The syntax of δέ in Post-classical documentary texts

Abstract: δέ is one of the most frequently attested particles in Ancient Greek. Recent studies, most of which focusing on the Classical period, have analysed this particle as a 'discourse marker', signaling thematic discontinuity between sentences. While there have been far fewer studies of Post-classical Greek, there seems to be little disagreement that the function of the particle remained essentially the same in later periods of Greek. The main aim of this article is to show that this point of view represents an overgeneralization: based on a corpus of documentary texts (letters, petitions, and contracts in particular), I argue that δέ was syntactically extended, both in depth and in breadth: on the one hand, the particle comes to be used much more frequently to link clauses (main and subordinate), and even noun phrases; on the other hand, the particle is used not only to link a preposed subordinate clause to a main clause ('apodotic δέ'), but also a postposed subordinate clause to a main clause. Given this syntactic extension, δέ no longer functions exclusively as a discourse marker: it not only establishes 'textual' relations, but also 'logical' ones. To conclude the article, I discuss a number of factors which may have contributed to δέ's syntactic extension, focusing in particular on functional overlap with two other particles, καί and τε. The analysis is embedded in the *Systemic Functional* paradigm.

Keywords: δέ, Ancient Greek, particles, Systemic Functional Linguistics, τε, καί, textual function, logical function

1   Introduction

Together with καί, δέ is one of the most frequently attested particles in Ancient Greek.[1] The use of the latter particle, especially in the Classical period, has been quite intensely studied. A factor recognized by most treatments is the discontinuity brought about δέ, in contrast with the continuity effected by καί. Schwyzer & Debrunner (1950:562), for example, already note that δέ 'bezeichnet, daß (gegenüber dem Vorhergehenden) etwas Anderes, Neues kommt'. Other traditional grammars stress the 'adversative' value of δέ, such as Kühner & Gerth (1976[1904]:2.261-263), who relate it to an original adverbial function (δέ being a weakened form of δή).[2]

More recent treatments have characterized δέ as a 'discourse marker',[3] and have connected δέ's thematic discontinuity to modern linguistic concepts such as theme/topic. Martín López (1993:227), for example, considers δέ a topic switch marker:[4] 'la partícula δέ en griego es una forma especial de manifestación del element temático. Su fúncion primaria, de tipo organizativo, se encuentra ligada al papel del tema en la articulación

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[1] Cf. Mayser (1934:125) on the Ptolemaic papyri, and Martín López (1993:223), who claims that δέ and καί are the most frequently used particles in (Classical) Greek texts, followed by ἀλλά and γάρ.

[2] Denniston (1954:162-203) recognizes two connective uses, 'continuative' and 'adversative', next to the non-connective use of the particle.

[3] See e.g. Zakowski (2017:143-240), with references and discussion of the notion 'discourse marker'.

[4] Compare Soltic (2013) on Medieval πάλιν.

textual'. Bakker (1993), too, recognizes the importance of the concept 'topic', although he primarily considers δέ a 'boundary marker': even when the topic changes, an author may still choose not to use δέ, in order to signal thematic continuity. Most recently, Bonifazi *et al.* (2016, IV.2 §14) have noted that 'δέ is used to introduce contrast and to mark topic continuation, and has a range of intermediate functions.' They stress that 'δέ is one of the most versatile particles ... its versatility resides in its absolute lack of semantic stability.'

Findings on Post-classical Greek, which has received much less attention (with the exception of New Testament Greek), have been similar. One of the most explicit proposals about δέ's use has been Levinsohn (1987), who argues that δέ is used in the New Testament to indicate a thematic break. He claims that six factors can account for nearly every example in the New Testament:[5] (i) a change of temporal setting; (ii) a change in the underlying subject; (iii) a change in the cast of active participants; (iv) a switch back to the main events of the story, following a background comment; (v) a switch back from the main events to a background comment; and (vi) a change in the circumstances, state or attitude of a participant. These findings were corroborated and elaborated upon by Black (2002), who focuses on collocations with other features of discontinuity, such as tense and constituent order. Black (2002:166) finds that all of these formal features of discontinuity 'serve as mutually redundant cues guiding the audience to modify the mental representation they construct of the discourse'.

Despite the obvious theoretical differences, there is no disagreement about the fact that δέ's use basically remained the same across the Classical and Post-classical periods. Whereas the use of the particle seems to have been quite distinct in Homeric Greek,[6] scholars generally find little to no differences in later times. So, for example, Martín López (1993:223-224) writes that '[δέ] aparece en toda suerte de textos y su empleo no difiere sustancialmente de un autor a otro *o de una época a otra* [my emphasis]'. Zakowski (2017:xiv) notes in similar vein that 'there is no reason to assume *a priori* that δέ, γάρ, and οὖν would then have undergone dramatic shifts in their core meaning or function in the intervening time frame [that is, between the Classical period and the

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[5] Cf. Levinsohn (1987:95-96).
[6] Bakker (1993), for example, posits a separate, 'cognitive' use for Homeric Greek.

fourth century AD]. As far as I know, there is no study which argues that δέ, γάρ, and οὖν developed new meaning or functions over time.'

In this article, I aim to show that Post-classical Greek does, in fact, display divergences in the particle's use, which so far have escaped scholarly attention. Even though δέ was quite versatile in the Classical period, as Bonifazi *et al.* (2016, IV.2 §14) stress, it did show a number of syntactic constraints:[7] contrary to καί and τε, δέ was only used for event co-ordination,[8] and not for nominal coordination (in other words, it was a pure discourse marker).[9] Moreover, in the area of event co-ordination, δέ was primarily used to link sentences (indicating a topic switch, as noted above),[10] while it was less often used to link main clauses, even less so to link subordinate clauses, and never to link bare predicates. Another constraint on δέ's use as a linking device was that it could only link constituents of the same syntactic category and with the same semantic function.[11] It was infrequently used to link a main clause to a preposed subordinate clause ('apodotic δέ), and not at all to link a postposed subordinate clause to a main clause. As we will see, in Post-classical Greek there was a relaxation of such syntactic constrains, or in other words, a syntactic (and hence also semantic) extension of the particle.

The analysis presented here is based on Greek documentary texts, a corpus which has attracted some linguistic attention in recent years, also when it comes to particle usage.[12] I focus in particular on the Roman and Late Antique periods (I – VIII AD), which have not been systematically described.[13] To be more specific, I have collected all instances of δέ in letters, petitions, and contracts[14] from so-called 'archives', groups of texts that have

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[7] On the syntax of δέ, see also Bonifazi *et al.* (2016, IV.2 §18), where it is noted that δέ appears in five types of 'constructions': (1) appositions; (2) in main clauses that work as separate statements; (3) with subordinating conjunctions; (4) with participles and within infinitive constructions; and (5) in short constructions projecting a multi-act discourse unit. This short statement is not altogether very clear, however.

[8] On co-ordination, see Haspelmath (2007:1), where the following definition is proposed: 'the term coordination refers to syntactic constructions in which two or more units of the same type are combined into a larger unit and still have the same semantic relations with other surrounding elements'.

[9] As Haspelmath (2007:21) notes, the majority of the world's languages use different formal means for these two types of co-ordination. In many of the European languages, however, the word for 'and' is used for both languages.

[10] Compare Ruijgh (1971:161): 'δέ se trouve surtout dans la coordination des phrases indépendantes, tandis que καί coordonne plutôt des phrases qui font partie d'une seule phrase indépendante.'

[11] This is a universal constraint on coordination. Schachter (1977:90) has proposed the 'coördinate constituent constraint' in this regard, which stipulates that 'the constituents of a coordinate construction must belong to the same syntactic category and have the same semantic function.'

[12] See e.g. Bentein (2015, 2016a, 2016b).

[13] For the Ptolemaic period, quite elaborate descriptions of particles can be found in Mayser (1934).

[14] Giving a total of 2858 texts.

been collected in antiquity for sentimental or other reasons. Nearly 3000 instances of δέ can be found in this corpus, which should give a representative overview of the particle's use in Post-classical Greek.

The article is structured as follows: in §2, I briefly introduce the theoretical framework on which the analysis is based. In §3, I analyse the syntactic contexts in which δέ can be found, showing that δέ is not only used to link sentences, but also various sorts of clauses, and even noun phrases. In §4, I discuss a number of factors which may have contributed to the syntactic extension of δέ in Post-classical Greek, focusing in particular on functional overlap with two other particles, καί and τε. Concluding remarks are offered in §5.

2 Theoretical framework

Conceptually, the work presented here is embedded in the Functional tradition to language descripttion and analysis, more specifically the *Systemic Functional* framework (SFL).[15] While SFL was initially oriented towards English, from the very start it was meant to be a general theory of language, rather than a description of one particular language. Nowadays, SFL is firmly embedded in a typological tradition, and has been applied to a growing number of languages, including English, Chinese, French, German, Japanese, Modern Greek, Tagalog, Spanish, and Thai.[16] The theory has also been applied to various ancient languages, including Old Church Slavonic, Old English, and Ancient Greek.

SFL is *systemic*, in that it interprets and describes language as a resource, as 'meaning potential', rather than as just a set of structures or constructions.[17] SFL gives priority to the paradigmatic organisation of language, and analyses structure as the realisation of choice in semantic systems (e.g. SPEECH FUNCTION: proposition vs. proposal) and lexico-grammatical systems (e.g. MOOD: imperative vs. indicative). Next to 'semantics' and 'lexicogrammar', which together make up the 'content stratum', SFL also recognises a 'context stratum' and an 'expression stratum' (phonology/graphology).

