesting to note that the above works either focus on specific constructions/contexts or just express a hypothesis that still remains to be verified. Furthermore, to the best of my knowledge there is no strong statistical evidence provided in order to support the

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claims made in the literature. But this question is important for anyone aiming to establish that change in the frequencies of certain constructions in different periods signified also greater changes in the system of Greek.

For the above reasons, in this study I have attempted to present the results of my investigation into the question of whether the loss of case marking can be related to changes that happened in the structure of sentences and in word order[1]. My primary aim is to report interesting facts discovered in the course of my study and draw conclusions or put forward hypotheses to account for these facts. Statistical evidence will also be provided in support of the claims, although for certain periods we have to acknowledge that instances are by necessity slim[2]. A secondary aim relates to the need of framing the synchronic analyses in terms of the more recent versions of the Minimalist Program (Chomsky 1995, 2000, 2001, 2005). However, this study is work in progress and all the relevant questions about the theoretical aspects of this investigation remain to be seen in more detail in the future.

The paper falls mainly into two parts: The first part will investigate the developments in constituent order in the evolution of Greek; more specifically, we will focus on the different positioning of dativa l constituents when complementing different classes of verbs and particular reference will be made to determining factors to which evolutions could be attributed. The second part of the paper will focus on the discussion of the position of the dative argument – experiencer (Exp) or recipient (Rec) – and I will look into whether we can highlight any parallels with the VO/OV evolution facts. A final concluding section will summarise the important points made in the paper.

Finally, it should be noted that all the examples will be transliterated into Latin characters and word-by-word glosses will be provided between the actual example and its translation in order to illustrate the syntactic structure of sentences. Towards this purpose, Greek long vowels *ω* and *η* will be respectively transcripted as /*o^*/ and /*e^*/ so as to reflect their extended length and aspirated vowels will be transliterated with an /*h*/ in front of them.

2. Developments in the diachrony of Greek

2.1 Constituent order

Consider the following examples:

(1) Xruson epempsen aute^.
gold.$_{ACC}$ sent her.$_{DAT}$
'He sent her gold.'

[1] All data provided come from my own research on a selection of appropriate texts, namely the TLG and Collections of Greek Documentary Texts, which are readily available in electronic form, and a selection of additional texts that are at the moment only available in edited form. From all of the above databases, appropriate texts have been selected which are thought to correspond – or at least to be closer to – the spoken language of the time. Due to space limitations, I will not provide here an extensive bibliography of the texts used but such a list is readily available and will be discussed in detail in the future.

[2] I would like to thank an anonymous reviewer for pointing out that tracing specific grammatical configurations through a body of texts can be tricky and results slim. This in turn poses a methodological problem, since one might wonder what kind of conclusions we can draw from a corpus comprising of very few occurrences (for instance, see below the samples on Tables 5 and 6). However, in my opinion this is a problem that the historical syntactician should live with. The fact that something appears in a text – even marginal where applicable – is a possible candidate for triggering or pointing to an alternation in the system and it has to be examined and be given an explanation.

(2) humin epempsa kle^ronomian.
you.$_{DAT}$ sent heritage.$_{ACC}$
'I sent you heritage.'

In both the above examples we have the same transitive verb complemented by Dative (DAT) and by Accusative (ACC). The difference is that in (1) we have the order ACC-DAT, or else Theme-Recipient, as opposed to the position in (2) where the orders are reversed (DAT-ACC, Recipient-Theme). In addition, in (1) we have verb-object (VO) word order (with regard to the dativa argument) as opposed to (2) in which the indirect object is preverbal[3]. Since it is positioned quite freely with regard to the verb, we can safely postulate that the dativa argument could either be fronted or postposed. But what has not previously been noticed is that the position of the arguments was nothing but unambiguous. In Table 1 below, I have kept track of the frequencies of object fronting with a view to determining the factors that could be crucial in explaining the changes,

Table 1. Constituent order between different classes of verbs

Periods/works	*Impersonal verbs*		*Monotransitive verbs*		*Ditransitive verbs*	
	VO	*OV*	*VO*	*OV*	*VO*	*OV*
HEROD.	59	107	54	36	169	165
PLATO	60	145	14	19	77	89
1AD	69	44	43	38	1623	304
2AD	18	16	38	16	607	168
3AD	9	12	27	19	654	153
4AD	10	4	37	17	481	175
5AD	28	75	75	25	509	192
6AD	7	12	21	25	150	78
7AD	3	3	19	9	251	66
8AD	2	2	52	26	148	101
10AD	74	136	190	143	759	504
11AD	12	1	14	10	104	57
12AD	16	19	20	20	145	110
13-14 AD	4	4	36	20	130	74
TOTALS	*371*	*580*	*640*	*423*	*5807*	*2236*

and I have also provided numerical evidence which shows that VO was the basic constituent order, at least for most types of verbs[4].