SFL is not only systemic but also *functional*, in that it analyes the form of language in relation to the functions which it has evolved to serve. SFL claims that language has

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[15] For a recent, in-depth overview, see e.g. Halliday & Matthiessen (2014).
[16] See e.g. the volume edited by Caffarel *et al.* (2004).
[17] Caffarel *et al.* (2004:59).

three major 'metafunctions' which are called 'ideational' (expressing ideas about the world), 'textual' (creating text), and 'interpersonal' (engaging with others). For the ideational metafunction, two subcomponents are traditionally distinguished, which are called the 'experiential' and the 'logical'. Whereas the experiential component is more narrowly concerned with expressing ourselves and making meaning, the logical component concerns the expression of logical relations.

SFL hypothesizes that semantic and lexicogrammatical systems can be specifically related to one of these three metafunctions. One major semantic system in the textual domain is that of EXPANSION,[18] which is realized morpho-syntactically, among others, by the system of CONJUNCTION. According to Halliday & Matthiessen (2014), a secondary clause may 'expand' a primary clause in one of three ways: (i) it may 'elaborate' a secondary clause, that is, restate, specify or comment on it (e.g. 'in other words', 'for example', 'to sum up'); (ii) it may 'extend' a secondary clause, that is, adding to it by giving an exception or offering an alternative (e.g. 'and', 'furthermore', 'but'); and (iii) it may 'enhance' a secondary clause, by qualifying it with a circumstantial feature of time, place, cause or condition (e.g. 'so', 'therefore', 'though'). Reed (1999:34-35) offers an overview of Ancient Greek (subordinating/coordinating) conjunctions classified according to this scheme: particles such as καί and δέ can be classified under type (ii), EXTENSION, more specifically 'additive extension'.[19] No further subdistinction is offered of additive extension by Halliday & Matthiessen (2014), which would be irrelevant for most modern European languages.[20] For Ancient Greek, however, we can further distinguish between what Ruijgh (1971:134) calls 'transitory' (δέ) and 'combinatory' (καί, τε) addition.[21]

CONJUNCTION can be related to another, important system, TAXIS, which is concerned with logico-semantic relationships.[22] A basic distinction in that regard is that between 'hypotaxis' and 'parataxis': whereas hypotaxis forms the logico-semantic relationship between a dependent element and a dominat element, parataxis forms the logio-semantic relationship between two elements of equal status. Ancient Greek has both subor-

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[18] In SFL, labels for semantic and lexico-grammatical systems are traditionally capitalized.

[19] Two other types of extension are 'adversative' (e.g. ἀλλά) and 'variation' (e.g. τοὐναντίον).

[20] Ruijgh (1971:131) claims that modern European languages use asyndeton where Ancient Greek uses δέ.

[21] Compare Redondo Moyano (1995:102). For Ruijgh (1971:134), δέ (transitory) and καί (combinatory) form a privative opposition, the former being the unmarked term. This could be debated (compare e.g. Black's (2002:174) observations), but I will not go further into this issue here.

[22] Another relevant concept is ORIENTATION ('internal' vs. 'external'), but I will not go further into it here.

dinating and co-ordinating conjunctions, which can have the same semantic value in terms of EXPANSION. As Reed's (1999:34-35) overview shows, however, subordinating conjunctions are primarily used in the domain of ENHANCEMENT, whereas coordinating conjunctions are primarily found in the domain of EXTENSION.

Another important concept on the textual level is THEMATIC STRUCTURE. In SFL, the notion 'theme' is used to refer to the point of departure of the message, and the notion 'rheme' to refer to the remainder of the message. Other scholars tend to use the notions topic and comment, but this is avoided in SFL, for two main reasons. First, 'topic' typically has the connotation that the referent is 'given', that is, that it has already been introduced in the discourse. While this is often the case, it is not necessarily so: theme can be both given or new.[23] Second, SFL recognizes multiple themes: not only *participant themes* (e.g. '*John* likes to ride his bicycle'), which set up individual frameworks, but also *spatial, temporal and situational themes* (e.g. '*when they came home*, they had an icecream'), which set up circumstantial frameworks, and *discourse themes*, which set up subjective and logical frameworks (e.g. '*fortunately*, he was home').[24]

Next to the paradigmatic dimension, which is SFL's main point of focus, the framework also takes into account a second mode of semiotic organization, namely the syntagmatic dimension. The main principle guiding syntagmatic ordering (tradetionally called 'constituency') is called 'rank' in SFL. As shown in Figure 1, SFL proposes a lexico-grammatical[25] rank scale consisting of (i) the clause, (ii) the phrase (also 'group'), (iii) the word, and (iv) the morpheme. The guiding principle here is that of exhaustiveness:[26] units of one rank consist of units of the next rank - a clause consist of phrases, a phrase of words, and a word of morphemes. Each of the four units can also form 'complexes', that is, 'univariate (recursive) structures formed by paratactic or hypotactic combinations – co-ordination, apposition, modification and the like – at the rank in question' (Halliday (2002[1977]:24).

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[23] Cf. Halliday & Matthiessen (2014:119-121). See also Keenan & Schieffelin (1976:340-342), who distinguish between four different types of topics, based on referential givenness: (1) *collaborating discourse topics*, when two or more utterances share the same topic; (2) *incorporating discourse topics*, when a topic is connected associatively with a topic introduced in the previous utterance; (3) *re-introducing discourse topics*, when a topic is re-introduced that has appeared in the discourse history prior to the immediately preceding utterance; and (4) *introducing discourse topics*, which are not based on any previous utterance.

[24] See Downing (1991, esp. 128), and compare Halliday & Matthiessen (2014:105-114).

[25] For the phonological and graphological rank scales, see Halliday & Matthiessen (2014:5-7).

[26] Cf. Halliday & Matthiessen (2014:21-22).

Figure 1: Rank scale in SFl (from Halliday 2002[1977])
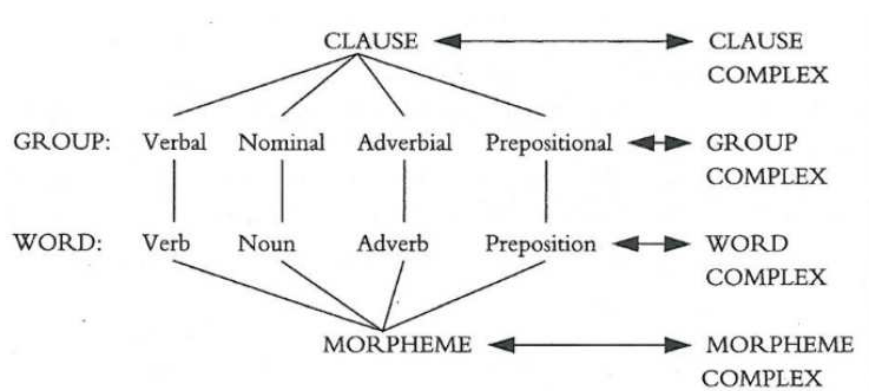
Porter & O'Donnell (2007) have recently argued that Ancient Greek particles can only be properly described when this second dimension, which they refer to as 'the vertical axis of levels of discourse', is taken into account. Whereas some particles, such as ἀλλά, are operative at the low-to mid-level, others, such as γάρ, are operative at the mid- to high-level of discourse, and still others, such as καί, are relevant to the entire discourse-spectrum. Note that only particles operative at the higher levels of discourse (that is, the clause complex) are concerned with the textual metafunction ('discourse markers'); other particles fulfill the ideational metafunction of language, in particular the logical metafunction.

To conclude this section, I would like to briefly touch upon the debate about the validity of the notion 'sentence' in SFL. Whereas earlier accounts such as Halliday & Hasan (1976) explicitly refer to the notion 'sentence' in their description of CONJUNCTION and other coherence-phenomena, more recent accounts such as Halliday & Matthiessen (2014) tend to replace it by the concept of 'clause complex'. Others studies, however, explicitly argue that the notion of 'sentence' should be maintained.[27] Morley (2000), for example, argues that five units should be taken into account - morpheme, word, phrase, clause *and* sentence. He considers the sentence a textual unit, 'which it has been convenient to adopt as the largest grammatical unit for the purposes of syntactic analysis' (2000:25).[28] He recognizes that the sentence is indicated orthographically in texts, and that it is often a matter of the individual author's style how many propositions are incorporated into a single sentence. Even though, in the absence of punctuation in

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[27] Haspelmath (2007:3), too, retains the notion of 'sentence' in his overview article of coordination.
[28] Compare Halliday & Hasan (1976:8): 'there is a sense in which the sentence is a significant unit for cohesion precisely because it is the highest unit of grammatical structure.'

our Ancient Greek source texts, the notion of 'sentence' is not unproblematic,[29] I will nevertheless maintain it,[30] for two main reasons: (i) because it captures thematic coherence better than the notions of clause or clause complex separately; [31] (ii) because there is no complete overlap between 'sentence' on the one hand and 'clause complex' on the other: a sentence can be a clause complex, but not necessarily; similarly, it can be a clause, but not necessarily.

3   The syntax of δέ in Post-classical documentary texts

3.1   Sentential coordination

The use of δέ to link two sentences is well known from Classical times, and continues to be frequently attested in documentary texts. In line with Martín López (1993), who claims that δέ is a dedicated topic (switch) marker, we see that δέ typically attaches to a number of different types of Themes.[32]

Most often, the particle attaches to a Participant Theme. This can be a subject (e.g.: ὁ θ(εὸ)ς δὲ διαφυλάξη (P.Abinn.19, l. 35; 342-351 AD)) or object (e.g. τὰς δὲ τοῦ ἀργυρίου δραχμὰς ἐβδομήκοντα δύο ἀποδώσω (P.Oxy.2.267, ll. 10-11 (36 AD); ἐπιστολὴν δὲ αὐτῷ οὐκ ἐποίησα (P.Abinn.31, ll. 13-14; 342-351 AD); τῇ δὲ δυνάμι τοῦ κυβερνήσαντός με θεοῦ θαρροῦμεν (SB.14.11882, ll. 8-9; IV/V AD)), a proper name (e.g. τῷ δὲ Σαταβοῦτι παρήγγειλα (SB.10.10308, l. 11; 11 AD); Μάξιμος δὲ ἔφυγεν (P.Euphrates.16, ll. 3-4; 239 AD); Ἀθανάσιος δὲ μεγάλως ἀθυμῖ (P.Lond.6.1914, l. 29; 335 AD?)), a pre-positional expression (e.g. περὶ δὲ τοῦ τροχοῦ (P.Oxy.48.3407, l. 23; IV AD); περὶ δὲ τοῦ ἴδους (P.Abinn. 30, l. 16; IV AD)), or a personal/demonstrative pronoun (e.g. ἡμ{ε}ῖν δὲ γ(ράφε) (BGU.16.2612, l. 7; 15 BC); τοῦτο δὲ \εἰ/ ποιήσειας (P.Herm.9, ll. 10-11 (IV AD); κἀγὼ δὲ ἔχω ἐγγὺς ὑμῶν (P.Apoll.42, l. 6; 703-715 AD)). Occasionally, a conjunct participle or adjective in predicative position is accompanied by δέ, too (e.g. ἐκφώντες δὲ (P.Sarap.28ter, ll. 17-18; 132 AD); λαβὼν δὲ τὸν σῖτον (P.Mil.vogl.2.70, l. 6; II AD); ἀξιω[θ]εὶς δὲ (P.Kell.1.72, l. 36; IV AD)).

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[29] For alternative punctuations, compare e.g. SB.1.5954, l. 13 (15 AD) with SB.10.10308, l. 11 (11 AD), and P.Oxy.43.3143, l. 14 (305 AD) with P.Oxy.43.3145, l. 15 (IV AD).

[30] Following studies of Ancient Greek particles such as Denniston (1954), Poythress (1984) and Black (2002).

[31] See e.g. Morley (2000:70): 'given that, in terms of meaning, each clause expresses an idea or proposition, then what the sentence does is to express one or more ideas or propositions, interwoven to present a coherent whole'.

[32] Interestingly, in BGU.16.2618, l. 14 (7 BC), δέ is used after two different types of Themes: a Spatio-temporal Theme and a Participant Theme (πολλάκι<ς> σοι δὲ γεγράφη[κ]α).

Discourse Themes, too, are accompanied by δέ, but less often. These are typically adverbs: so, for example, ἁπλῶς (e.g. ἁπλῶς δὲ περὶ πάντων πιστεύσω σοι (P.Kell.1.65, ll. 18-19; IV AD)); λίαν (λείαν δέ σ[ο\ι/] εὐ[χ]αρι[στήσω (P.Giss.Apoll.15, ll. 6-7; 116-120 AD)); μάλιστα (e.g. μάλιστ[α δ' ἐστὶ φρο]ντίς μο[ι (P.Lond.6.1929, l. 11; IV AD)); πάντως (e.g. πάντω(ς) δέ, Ἀφροδίσιε, τοὺς ἄρτους μοι πέμψον (P.Ryl.2.229, ll. 20-21; 38 AD)); πράως (e.g. [πράω]ς δὲ ἐπιτάξα[τε] αὐτῇ (P.Mich.3.219, l. 8; 296 AD)); etc. On occasion, we find adverbial expressions such as σὺν θεῷ (e.g. σὺν θεῷ δὲ ἐάν μοι ἐνεχθῇ ἀποστέλλω (P.Neph.4, ll. 21-22; V AD)); παρὰ πάντα (e.g. [παρὰ] πάντα δὲ χαριῇ (BGU.16.2600, l. 17; 13 BC)); πρὸ πάντων (e.g. πρὸ δὲ πάντων ἐπιμέλου [σ]εα<υ>τοῦ; BGU.16.2650, l. 16; 30 BC-14 AD)). In one example, δέ simply occurs after the negation (μὴ δὲ σα[κκ]ί[α] πέμψῃς (SB.16.12326, l. 14; III AD)). In another example, the particle occurs after οὔτε (οὔτε δὲ ἐγὼ Νόννα (P.Ness.3.57, 18; 689 AD)).

Temporal and Situational Themes form a third type of Theme with which δέ combines. The particle can be found in combination with prepositions such as ἀπό (e.g. ἀπὸ δὲ τοῦ Φαρμοῦθι μηνὸς (P.Abinn.22, l. 17; 342-351 AD)), πρό (e.g. πρὸ δὲ τεσσάρων ἡμερῶν (P.Cair.Masp.1.67063, l. 3; VI AD)), μέχρι (e.g. [μέχρι] δὲ τῆς γραφῆς τῆς παρούσης ἐπιστολῆς (P.Apoll.64, l. 8; 703-715 AD)); μετά (e.g. μετὰ δ[ὲ] θάνατον α[ὐτ]οῦ (SB.3.7205, l. 8; III AD)); εἰς (e.g. εἰς αὔριον δὲ (BGU.16.2629, l. 18 (4 BC)); κατά (e.g. καθ' ἑκάστη δ' ἡμέραν (P.Sarap.84a, ll. 9-10; II AD)); ἐπί (e.g. [ἐπὶ δὲ τῷ] τέλει τοῦ χρόνου (SB.14.11711, l. 20; 332 AD)); ἐν (e.g. ἐν παντ[ὶ] δὲ χρόνῳ (P.Flor.3.282, l. 20; 520 AD)). Occasionally, temporal or spatial adverbs are also combined with δέ, such as σήμερον (e.g. [σ]ή[μ]ερον δὲ ἥτις ἐστὶν (P.Apoll.66, l. 4; ca. 710-711 AD)), νῦν (e.g. τὰ δ[ὲ νῦν ἀξι]οῦμέν σε (BGU.16.2602, ll. 15-16 (14/13 BC)), ἄρτι (e.g. ἄρτι δὲ μελησάτω (P.Euphrates.17, ll. 11-12; III AD)), ἀρτίως (e.g. ἀρ]τίως [δ]ὲ τοὺς λογισμούς … ἐπράξαμεν (P.Cairo Masp.2.67156, l. 14; 570 AD)), ἐντεῦθεν (e.g. ἐντεῦθεν δὲ διέγραψεν (P.Flor.2.254, ll. 12-13; 259 AD)) or a dative or genitive of time (e.g. τῷ δὲ [δ]ιεληλυθότι ι (ἔτει) (P.Kron.42, l. 9; 148 AD); ἑκάστης δὲ ἡμέρας ἐνοχλοῦμαι (BGU.16.2618, ll. 10-11; 7 BC)). Infrequently, one finds instrumental expressions accompanied by δέ: so, e.g., διὰ δὲ [τ]ῆς αὐτῆς συγγραφῆς (CPR.15.9rptrpl, ll. 7-8 (15 AD)).

More often, Temporal and Situational Themes are realized in the form of pre-posed sub-ordinate clauses. So, for example, we find temporal Themes introduced by ὅτε (e.g. ὅτε δὲ παρε[γέν]οντ[ο ἐντάδε (P.Giss.Apoll.15, ll. 3-4; 116-120 AD)), ὁπότε (e.g. ὁπότε δὲ

ἐὰν βούληται ὁ Χαιρήμων ἀπογρά(ψεται) (P.Mich.6.427, ll. 28-29; 138 AD)), ἕως (e.g. ἕως δὲ περὶ τὴν ἀποδημίαν ἤμην (P.Ammon.2.45, l. 16; 348 AD)), ἡνίκα (e.g. ἡνίκα δε ἄρξονται εἰς τὸν θερισμόν (P.Lond.4.1354, ll. 10-11; 710 AD)), and ἅμα (e.g. ἅμμα δὲ τῷ αὐτὸν π[α]ρενεχθῆνε (P.Mich.8.493, l. 13; II AD)).[33] Situational themes are a broad category: we find conditional clauses introduced by εἰ/ἐάν (e.g. ἐαν δὲ μή, ἄλλα τρία σκαφῆα ἡμεῖν εὐπόρησον (BGU.16.2643, l. 26; 9/8 BC)) and ἐφ᾽ ᾧ (ἐφ᾽ ᾧ δὲ [ὑ]πολίψῃ ὁ Κρόνων (PSI.8.909, l. 11; 44 AD)), causal clauses introduced by ἐπεὶ (e.g. ἐπεὶ δὲ νῦν Νῖλος ὁ υἱὸς αὑτῆς γαμεῖν μέλλει (P.Flor.3.332, l. 23; II AD)), ὅτι (ὅτι δὲ α[....]οίων ἀφορμῶν φέρεται (P.Alex.Giss.38, l. 15; 117-138 AD)) and διὰ (δι[ὰ] δὲ τὸ ἀπογεγενῆσθαι (P.Brem.15, ll. 13-14; II AD)), and purpose clauses introduced by ἵνα (ἵνα δὲ γνῶμεν (P.Abinn.33, 13; 342-351 AD)). As is well known, the genitive absolute can function both as a Temporal and Situational theme. It quite often occurs with δέ, preposed to the main clause (e.g. ἐμοῦ δ᾽ ἐθέλοντος (BGU.16.2661, l. 4; 12 BC); τούτου δὲ μὴ βουλομέ[νου (SB.1.5238, ll. 17-18; 14 AD)).