[3] When examining the position of the object, I refer to the dativa indirect object or complement of the verb or its Accusativa/Genitival/Prepositional phrase substitute/counterpart. The discussion of the position of this constituent aims at comparing relevant instances and at highlighting possible implications.

[4] When discussing the problems of word order, it is important to illustrate whether there was a prototypical word order for the era under discussion. As has been shown in the literature, for the period that I am interested in, the position of constituents is relatively free. The object tends to follow the verb but OV order is also found quite often. Taking into account the position of the subject as well, which could be found anywhere in the clause, we can then argue that almost all possible constituent orders – SVO, OVS, OSV – are found. Dover (1960), Horrocks (1997) and Taylor (1990) – for classical AG – provide further support for these claims.

However, for the purposes of the present paper, I will accept the hypothesis that the facts can be best accounted for by assuming that VO was the basic constituent order regarding the order of dativa complements in Greek in the evolution. But, the important question here is how frequent object fronting was in the evolution of Greek. With the evidence provided and discussed, my aim is to answer this question and to establish that evolution patterns regarding the position of the verb and its indirect object

To begin with, it would be interesting to look at different classes of verbs separately as significant differences are found between the different types. Firstly, there is the class of verbs normally regarded as "impersonal" in the sense of having a non-nominative experiencer but no formal subject. An example is given in (3):

(3) Eksesti humin manthanein.
Is possible you.$_{DAT}$ learn.$_{INF}$
'It is possible for you to learn.'

It is interesting to note that the frequency of preverbal complements is considerably higher in this class of verbs than in the others. This result is not expected under the analysis of these experiencers as VP-internal arguments here, since those complements are more likely to be postverbal, although of course other variations exist as well. So, how should the fronted complements be analysed syntactically? I will return to this discussion below.

Another category of verbs consists of those whose indirect object is in the dative and whose theme is either in the nominative or accusative case. Typical unaccusative/monotransitive verbs like "to help" or "to fight" fall into this category.

(4) Eboe^the^se e^ ge^ te^ gunaiki.
helped the.$_{NOM}$ earth.$_{NOM}$ the.$_{DAT}$ woman.$_{DAT}$
'The earth helped the woman.'

On the other hand, typical ditransitive verbs could be thought to constitute the third category, with (basically) accusative Theme.

(5) ho pate^r mou dido^sin humin ton arton.
the.$_{NOM}$ father.$_{NOM}$ my.$_{GEN}$ gives.$_{NOM}$ you.$_{DAT}$ the.$_{ACC}$ bread.$_{ACC}$
'My father gives you the bread.'

From an investigation of the examples, it appears that the hypothesis that VO was the prototypical order is borne out both for unaccusative/monotransitive verbs that are complemented only by the dative and for ditransitive verbs. However, for a specific class of verbs, namely the impersonals, it looks as if there are deviations in the frequencies of these word orders. I will now consider some explanations which have been proposed for the different frequency of preposed positioning for these complements.

2.1.1 Determining factors

Of particular interest and relevance to the data provided here is the hypothesis (arising from Allen (1995), who follows Elmer's (1981) analysis of Old English) that an object is particularly likely to be fronted if such fronting would satisfy an "animacy target". One obvious factor if we want to exclude the role of animacy is the topicality of the DPs[5]. Given the hypothesis that more topical information was placed at the beginning of

do not necessarily parallel the evolution facts when examining the order of dative experiencer/recipient and the theme.

[5] Following Comrie (1989), we define animacy as a universal conceptual category that is an inherent property of noun phrases and that exists independently of its realisation in any particular language and irrespective of the role of noun phrases within a particular construction. On the other hand, topic is defined as "what the sentence is about" while "the remainder of the sentence is the comment".

the sentence in AG (cf. Dik 1995; Matic 2003 and Newton 2005), it would seem natural to predict that more topical information is placed at the beginning of the sentences[6].

The animacy argument is also related to the distinction between human and non-human constituents. Therefore, one strong argument in favour of this claim is that subjects are usually human and so subjects should be clearly preposed – or at least subject fronting should form the clear unmarked construction – if the assumptions for the role of animacy are true[7]. But the problem here is that impersonal verbs do not have a formal subject anyway, in the sense that they are always found in third person singular and do not have a nominative subject, or rather, they do not have a constituent occupying the subject position at all. Moreover, after impersonal verbs, it is most common to have an order where the two objects are human and not human, namely an experiencer and an infinitive respectively.