As I already mentioned, Martin López (1993) claims that δέ is never combined with expressions which are correferential with the Theme of the previous sentence.[34] At least for Post-classical Greek, such a claim cannot stand. With regard to Participant Themes, for example, there's plenty of examples where a form of οὗτος anaphorically refers to the content of the previous sentence.[35] Moreover, there's also examples where a personal pronoun is used which is coreferential with the previous sentence.[36] Finally, one can also find cases where the Theme is coreferential with the Rheme of the previous sentence. Consider the following examples:[37]

(1)   ἐν τῷι μα (ἔτει) Καίσαρος ἐδάνεισα Ἀρπαγάθ[ηι] Πανεφρόμμιος Πέρσῃ τῆς ἐπιγον[ῆ]ς ἱερεῖ κατὰ συγγραφὴν δανείου ἀργ[υρί]ου κεφαλαίου (δραχμὰς) [τ]κε. διὰ **δὲ** τῆς α[ὑ]τῆς συγγραφῆς ὁ [Ἀ]ρπαγάθης ἐδή[λ]ωσεν πάντα τὰ ὑποπείπτοντα αὐτ[ῶι] φιλάνθρωπα ἐκ τοῦ τοῦ Σοκ[νο]παίου θεοῦ μεγάλου μεγάλου ἱερ[οῦ] μὴ ἐφάψεσ[θ]αι αὐτ[ὸν] τούτ[ω]ν (CPR.15.8rptrpl, ll. 3-11 (15 AD))

"Nell'anno quarantunesimo di Cesare prestai ad Harpagathes, figlio di Panephrommis, persiano della discendenza, sacerdote, sulla base di un contratto di

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[33] Relative clauses, too, are attested. So, e.g. ἐξ ἧς δὲ ἡμέρας ἐλήλυθα (P.Mich.8.493, l. 16 (II AD)).
[34] In Keenan & Schieffelin's (1976) terminology, δέ would only be used with introducing and re-introducing discourse topics (cf. fn. 23).
[35] See e.g. SB.20.14401, l. 5 (147 AD); P.Lond.6.1919, l. 16 (330-340 AD); P.Herm.9, ll. 10-11 (IV AD); SB.6.9102 l. 34 (547-549 AD).
[36] See e.g. P.Brem.5, l. 11 (II AD); P.Mil.Vogl.2.61, l. 10 (II AD); P.Sarap.85, l. 5 (II AD); PSI.12.1259, l. 10 (II/III AD); P.Apoll.42, l. 6 (703-715 AD).
[37] Translations are my own unless otherwise indicated. δέ has been marked in bold for the sake of clarity.

mutuo, la somma di 325 dracme d'argento; e nello stesso contratto Harpagathes dichiarò che tutti i benefici derivantigli dal tempio di Soknopaios, dio grande grande, egli non li avrebbe toccati" [tr. Savorelli]

(2) ἀνέσπασάν με καὶ παρέδωκαν εἰς τὸν τοῦ Σωτηρίχου λόγον, ἁπλῶς μηδέν μου ὀφείλοντος, καὶ οὐ πρότερον ἀπελύθην ἱ μὴ μεθ' ἱκανοῦ. ὁ **δ'** αὐτὸς Σωτήριχος ἀπηνέγκατό μου ἱμάτιον (P.Col.8.209rpdupl, ll. 22-29 (3 AD))

"They arrested me and handed me over to the ... of Soterichos, even though I owed absolutely nothing, and I was not released until I had given security. And the same Soterichos took my cloak away" [tr. Bagnall, Renner & Worp]

In both of these examples, the Theme, accompanied by δέ, is co-referential with (part of) the Rheme of the previous sentence: συγγραφὴν in (1) and Σωτηρίχου in (2).

As Zakowski (2017:180) notes, Temporal and Situational Themes often recapitulate part of the information in the previous clause, forming, as it were 'the "springboard" from which the information in the main clause of the δέ utterance "launches"', or in other words, the background for the information in the main clause. From this point of view, they can be seen as presenting information that is referentially given.[38] This is very clear in genitive absolute constructions, such as the following:

(3) ἐνέτυχον, κύριε, διὰ βιβλιδίου τῷ λαμπροτάτῳ ἡγεμόνι Αἰμιλίῳ Σατουρνείννῳ δηλῶν τὴν γενομένην μοι ἐπέλευσιν ὑπὸ Σώτου τινὸς ... τοῦ **δὲ** Σω (l. Σώ<του>) τελευτήσαντος, ὁ τούτου ἀδελφὸς Ἰούλιος καὶ αὐτὸς τὴν περὶ αὐτοῦ βίᾳ χρησάμενος ἐπῆλθεν τοῖς ἐσπαρμένοις ὑπ' ἐμοῦ ἐδάφεσει (P.Mich.6.423, ll. 2-8 (197 AD))

"I appealed, my lord, by petition to the most illustrious prefect, Aemilius Saturninus, informing him of the attack made upon me by a certain Sotas ... Then Sotas died and his brother Iulius, also acting with the violence characteristic of them, entered the fields that I had sown." [tr. Youtie & Pearl]

In this example, the genitive absolute τοῦ δὲ Σω<του> τελευτήσαντος clearly recapitulates information from the previous sentence, Σώτου τινὸς, and adds the new information that this person has died.

In view of these and other examples, to say that δέ only occurs with referentially new information clearly seems an overgeneralisation. Another factor which is not usually taken into account, is the change in word order in Post-classical Greek: as is well-known,

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[38] As Zakowski (2017:182) stresses, both the main clause and the subordinate clause should be seen as falling under the particle's scope.

Post-classical Greek prefers VSO over SOV,[39] with pronominal constituents immediately following the verb.[40] As Horrocks (2007:622) notes, VSO could be disrupted in two main cases: (i) when a clausal constituent was preposed as an emphatic/constrastive focus; (ii) when a complementizer or sentential 'operator' (expressing negation, interrogation, or modality) occupied the initial slot. The result is that the verb, which is normally considered to belong to the Rheme,[41] is now placed in sentence-initial position,[42] followed by the Theme, and then the non-verbal constituents of the Rheme. Since δέ, as a postpositive 'Wackernagel' particle, has to be placed in sentence(clause)-second position, following the verb, it no longer combines with purely thematic information.[43]

In our corpus, this change in word order has a rather heavy impact: in Roman letters (I – III AD), for example, δέ follows a sentence-initial verb in 35% of the examples (164/ 467), and in Late Antique letters even in 40% of the cases (99/244). We see that this happens even with Temporal/Situational and Discourse Themes, as in (4), where one would expect πάντως to be fronted.[44] Even in preposed subordinated clauses, there's a tendency to place δέ after the verb, as shown in (5).

(4)   ἀπόλυσον **δὲ** πάντως Σερῆνον τὸν χαρτ[ο]υλάριον καὶ τὸν ῥιπάριον καὶ τὸν μειζότερον, οὐδὲ γὰρ θέλω σε τοι[ο]ῦτό τί π[ο]τε διαπράξασθαι (P.Oxy.16.1854, ll. 5-6 (VI/VII AD))

        "And by all means release Serenus the secretary and the riparius and the headman, for I do not wish you to do anything whatver of that kind." [tr. Grenfell, Hunt & Bell]

(5)   ἵνα μάθητε **δὲ** γὰρ ὅτι σήμερον ἥτις ἐσ[τὶ] κτλ. (P.Apoll.63, l. 25 (703 – 715 AD))

        "So that you learn that yesterday, which was the etc."

Interestingly, however, in a number of examples δέ follows the verb *and* its pronominal complement, rather than just the verb, contrary to the Classical rule that it should

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[39] Whereas a number of studies have connected the preference for verb-initial word order to Semitic influences (e.g. Blass & Debrunner 1979:401), Horrocks (2007:621-623) has suggested to connect it to clitic placement.
[40] Cf. Levinsohn (2000:29-30).
[41] Cf. Levinsohn (2000:31, fn. 6).
[42] Especially imperatives, it seems. See e.g. BGU.16.2627, ll. 12-13 (2 BC); P.Michael.15, l. 7 (I/II AD); P.Abinn.19, l. 11 (342-351 AD); P.Oxy.48.3408, l. 14 (IV AD); P.Lond.6.1924, l. 9 (IV AD); P.Amh.2.145, l. 15 (IV AD).
[43] This concerns Participant Themes in the first place. Spatio-Temporal, Situational and Discourse Themes are still often fronted. Compare Levinsohn (2000:7-28).
[44] See e.g. P.Kell.1.72, l. 44 (IV AD); P.Lond.6.1914, l. 29 (335 AD?); SB.18.13588, ll. 11-13 (IV AD). Compare Levinsohn (2011:48-49).

always occur in sentence/clause-second position.[45] When the verb is negated, δέ can even be found in sentence-fourth position, as shown in the following example:

(6)   μὴ εὕρωμέν σε **δὲ** πέμψαντα ἀπαργυρισμὸν (SB.3.7241, ll. 26-27 (710 AD))

    "Let us not find that you have sent a money composition." [tr. Bell]

3.2   Clausal coordination

In Greek documentary texts, δέ is also often used to link clauses inside one and the same sentence. A couple of uses can be distinguished in this regard: δέ can link two main clauses (§3.2.1), it can link two subordinate clauses (§3.2.2), it can link a preposed subordinate clause and a main clause (§3.2.3), and finally it can also link a main clause and a postposed subordinate clause (§3.2.4).

3.2.1   δέ linking two main clauses in the same sentence

δέ can be found quite frequently in the documentary corpus connecting two main clauses. In such cases, δέ very frequently follows a verb in clause-initial position, rather than a Participant, Temporal/Situational or Discourse Theme.[46] This is rather problematic for recent treatments, such as Martín López (1993), who, as mentioned above, claims that δέ always co-occurs with a topic/Theme. This is not to say that Martín López (1993) denies the existence of such cases: she considers them to occur only sporadically, and she claims that when they occur, they always do so with semantic classes which have little semantic import, such as verbs of existence, presentative verbs, and verbs of speech, movement or sending.[47]

I do not really see why the above-mentioned verb classes, which are quite broad in nature, should have little semantic import, or how little semantic import justifies the use of δέ within Martín López's (1993) framework. In my corpus, various examples can be found with Martín López's verb classes, such as verbs of sending, verbs of speech, and

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[45] For some examples, see e.g. SB.10.10240, ll. 24-25 (41 AD); P.Brem.61, l. 29 (II AD); P.Sakaon.61, l. 16 (299 AD); P.Abinn.16, ll. 6 & 11 (342-351 AD); P.Abinn.19, ll. 12-13 (342-351 AD); P.Abinn.31, l. 8 (342-351 AD); P.Apoll.37, l. 7 (ca. 708-709 AD); PSI.15.1570, l. 7 (712 AD).
[46] This is not hard to explain, since Situational/Temporal and Discourse Themes are much less common in a clausal context.
[47] Cf. Martín López (1993:226).

verbs of movement,[48] but examples can just as well be found with other verb classes, as shown below:[49]

(7) ὑπάρχει μοι ἐν τῆι μητροπόλει πλησίον τοῦ Μενδησίου οἰκίαι δύο καὶ περὶ Λητοῦς πόλιν τῆς Ἡρακλείδου μερίδος γῆς ἀμπελείτιδος ἄρο(υραι) ἒξ ἢ ὅσαι ἐὰν ὦσι, καταγείνομαι **δὲ** ἐν τῆι τοῦ προγεγραμμένου μου ἀνδρὸς οἰκίᾳ ἐν Ὀξορύγχων πόλει (P.Oxy.47.3332, ll. 4-8 (53 AD))

"There belong to me in the metropolis, near the Mendesion, two houses, and at Letopolis in the division of Heraclides six arouras of vineyard, or however many there are; but I live in the house of my aforesaid husband in the city of Oxyrhynchus" [tr. Browne *et al.*][50]

(8) Εἰσίδωρος ὁ ἀποδιδούς σοι τὴν ἐπιστολὴν ἐστίν μου ἐκ τῆς οἰκίας, ἐστὶν **δὲ** τῶι γένει ἀπὸ κώμ[η]ς Ψώφθεω[ς] τοῦ Μεμφίτου (P.NYU.2.18, ll. 3-5 (19 AD))

"Isidoros the bearer of this letter to you belongs to my household; he originates, however, from the village of Psophthis in the Memphite nome."

(9) δεχόμενος τὴν παροῦσάν μου ἐπιστολὴν κατάλαβε τὰ πρὸς μὲ ἐν τῇ πόλει, φέρε **δὲ** ἐρχόμενος καὶ τοὺς εὐπόρους ἀνθρώπους τοὺς ἔταξα ὑμῖν ἐν τῇ γνώσει (P.Ross.Georg.3.23, ll. 1-2 (VIII AD))

"Sobald du den vorliegenden Brief erhälst, komm zu mir in die Stadt und führe mir jene wohlhabenden Leute zu, welche ich euch in der Liste genannt habe." [tr. Zeretelli & Jernstedt]

δέ is attached to three different verb classes in these examples: a verb of residence such as καταγείνομαι, a copulative verb such as εἰμί, and a verb of carrying such as φέρω. Note that whereas in (7) and (8) δέ almost seems to have an adversative meaning,[51] in (9), there is little to no discontinuity: there is no change of temporal or spatial setting, the subject remains the same, etc.[52] Note, however, that there is not a high degree of event integration[53] between the two clauses: κατάλαβε and φέρε still form what Mithun (1988:335) calls 'conceptually distinct aspects of an action, event, or scene.'

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[48] See e.g. BGU.3.844, l. 14 (83 AD) (πέμπω); P.Fay.122, l. 22 (ca. 100 AD) (πέμπω); P.Lond.6.1914, l. 23 (335 AD?) (παραγγέλλω); P.Fouad.87, l. 28 (VI AD) (ἀνέρχομαι).
[49] For similar examples, see e.g. P.Graux.2.10, l. 9 (I AD) (ἀγοράζω); P.Mich.5.312, l. 27 (34 AD) (ἔχω).
[50] Translations are my own unless otherwise indicated. The particle δέ has been indicated in bold for the sake of clarity.
[51] Compare Mayser (1934:127-128) on the Ptolemaic papyri.
[52] Compare Levinsohn's (1987) list of six factors mentioned in the introduction.
[53] On event integration, see further Givón (2001.2:40–58).

There are a couple of cases of clause-linking δέ occurring with a Participant Theme. The following example is one of them:[54]

(10)   Ὀρσενοῦφις Ἡρακλήου καὶ Ἡρακλῆς Πτόλλιδο[ς] ἐπαφέντος τὰ ἑατῶν πρόβατα εἰς τὰ νεώφυτα τῶν ἐλαιώνων τῆς αὐτῆς οὐσίας ἐν τῶι Δρομῖ <κατενέμησαν(?)> φυτὰ ἐλάινα διακώσια ἐν τοῖς πρότερον Φαλκιδίου, χωρὶς **δὲ** τούτου κατέλαβα τοῦτον διὰ νυκτὸς ἠλμένον ἐξ ὑπερβατῶν εἰς τωὶ τῆς οὐσίας ἐποίκιον Δρομήως λεγωμενου (P.Ryl.2.138, ll. 6-18 (34 AD))

"Orsenouphis son of Heracleus and Heracles son of Ptollis, letting their flocks into the young plantations in the olive-yards of the aforesaid estate, grazed down 200 olive-plants on the Dromeus-farmstead amongst those formerly the property of Falcidius. Over and beyond this I detected him when under cover of night he had sprung into the farmstead called Dromeus." [tr. Johnson *et al.*]

In an example such as this, however, it is unclear whether χωρὶς δὲ τούτου κατέλαβα should be considered a separate clause within one and the same sentence, or a new sentence altogether.

3.2.2   δέ linking two subordinate clauses in the same sentence

The use of δέ linking subordinate clauses is much less well known: according to traditional grammars, δέ, as a co-ordinating conjunction, is supposed to connect elements of the same order, more specifically paratactic main clauses.[55] Bonifazi *et al.* (2016 IV.2 §43) do seem to allow for such usages, but they do not provide any actual examples. In documentary texts, plenty of them can be found.

Quite a few examples can be found with infinitival complement clauses.[56] So, for example, we read in a second-century petition:

(11)   ἀξιῶ ὑ[πὸ σοῦ, κύριε,] ἀκουσθῆναι καὶ ἐγδικηθῆναι ἵν' ὦ εὐεργετημένος, τὸν **δὲ** ἀ[ντίδικον πεμ]φθῆναι ἐξ αὐθεντίας σου ἐπὶ τὴν σὴν διάγνωσιν (P.Mich.6.425ll. 20-22 (198 AD)

"I request, my lord, that I be heard and avenged by you, so that I may be the object of your beneficence, and that the defendant be sent by your authority for your examination" (tr. Youtie & Pearl).

In this case, the petitioning verb ἀξιῶ is followed by three passive infinitives: ἀκουσθῆναι, ἐγδικηθῆναι and πεμ]φθῆναι. Whereas the first two of these are connected

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[54] For similar examples, see e.g. P.Ryl.2.128, l. 24 (30 AD); P.Mich.15.751, l. 12 (II AD); P.Lond.6.1924, l. 6 (IV AD); P.Oxy.16.1840, ll. 3-4 (VI AD); SB.24.16222, l. 4 (after 603 AD).
[55] Cf. Bakker (1993:283).
[56] Examples with participial complement clauses are less frequent. See e.g. P.Kron.35, ll. 4-12 (135-136 AD); P.Mil.Vogl.3.196, ll. 6-18 & 19-23 (140 AD).

through καί, δέ is used for the last infinitive, perhaps not unexpectedly given the introduction of the Participant Theme τὸν ἀ[ντίδικον.[57]

In other cases, however, there are far fewer signs of thematic discontinuity, which is not unexpected, since non-finite complementation typically is used in contexts of little discontinuity.[58] So, for example, we read in a second-century AD private letter:

(12) γίνωσκ[έ] με τῆι τρίτηι μηνὸς κατηντηκέναι ε[ἰ]ς Ἀλεξάνδρειαν καίπερ πολλ[ὰ] ἐκ[ι]νδύνευσα ἀπὸ χειμῶνος σφοδροῦ κατὰ τοῦ βί[ο]υ, ἀναδεδωκέναι **δὲ** αὐτῆι τῆι τρίτηι Ἀπίᾳ τὴν ἀπὸ τοῦ φίλου Ἀπολλῶτος ἐπιστολήν (P.Brem.48, ll. 3-8 (118 AD)

"Know that I have arrived on the third of the month in Alexandria even though I have encountered grave dangers because of a violent storm, and that I have given to Apia on the same third day the letter from her friend Apollôs."

Modern accounts[59] of the use of δέ such as Levinsohn (1987), Bakker (1993) and Martín López (1993) have difficulties explaining such examples, since there are few if any factors contributing to thematic discontinuity (correlated with a new topic): the setting remains the same, as does the subject, and there is no shift from foreground to background or vice-versa. The only thing that can be said is that the clauses form conceptually distinct events, and are not highly integrated into each other.

For a perhaps even more perplexing example,[60] consider the following passage from a first-century petition:

(13) ἀξιῶι σε τὸν πά[ν]των εὐ[ερ]γέ[τ]ην, ἐὰν [φ]αίνηται, προστάξαι γράψα[ι το]ῖς παρὰ [τοῦ Τρύ]φω[ν]ο[ς] μὴ [π]αρενοχλεῖν [μ]ε π[ερὶ τούτ]ων, [ἀναδοῦναι **δέ** μοι τὴ]ν δηλουμ[έν]η[ν χειρογ]ραφίαν [καὶ εἱ]ς τ[ὸ] λ[οιπὸν ἀπέχεσθαί μου (SB.16.12713, ll. 13-17 (5 AD))

"I ask you, my benefactor, if it seems good to you, to order to write to Tryphon's people not to bother me about these things, and to give me back the cheirographia referred to, and in the future to leave me alone."