(6) Eksesti humin manthanein.
Is possible you.$_{DAT}$ learn.$_{INF}$
'It is possible for you to learn.'

Irrespectively of the predictions of the "animacy hypothesis", the order of constituents seems to follow a specific trend independently of whether the constituent is animate or not. Table 2 below illustrates clearly the trend in question in key works in different periods of the evolution.

Table 2. Position of Dative constituents after impersonal verb "dokei" in the evolution

	TOTAL	*INF DAT*	*DAT INF*
HERODOTUS (5 B.C.)	20	0	20
NEW TESTAMENT (1 A.D.)	12	0	12
GLYCAS (12 A.D.)	16	0	16

The impossibility of experiencer fronting as indicated above for impersonal verbs does not seem to apply, though, for other verb classes. For example, an investigation into different constructions in the same periods and texts produces totally different results for the order of the constituents, as indicated in Table 3.

Table 3. Position of Dative recipients after ditransitive verb "dido^mi" in the evolution

	TOTAL	*ACC REC*	*REC ACC*
HERODOTUS (5 B.C.)	27	9	18
NEW TESTAMENT (1 A.D.)	76	41	35
GLYCAS (12 A.D.)	22	12	10

As was shown in Table 1, it is clear that while the dative complements are clearly preposed when complementing an impersonal verb, this is not the case after a ditransitive verb, where instances of both preposed and postposed recipients are found. Therefore, the higher frequency of object fronting with impersonal verbs cannot be

[6] For the purpose of this paper, I will accept this hypothesis. However, both the notions of animacy and the topicality hierarchy need to be explained and illustrated in more detail in support of the argument.

[7] This assumption seems true all other things being equal. The animacy hierarchy, as discussed in Silverstein (1976) and later in Comrie (1989), refers to the assumption that between two entities (i.e. Agent) and P (i.e. Patient) there is a strong tendency for the information flow from A to P to correlate with an information flow from more to less animate (and from more to less definite). See Comrie (1989: §6.2) for a more detailed discussion.

dismissed solely as counter-examples to the rule – we can safely postulate that this factor alone does not control the order of constituents. Whatever the role of animacy in determining constituent order in AG, it is clear that it needs to be further investigated and any claims supported by strong statistical evidence.

Another important factor that could have affected the changes relates to grammatical relations. The important role that grammatical relations play in determining word order is clear if we consider the ordering of the object, especially in ditransitive verbs. It is widely accepted that a pronominal object normally precedes a nominal one independently of which has dative and which has accusative case marking. Table 4 below verifies that pronominal complements are found much more often fronted than their equivalent DPs throughout the evolution.

Table 4. Object fronting with dative pronoun and DP instances throughout the evolution

	No object fronting		*Object fronting*	
	Number	*%*	*Number*	*%*
HERODOTUS (5 B.C.)				
Dative Pro	4	20.00%	16	80.00%
Dative DP	5	71.43%	2	28.57%
NEW TESTAMENT (1 A.D.)				
Dative Pro	24	44.44%	30	55.56%
Dative DP	17	77.27%	5	22.73%
MICHAEL GLYCAS (12 A.D.)				
Dative Pro	2	40.00%	3	60.00%
Dative DP	10	58.82%	7	41.18%
BELTHANDROS & CHRYSANTZA (13-14 A.D.)				
Dative/Genitive/Acc Pro	3	25.00%	9	75.00%
DativeGenitive/Acc DP	1	50.00%	1	50.00%

Furthermore, with double objects the order seems to be fixed when both complements show up as pronouns[8].

(7) Panta dedo^ken auto^.
all.$_{ACC}$ gave.$_{PAST.3S}$ him.$_{DAT}$
'He gave him everything.'

However, it seems that when both complements are pronouns, objects in accusative tend to precede the dativa l indirect object. This is indicated in Table 5 below[9].

[8] I am grateful to an anonymous reviewer for pointing out that *panta* in (7) might not necessarily be a pronoun and that maybe a descriptive term such as "non-referential" would be more appropriate here. In fact, according to traditional grammar, these constituents are considered indefinites but the term creates several implications and we will not use it for those instances here. Since the constituent denotes something comparable, we believe that the best term to describe such a quantifier would be the term "quantificational pronoun".

[9] As mentioned also in footnote 2, it is true that in Tables 5 and 6 reaching conclusions through such a small number of occurrences might be tricky and results slim. For those occasions, a solution would be to be more clear and elaborate further on the background of the specific texts used. However, for the purposes of the present paper and due to lack of space, I will accept the validity of the findings illustrated. Further discussion on the tradition of the specific texts remains to be done in the future.