In this example, the verb γράψα[ι is followed by three infinitival complements: [π]αρ-ενοχλεῖν, ἀναδοῦναι, and ἀπέχεσθαί. Whereas δέ is used to link ἀναδοῦναι and [π]αρ-ενοχλεῖν, καὶ links ἀπέχεσθαί to ἀναδοῦναι. It is unclear what motivated this choice.

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[57] Compare P.Mich.5.262, ll. 17-20 (35-36 AD); P.Fam.Tebt.29, ll. 18-20 (133 AD); P.Petaus.19 (185 AD), ll. 4-7; P.Oxy.1.59 (292 AD), ll. 11-13; P.Lond.3.992 (507 AD), ll. 14-22; P.Oxy.1.136 (583 AD), ll. 25-26.
[58] Cf. Givón's (1980) 'binding principle'.
[59] With the exception of recent treatments which propose very general descriptions, such as Bonifazi *et al.* (2016, IV.2) and Zakowski (2017). Zakowski (2017:230) seems to be well aware of the problems connected with such an approach.
[60] Note, though, that the readings of δέ and καί are not entirely secure according to the editor.

Again, there are no clear signs of discontinuity: the subject is identical and there is no spatial change of setting. ἀπέχεσθαί is situated in the future (εἱ]ς τ[ὸ] λ[οιπὸν), more so than the two other verbs/clauses, but here καί, a sign of thematic continuity, is used.

Similar usages can be found in contracts, where infinitival complements are often linked to each other through the use of δέ, even if there are few if any signs of thematic discontinuity. So, for example, we find:

(14) ὁμολογ(οῦσιν) Μαρσισοῦχος Μαρεψήμιος Πέρσης τῆς ἐπιγον(ῆς) ὡς ἐτῶν πεντήκοντα οὑλὴ ἀντίχειρι δεξιᾶ καὶ <ἡ> <τού>του γυνὴ Ταμαρρῆς Μάρωνος ὡς ἐτῶν τριάκοντα ... εἰς ἔκτεισιν ἔχιν παρὰ κολλεύτις της ψοιφος ὡς ἐτῶν εἴκοσι δύο ... τὰς τοῦ ἀργυρίου ἐπισήμου νομίσματος κεφαλαίου δραχμὰς εἰκοσιτέσσαρες, ἀντὶ **δὲ** τῶν τούτων τό(κων) συνκωχωρηκέναι τῇ Κολλεῦτι ἐνοικήσιν κτλ. (P.Lips.2.130, ll. 5-17 (16 AD))

" Es erklären Marsisuchos, Sohn des Marepsemis, Perser von Abstammung, ungefähr fünfzig Jahre alt, mit einem Mal am rechten Daumen, und seine Frau Tamarres, Tochter des Maron, ungefähr dreißig Jahre ... von Kolleutis, der Tochter des Psoiphis, ungefähr zweiundzwanzig Jahre alt ... die vierundzwanzig Drachmen in geprägten Silbermünzen als Kapital erhalten zu haben, für deren Zinsen aber der Kolleutis zugestanden zu haben, dass sie ... wohne" [tr. Duttenhöfer]

In this example, two infinitives depend from the matrix verb ὁμολογ(οῦσιν): εἰς ἔκτεισιν ἔχιν and συνκωχωρηκέναι. Again, there are few signs of discontinuity:[61] the subject remains the same, there is no spatial or temporal change, no shift from foreground to background, etc.[62]

Another interesting example, where both δέ and καί are used to co-ordinate infinitival complement clauses, can be found in a marriage contract from the sixth century:

(15) ἀνθομολογεῖ δὲ] καὶ ἡ προγεγραμμ[ένη Εὐπρέπεια] συνοικεῖν τῷ προγεγραμμένῳ θαυμασιωτ(άτῳ) ⟦Ἀκυλλίνῳ⟧ ἀκαταγνώστως, **καὶ** ὑπακούειν αὐτοῦ ἐν ἄπασι, ἀκολουθῆσαι **δὲ** αὐτῷ ὅπου δ' ἂν βουληθείη ἐν ταύτῃ τῇ ἐπαρχίᾳ καὶ μέχρι Ἀλεξανδρείας καὶ μόνης, **καὶ** μηδὲν παρὰ τὸ πρέπον διαπρά[ξασθαι (P.Cair.Masp.3.67340r, ll. 40-47 (VI AD))

"And the aforementioned Euprepeia agrees to live together with the aforementioned most excellent [Acyllinus] unexceptionably, and to obey him in everything, and to follow him wherever he wants to go in the eparchia even up to Alexandria, and to do nothing that is not befitting."

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[61] It is interesting to make a comparison with ll. 31-36 of the same document, where we do see clear signs of discontinuity.

[62] δέ could, perhaps, be seen to function as a boundary marker in a wider sense: since it is typically not used for co-ordination in the lower regions of the rank scale (that is, for words and word groups), it unambiguously signals that a second complement is attached to ὁμολογ(οῦσιν). Especially in contracts, which can be very lengthy and wordy, such a disambiguating use may not be entirely excluded.

In this case, the matrix verb ἀνθομολογεῖ is followed by four infinitival complements: συνοικεῖν, ὑπακούειν, ἀκολουθῆσαι, and διαπρά[ξασθαι. All of these complements have the same subject, and the same spatio-temporal setting, although there is an interesting aspectual contrast between the first two (present) infinitives, and the last two (aorist) infinitives. The variation between δέ and καί is quite striking: first καί is used, than δέ, and then again καί, almost as if the author of the document was consciously varying the use of conjunctions.

There are also a couple of examples of subordinate clauses with finite verbs. The following example, from a first-century petition, forms an interesting parallel to our earlier mentioned example (11).[63] Here, however, subjunctives are used instead of infinitives:

(16)   ἀξιῶ συντάξαι καταστῆσαι τὸν Σωτήριχον ἐπὶ σέ, ὅπως διαστολὰς λάβῃ ἀπέχεσθαι μου, ἐπαναγκασθῇ **δὲ** καὶ ἀποδοῦναι ἃ ἔχει μο(υ) (P.Mil.2.43, ll. 5-10 (3/4 AD))

   "I ask you to order to bring Soterichus to you, so that he receives orders to leave me alone and that he be also obliged to return to me too what he has from me."

Again, there are no clear signs of thematic discontinuity: the subjects are identical, there is no temporal or spatial change of setting, nor does the foreground shift into background. The only apparent reason for the use of δέ would be that there is already an (adverbial) καί used before the verb ἀποδοῦναι.

3.2.3 δέ linking a preposed subordinate clause and a main clause

In a number of examples, δέ links two clauses of a different level, that is, a (preposed) subordinate clause and a main clause. This is somewhat unexpected, since, as noted in §§1 and 2, conjunctions (both coordinating and subordinating) typically link elements of the same syntactic level.[64] Consider, for example, the following passage:

(17)   Φλαουίῳ Ἀβιν[ν]έῳ ἐξάποπροτηκτώρων ἐπάρχῳ εἴλης κάστρων Διονυσιάδος. παρὰ Αὐρηλίου Ἥρωνο[ς] διάκω[ν]ος ἀπὸ κώμης Βερνικείδος τοῦ αὐτοῦ νομοῦ χαίρειν. εἰ μὴ ὑπῆρχεν ἡμεῖν ἡ τῶν νόμων ἀλήθεια πάλαι **δ'** ἂν ὑπὸ τῶν κακούργων ἀναιλούμεθα (P.Abinn.55, ll. 1-6 (351 AD))

   "To Flavius Abinnaeus, formerly one of the protectors, praefectis alae of the camp of Dionysias from Aurelius Heron, deacon, of the village of Berenicis in the same nome, greeting. If we did not possess the truth of the laws we should long ago have been destroyed by evil-doers."

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[63] For a similar example, see e.g. P.Rein.2.115, ll. 2-5 (261 AD?).
[64] Compare Probert (2015:416): 'it would seem that a coordinating conjunction has no business linking a subordinate clause and a following main clause'.

18

In this passage, the sentence containing δέ is the first real sentence after the opening lines. Rather than occurring in the preposed conditional clause, however, δέ occurs in the main clause, thus linking two clauses of different syntactic levels. This usage, which is referred to in the literature as 'apodotic' δέ, is not a Post-classical innovation: it can be found already in Archaic and Classical Greek, and much more frequently.[65]

Whereas the term 'apodotic' is prototypically used for δέ in main clauses that answer a conditional protasis,[66] apodotic δέ can actually be found in a broader range of contexts: it also appears, both in Archaic/Classical and Post-classical Greek, after temporal, causal and purpose clauses, and even after participial clauses. These are some examples from the documentary corpus:[67]

(18)   ἐπεὶ καὶ οἱ ἀπὸ Σαθρὼ ἀνεληλύθασιν χρὴ **δὲ** καὶ τοὺς ἀπὸ Εὐημερείας ἀνελθεῖν (P.Flor.2.172, ll. 2-5 (256 AD))

"Since the people from Sathro have come up, it is necessary that those from Euhemeria come up too."

(19)   καὶ πρὸς τω αὐτὴν εἰδέναι καὶ ἀμεριμνῆσαι, γεγράφηκα Πλίνθον **δὲ** τὸν κεφαλαιωτὴν μετὰ τῶν ἄλλων ἐπτὰ τυλαρίων [καταλαβεῖν(?)] τὴν πόλ[ι]ν (P.Cair.Masp.1.67067, ll. 2-4 (VI AD))

"And so that you may know and be care-free, I have written to Plinthos the headman with the other seven to (come down to) the city with the seven other *tularia* (cushions? mattresses?)."

In these two examples, apodotic δέ can be found after a causal clause introduced by ἐπεί, and after a purpose clause introduced by πρὸς τὸ/τῷ.