Table 5. Constituent order with dativa l and accusatival complements of *dido^mi* showing up as pronouns

	Total	*pro-ACC*		*ACC-pro*	
		NUMBER	*%*	*NUMBER*	*%*
HERODOTUS	1			1	100.00%
NEW TESTAMENT	24	2	8.33%	22	91.67%
GLYCAS	3			3	100.00%

It appears though that there are only a few examples which fall into this category, since instances where we find both complements as pronouns are far less frequent than instances where one complement is a pronoun and the other is not. A relatively frequent type of examples that fall into this category is when the sentences are not main or coordinated clauses but they are relative clauses, complementing a particular referent. In this case, the accusative in question is fronted within the relative clause but it is usually adjacent to the object of the main clause immediately preceding the accusative pronoun. Finally, as we can see in example (7), in general the pronouns are not necessarily adjacent to each other but they are usually adjacent to the verb.

A final fact about the fronting of pronominal objects is of interest here. Horrocks (1997) argues that in the Hellenistic period pronominal objects showed a tendency to appear in second position in the sentence and that this placement of clitics (CL) in the sentence had a special importance, namely to form a unit with the verb[10]. If this is correct, then we would expect clitics not to be preposed most of the time, but rather to be postposed from the verb and for the verb to appear most commonly in initial position. However, this assumption is not borne out by the facts, as tentatively shown in Table 6.

Table 6. V first with clitic 2nd in New Testament

	TOTAL pronouns	*NUMBER OF V-1st, cl-2nd*	*%*
DOKEI	11	0	0.00%
BOE^THO^	4	1	25.00%
DIDO^MI	54	2	3.70%

Also, we would expect a significant difference in the tables in favour of VO during the periods when the change was supposed to be underway but this is not always the case. Furthermore, on the basis of the evidence gleaned from research into the textual corpus, it seems that clitics, although always productive, did not clearly outnumber instances of strong pronouns that appeared in equally large frequencies in the texts. The numbers provided in Table 5 clearly illustrate the tendencies that existed throughout the evolution[11].

[10] An anonymous reviewer suggests that further discussion needs to be made on the criteria distinguishing between strong pronouns and clitics in New Testament Greek. Due to lack of space, it would be impossible to go into further discussion in detail here. However, we should make clear that there are indeed different diagnostics between clitics and strong pronouns with the most striking criteria differentiating them being prosodic and morphological although in certain cases their different constituent order in the sentence plays a significant role too. We will assume that those criteria apply here too. For a detailed illustration of the differences between the two categories, consider Pappas (2004) and historical grammars of Greek (Jannaris 1897; Smyth 1920).

[11] Additional evidence is available regarding numbers and frequencies of clitics as opposed to strong pronouns for the whole period covered in this study. This evidence is not presented here due to lack of space.

2.2 Position of the experiencer: On the order of Exp/Rec-Theme (Th)

In Sipetzis (2005), I investigated the position of dative arguments and I provided numerical evidence regarding constituent order in early and later periods. The relevant table is repeated below as Table 7.

Table 7. Constituent order between different classes of verbs

	impersonal verbs		*unaccusative verbs*		*ditransitive verbs*	
	EXP-TH	*TH-EXP*	*EXP-TH*	*TH-EXP*	*REC-TH*	*TH-REC*
HERODOTUS	118	4	15	5	157	99
PLATO	111	3	0	0	56	33
1AD	53	10	8	1	357	249
2AD	20	2	2	3	131	106
3AD	9	1	2	0	177	109
4AD	5	0	6	2	138	102
5AD	46	10	11	13	212	131
6AD	7	1	2	1	79	61
7AD	3	1	9	7	60	60
8AD	2	1	19	21	77	83
10AD	117	21	44	91	431	534
11AD	6	2	4	7	60	55
12AD	13	1	7	4	58	80
13-14 AD	7	0	15	9	70	44
TOTALS	*517*	*57*	*145*	*165*	*2063*	*1746*