As Bakker (1993:283) notes, apodotic δέ 'has troubled classical philology'. A number of diachronic explanations have been proposed, which typically invoke the adverbial origins of δέ.[68] Such an explanation is also adhered to by Masyer (1934:132) when he writes with regard to the Ptolemaic papyri, 'da δέ ursprünglich die adverbielle Bedeutung "andererseits" hat, kann einem temporalen oder kausalen, hypothetischen oder relativen Vordersatz, sowie der partizipialen Kurzform eines Adverbialsatzes der

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[65] Denniston (1954:177) claims that apodotic δέ is only in Homer and Herodotus 'really at home' (compare also Probert 2015:415-416).
[66] Cf. Bonifazi (2015:259).
[67] For another example with ἐπεί, see P.Tebt.2.319, ll. 4-11 (248 AD). For an example with ἵνα, see P.Flor.2.173, ll. 7-9 (256 AD).
[68] See e.g. Kühner & Gerth (1976[1904]:275-277); Ruijgh (1971:647-648).

Nachsatz mit δέ nadrucksvoll gegenübergestellt worden.'[69] One problem noted by Probert (2015:416) is that while there are plenty of parallels for phonological reduction following a grammaticalization process, 'the use of the reduced form in the ungrammaticalized function would be very unusual'.

Recent, discourse-oriented studies take a different approach: Bakker (1993:282-284), for example, argues that δέ can be employed when it is necessary to overtly signal a switch of topic, even when this goes against strict grammaticality. In similar vein, Bonifazi (2015:261) and Bonifazi *et al.* (2016, IV.2), claim that δέ can be used as a boundary marker independently of syntactic status. Such a point of view corresponds to observations made in cross-linguistic studies. So, for example, Bertinetto & Ciucci (2012: 104) note that 'one hypothesis that comes to mind is that the para-hypotactic coordinators fulfill a demaracation function … what these devices have in common is their propensity to help the hearer parse the sentence into clauses: an important processing facilitation.'[70] In illustration, consider the following example:[71]

> (20) προσελθόντων δὲ τῶν Λακεδαιμονίων κατεστήκεέ σφι τειχομαχίη ἐρρωμενεστέρη. ἕως μὲν γὰρ ἀπῆσαν οἱ Ἀθηναῖοι, οἳ **δ**' ἠμύνοντο καὶ πολλῷ πλέον εἶχον τῶν Λακεδαιμονίων ὥστε οὐκ ἐπισταμένων τειχομαχέειν· (Hdt. 9.70.1-2)
>
> "Then when the Lacedemonians came up to attack it, there began between them a vigorous fight for the wall: for so long as the Athenians were away, they [the Persians] defended themselves and had much the advantage over the Lacedemonians, since these did not understand the art of fighting against walls." [tr. Macaulay]

Similarly to what we observed in (17), δέ is used in a main clause following a preposed subordinate clause. As Bakker (1993:283) notes, the use of the particle in the main clause is functional at a local level, since it has a disambiguating function, emphasizing that there is a switch of subject (the Athenians vs. the Persians). This function 'takes precedence over the hypotactic relation between the two segments linked' (Bakker 1993:283). From a somewhat more general point of view, Bonfazi (2015:260) finds that

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[69] Such proposals have also been made with regard to other languages (such as the Romance languages), where similar phenomena are attested. As Bertinetto & Ciucci (2012:104) note, 'the coordinators introducing the main clause may express (or gradually develop) the rhetorical role of an emphatic discourse marker'.

[70] A potential difficulty for this hypothesis, however, is that apodotic καί is also well attested (cf. Denniston 1954:308-309; compare the use of *et* in Latin, discussed in Galdi 2015).

[71] I borrow this example from Bakker (1993:282).

the use of apodotic δέ reflects 'the communicative need to combine the individual actions that individual clauses express'.

I am not entirely convinced that such discourse-oriented explanations can account for all of the occurrences, even for Classical Greek.[72] It is true that in all of our examples, (17), (18), (19), there is a switch of subject, but I don't see any pressing need for disambiguation. Stressing the individual actions of subordinate and main clause does not seem to be required, either. Probert (2015:420), based on a suggestion by Joüon & Muraoko (2006:608) for Biblical Hebrew, has recently suggested that the effect of apodotic δέ was primarily a slowing down of the pace, a suggestion which may better account for the attested examples, but which is evidently difficult to prove.

More definitely remains to be said about apodotic δέ. Two observations which have not been made are that (i) apodotic δέ also occurs in the μέν … δέ construction, as shown in (21). This compromises, to some extent, apodotic δέ's hypothesized 'boundary marking' function; (ii) the same phenomenon can also be found with other particles,[73] such as οὖν and τοίνυν,[74] as shown in examples (22) and (23).

(21)   καὶ ὅταν μὲν κατωθῆι εἰς μέτρι[α **δ']** ἀναβαίνει (P.Ammon.1.3, 3, 17 (348 AD))

    "And whenever everything abases him, he rises to moderate success." [tr. Willis & Maresch]

(22)   ἐπ[ει]δὴ οὐχ εὕρηκα ἐγὼ πέμψαι διὰ τὸ νωθρε[ύεσ]θαί με, καλῶς **οὖν** [π]οιήσεις τὰ σὰ μετέ[ωρ]α ἐκπλέ[ξαι τ]αχέω[ς] κα[ὶ] καταπλε[ῦ]σαι πρὸς ἐμέ (P.Mich.8.477, ll. 35-7 (II AD))

    "Since I have found no one to send because I am ill, you will therefore do well to conclude your business quickly and sail down to me." [tr. Youtie & Winter]

(23)   μ[ετὰ δὲ τὸ αὐτὸν] ἐφικέσθαι τῆς αὐτῆς μεγίστης ἡλικίας, ὡς ἔφ[η]ν, βού[λομαι **τοίνυν**] τὸ προειρημένον ληγᾶτον ἀποκοπῆναι (P.Cair.Masp.2.67151, ll. 297-299 (545/6 AD?))

    "Once he has reached the same high age, I want, as I said, the aforementioned *legatum* to be stopped."

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[72] Cf. also Probert (2015:418), who observes that 'it is difficult to see all classical examples of apodotic δέ as marking a topic shift, or indeed any sort of boundary whose marking is important enough to "take precedence over strict grammaticality"'.
[73] Compare Des Places (1929:53-54) with regard to Classical Greek
[74] For similar examples, see e.g. P.Flor.2.185, ll. 3-9 (254 AD); P.Mich.3.217, ll. 13-15 (296 AD); P.Cair.Isid. 126, ll. 8-10 (308/9 AD).

Whereas in (22) the use of οὖν "so" in the main clause underlines the semantics of the causal subordinate clause, the same cannot be said of (23), where τοίνυν is used after a temporal subordinate clause.

3.2.4   δέ linking a main clause and a postposed subordinate clause

In a brief discussion of the differences between preposed and postposed (adverbial) subordinate clauses, Bakker (1993:293-295) agrees with Thompson's (1985) observation that these two types of adverbial clauses are completely different: one of the most striking differences in Ancient Greek is 'the invariable presence of δέ with preposed adverbial clauses' (Bakker 1993:294), versus its complete absence with postposed adverbial clauses. While indeed represents a crucial difference for the Classical period, it no longer holds true for Post-classical Greek, a fact which has gone completely unnoticed. In cross-linguistic studies, too, such a phenomenon is not attested: as Bertinetto & Ciucci (2012:104) note, even though perfectly possible, the reverse order of main *clause – coordinator – subordinate clause* is not attested.[75]

In Post-classical documentary texts, δέ can, in fact, also be found with postposed subordinate clauses. In such cases, it no longer connects the adverbial and main clause, that is, the entire clause complex, to the previous sentence, but rather is operative at the clausal level, connecting the (postposed) adverbial clause to the main clause. Consider the following examples:[76]

(24)   καὶ] τὸ[ν] Κρονίωνα καὶ Ὀννῶφριν καὶ Ἥρωνα τὰς λοιπὰς ἀρούρας σὺν τῷ ἐπιβ[ά]λλ[οντι κ]αρ[π]ῶι τῶν ὄντων ἐν αὐταῖς φοινίκων, ἐφ᾽ ᾧ **δὲ** καὶ αὐτοὶ δώσουσι εἰς τ[ὸν] φόρο[ν] ἀργ[υρ]ίου δραχμὰς διακοσίας τεσσεράκοντ(α) (P.Mil.vogl.2.101, ll. 21-23 (118 AD))

"And Cronion and Onnophris and Heron the other arourai together with the harvest which falls upon them of the palmtrees in these [arourai], on condition that they themselves give two hundred forty drachmae of silver for the tribute."

(25)   ταῦτα δὲ πεποίηκεν εἰς ἀναπλήρωσιν τῶν τοῦ χρυσίου λιτρῶν πεντήκοντα καὶ τῶν τοῦ ἀργύρου λιτρῶν πεντακοσίων τῶν ἐπαγγελθεισῶν παρ᾽ αὐτῆς λόγῳ προικὸς ὥστε **δὲ** κατὰ πάντα φυλαχθῆναι ἰσότητα ἑκατέρῳ μέρει (SB.16.12230, ll. 2-5 (VI

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[75] Bertinetto & Ciucci (2012:104) argue that the absence of this order forms more of a problem for traditional hypotheses explaining 'apodotic' δέ as an emphatic discourse marker, than it does for hypotheses viewing it as a demarcation device facilitating processing.

[76] For similar examples, see e.g. P.Lond.4.1394, 15 (708-709 AD) (temporal); P.Flor.2.214, l. 12 (255 AD); P.Michael.46, l. 20 (559 AD); SB.3.7241, ll. 34-36 (710 AD); P.Apoll.57, l. 5 (708 AD); P.Lond.4.1394, l. 18 (708-709 AD); P.Lond.4.1349, ll. 35-36 (710 AD); (conditional).

AD))

"This he did to equal the fifty pounds of gold and the fourty pounds of silver which were offered by her by way of dowry so that equality in everything would be kept for each party."