To the best of my knowledge, to date no one has presented any strong statistical evidence about how frequently these arguments occur in a specific position for AG. The facts discussed here are of particular interest because they strongly suggest that the view that experiencers, just like dative recipients, were usually fronted in all periods is in fact an oversimplification. It is interesting to note that, although the order Exp/Rec-Th was more common throughout the system of Greek in early centuries, it became increasingly infrequent as centuries passed. More specifically, it is quite clear that the order Rec/Exp-Th was the prototypical order for impersonal and ditransitive verbs but not for the class of monotransitive/unaccusative verbs. At the same time it seems that, during one specific period, namely, between the 7th and 11th centuries AD, there are significant changes in the positioning of Rec and Th when complementing ditransitive verbs. It seems that in the 8th century, especially when datives (or dativa l substitutes) complemented monotranisitive or ditransitive verbs, the order Exp/Rec-Th was becoming quite unusual. By the 10th and 11th centuries, the construction Th-Exp seems to have prevailed completely. This change might have been affected by whether the recipient or experiencer was in the form of pronouns or full DPs. As shown in Table 3, the placement of pronouns and DPs with respect to each other was very different throughout the evolution. Objects appearing as pronouns tended to appear mostly in the order Th-Exp/Rec, while the order Exp/Rec-Th was dispreferred. This is not the case when one of the objects was a full DP, when constituent order was not so clearcut at all[12].

[12] These facts could be associated with changes in the D system, as discussed in Sipetzis (2004) and Sipetzis (2005). However, this is still a hypothesis that remains to be discussed further.

To return to what is illustrated in Table 7, with monotransitive/unaccusative verbs experiencers clearly tend to precede the Th, in a pattern which clearly contrasts with the behaviour of the other classes of verbs (impersonals and ditransitives). In order to explain this pattern, it is interesting to assume that, in the case of unaccusatives, there is probably a subject position for an argument to appear in and this would often be the experiencer independently of whether the latter is in preverbal or postverbal position. With ditransitives, however, this option is not available as there is no optional argument position free for the Exp to occupy, let alone in positions where subjects are found. Thus, the most important question is whether Exp could be considered to be a quirky subject. Obviously, this means that quirky subjects, especially in unaccusatives, should be very commonly found.

However, looking more closely at the appropriate constructions, we can see that experiencers do not always agree in gender and number with the predicate. In fact, these sentences are the most common type in the corpus of AG texts and therefore, for the purposes of the present paper, I will assume that Exp complementing unaccusative verbs are not in fact quirky subjects, even though in some cases they look like they are: still, since they do not show agreement with the predicate, they cannot be considered subjects. In addition, if we assume that these experiencers are in the subject position, there is no obvious explanation as to why the Exp-Th pattern is different to the category of impersonal verbs. Indeed we would expect them to be similar, since they parallel unaccusative/monotransitive verbs in having an argument position free[13].

This brings us back to the discussion above about different types of verbs. For the so-called impersonal type of verbs, we can see that with this type of construction, the position of Exp regularly precedes the Th. Another interesting point is that the experiencer complementing impersonal verbs follows the same pattern as the recipient object of ditransitive verbs. This fact follows automatically under the hypothesis that experiencers complementing these verbs are simply objects, since there is no reason why these experiencers should be analysed in a different way from other complements. Thus the assumption that the experiencer is a complement in this type of construction does actually seem to account for the facts. On the other hand, if we assume that the experiencer was the subject, all the positional possibilities become problematic. Instances where the experiencer appears in first position essentially do not exist and this is entirely natural, being precisely what we would expect from a complement.

Finally, from what we have seen above, we can safely postulate that the VO/OV order does not necessarily correspond to a specific Exp-Th/Th-Exp order. This implies that the basic choice of VO/OV is independent of the licensing of the objects, which can be said to parallel the well known English evolution facts, as discussed in Lightfoot (1979). But what is also important here is that we can safely argue that Greek is not a tight VO system in the sense that certain aspects of the order of the system – mainly the contrast of VO/OV and Exp-Th/Th-Exp, as illustrated above – are not the same. This, in turn, can probably be accounted for if we hypothesise that arguments come in fixed order. Whether that order is VO or OV, of course, remains a hypothesis that needs to be investigated further in the future.

[13] A relevant discussion as well as subjecthood tests and diagnostics are available in Moore & Perlmutter (2000) and in Sigurðsson (2002). Certainly further discussion is needed for the issue of quirky subjects, which cannot be provided here due to lack of space.

3. Conclusion

In conclusion, in this paper we argued that the evolutions on constituent order clearly have syntactic effects and affected the structure of sentences. Attention has been given to two main issues, namely the illustration of the evolution of the system of Greek language regarding word order and the position of experiencer and theme arguments. I have postulated that change evolution facts relate to different classes of verbs and they were determined by a combination of factors.

There are certainly many relevant questions remaining open to future research. However, the central aim is to reach an explanatory account of the changes, taking into consideration not only the beginning and the end points but also the intermediate stages as well. This purpose provides an interesting challenge for any future research.

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