(26) ἀπόστειλον πρὸς ἡμᾶς· εἴ τι **δ'** ἂν συνῆξας χρυσίον (P.Lond.4.1394, ll. 11 (708-709 AD))

"If you have brought together any gold, send it to us."

(27) ἐπετρέψαμε[ν]\γ[ὰ]ρ/ τῷ παρόντι ἀποστόλῳ μὴ δοῦναί σοι ἄνεσιν ἕως **δ'** ἂν εἰς πλῆρες ἐκπέμψῃς εἴ τί ἐστι διὰ τῆς διοικήσεώς σο\υ (P.Lond.4.1353, ll. 13-15 (710 AD))

"For we ordered to the present messenger not to give you indulgence until you fully send whatever comes from your district."

In these examples, δέ can be found in two types of postposed adverbial clauses: conditional clauses and temporal clauses. Although many of the examples can be found in Byzantine texts, the archive of Basil the Pagarch in particular, which is known for its syntactic innovations,[77] already at earlier times examples can be found.

Similar occurrences can be found with articular infinitives: so, for example, we find ἀνέγκλητοι μέχρι τοῦ νῦν γεγονότες διὰ **δὲ** τὸ μηδὲν ὀφείλειν "having been blameless so far because they are not bound to …" (P.Lond.2.354, l. 5 (10 BC)); ἀλλ(ὰ) ἐπὶ τῷ **δέ** σε ἐξουσιάζειν λαβεῖν καθ' ἔτος ἀρούρας δύο κτλ. "but on condition that it is possible for you to take every year two *arourae* etc." (P.Vat.Aphrod.1, ll. 21-22 (598 AD)); καὶ ἐπὶ τῷ **δὲ** ἐμὲ ἀνάξω σοι μικρὸν ἄκ[α]νθον ἀπὸ τοῦ αὐτοῦ χώματος "and on condition that I bring you a small acanthus from the same earth" (P.Vat.Aphrod.1, l. 39 (598 AD)).

Cases such as these should not be confused with those where a subordinate clause containing δέ also occurs after a main clause, but is followed by a second main clause, with which it is connected more narrowly:[78]

(28) τοῦ δὲ χρόνου πληροθέντος ἀποδώ(τω) <ὁ> ὁμολογῶν τὰς προκιμ(ένας) ἀργ(υρίου) (δραχμὰς) τεσσαράκοντα ὀκτὼι, ἐὰν **δὲ** μὴ ἀποδῶ, ἀποτισάτω μεθ' ἡμιολίας καὶ τόκω(ν) καὶ ἐπίτιμον ἄλλας ἀργυρίου δραχμὰς ἑκατὸν καὶ εἰς τὸ δημό(σιον)<τὰς ἴσας> (P.Mich.10.587, ll. 34-37 (24/25 AD))

"And at the expiration of the period the party of the first part shall return the above-mentioned forty-eight drachmai of silver, and if he does not return them, let him pay

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[77] See further Bentein (2017), with references.
[78] For similar examples, see e.g. P.Mich.5.333, l. 17 (52 AD); P.Kron.17, ll. 18, 24, 30 (140 AD).

them increased by half, and with interest, and a fine of an additional one hundred drachmai and the same amount to the treasury."

Another type of postposed subordinate clause where δέ can be found is relative clauses. As the following examples show, this concerns two main types of relative clauses: (i) non-restrictive relative clauses, and (ii) generalizing relative clauses.

(29)   [ἵν' ὑ]γιαίνῃς ὃ **δὲ** μέγιστον [ἡγοῦμαι] (BGU.16.2659, ll. 12-13 (30 BC – 14 AD))

"So that you may be healthy, which I consider to be most important."

(30)   ἐλ[ογ]οποήσαμην πρὸς Ὀννῶφριν Σίλβωνος τῶν ἀπὸ τῆς κώμης ὑπὲρ οὗ ἔχω πρὸς αὐτὸν ἐνεχύρου, ὃς **δὲ** ἐκ τοῦ ἐναντίου ἄλογον ἀηδίαν μοι ἐπιχειρήσας παρεχρήσατό μοι πολλὰ καὶ ἄσχημα (P.Ryl.2.144, ll. 10-18 (38 AD))

"I entered into conversation with Onnophris son of Silbon, an inhabitant of the village, concerning a pledge I have against him, whereupon he opposing me made a brutal and odious attack upon me and subjected me to much shameful mishandling." [tr. Johnson *et al.*]

(31)   ἐφ' ᾧ με το(ῦ)το ἔχειν ὑπ' ἐμὲ εἰς οἴκησίν τε καὶ χρῆσιν ἐφ' ὀν**δ**αν βούλεσθε χρόνον (P.Ross.Georg.3.38, ll. 17-19 (ca. 570 AD))

"On condition that I have the property in my possession to live in it and use it for as long as you want."

Whereas the use of δέ in postposed non-restrictive relative clauses, as in (29) and (30), is relatively infrequent, its use in generalizing relative clauses,[79] as in (31), is quite well attested,[80] especially in Late Antique texts.[81] Following Jannaris (1897:404-405), I would argue that δέ[82] in such examples has been inserted under the influence of adverbial καί,[83] which was common in generalizing relative clauses. I'll have more to say about the close interrelationship between these two particles in §4, where I discuss the factors motivating the extension of δέ.

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[79] On this usage, see also Ljungvik (1932:17-18). Tabachovitz (1943:29) notes that some examples can already be found in the Classical period, but that they are very few, and too doubtful to draw any conclusions from.

[80] For similar examples, see e.g. P.Dubl.32, ll. 5 & 9 (512 AD); P.Cair.Masp. 3.67340r, ll. 44-45 (VI AD); P.Apoll.46, l. 6 (703-715 AD); P.Lond.4.1344, ll. 16-18 (710 AD).

[81] I can find no examples of postposed generalizing relative clauses containing δέ from the Roman period. For examples of preposed relative clauses, see e.g. P.Mich.5.350, l. 16 (37 AD); P.Mich.10.583, l. 22 (78 AD); P.Mich.5.355, l. 12 (I AD); P.Fam.Tebt.27, ll. 18-19 (132 AD); P.Kron.50, l. 12 (138 AD).

[82] Tabachovitz (1943:28) notes that the particle mostly occurs in its truncated form δ', which some people interpret as δή. Some papyri, however, have the full form δέ. See e.g. P.Dubl.33, l. 19 (513 AD).

[83] For an alternative hypothesis, see Tabachovitz (1943:28) and Youtie (1973:116), who argue that δαν is in origin the second half of ἐπειδάν.

3.3 Phrasal coordination

In our corpus, we see that δέ is also used at a lower syntactic level than the sentence or clause. To be more specific, it is used for appositions.[84] These are some examples:[85]

> (32) εὐδοκοῦσι δ]ὲ ἡ τοῦ Ἁρμιυσις γυνηι, τοῦ **δὲ** Μιεῦτος μήτηρ, Στουθουῆτις Ὀρσενούφ[ιος μη]τρὸς Θερμοῦθις καὶ ἡ τοῦ [Μιεῦτος] [γυν]ηι Ταρμιῦσις Φανεμιεῦτος μητρὸς Τεναῦτος (P.Mich.5.299, ll. 8-10 (I AD))
>
> "The wife of Harmiysis, who is also the mother of Mieus, Stoutouetis, daughter of Orsenouphis, her mother being Thermouthis, and the [wife of Mieus], Taarmiysis, daughter of Phanemieus, her mother being Tenaus … consent] to the sale."
>
> (33) ὁμολογοῦμεν πεπρακέναι καταὶ ἀγυπτίας συνγραφὰς Ὥρου Ἁρμιύσιος μητρὸς Θαρμούθειος τον ὑπάρχοντα τῶι Ἁρμιυσις πατρὶ ἡμυσον μέρος οἴκεας διστέγου καὶ αὐλῆς ἐκ τοῦ πρὸς βορᾶ μέρους, παντα **δὲ** κοινῶν καὶ διερέτων κτλ. (P.Mich.5.299, ll. 1-3 (I AD))
>
> "[We] acknowledge that we have sold in accordance with the Egyptian contracts to Horos, son of Harmiysis, his mother being Thermouthis, the half share that belongs to Harmiysis the father, on the north side, of a two-story house and a courtyard, all common and undivided etc."

Morley (2000:166) recognizes three semantic relationships for noun-phrase apposition: 'equivalence' (e.g. 'Bill Hovis, the baker, is the winner'), 'attribution' (e.g. 'Dr Bishop, a good administrator, will chair the meeting'), and 'inclusivity' (e.g. 'many of the players, for example Jack and Dave, just won't be there'). The examples from the documentary corpus fall under the first two labels: in (32), for example, the wife of Harmiysis is equated with the mother of Mieus, whereas in (33), a house and courtyard are attributed the property of being common and undivided. Note that in both cases, we are dealing with what Morley (2000) calls 'non-restrictive' apposition, in contrast with 'restrictive' apposition.[86]

As Morley's (2000:182) definition of apposition indicates – 'apposition is said to occur when two or more grammatically parallel and normally contiguous entities have identity

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[84] For this use, compare Denniston (1954:163); Bakker (1993:296); Bonifazi (2016, IV.2 §19).
[85] For similar examples, see e.g. P.Mich.5.300, ll. 4-5 (I AD); P.Mich.5.303, l. 5 (I AD); P.Mich.5.350, ll. 5-6 (37 AD); P.Flor.2.127, ll. 11-12 (256 AD).
[86] Contrast e.g. 'Mr Campbell, the lawyer, was here last night' with 'Mr Campbell the lawyer, was here last night'.

of reference' – apposition is in principle not limited to the lower syntactic levels. In illustration, consider the following examples:[87]

(34) ἄξω δὲ τοῦ μὲν ἀμπελ[ῶνος τὰ] κᾳθήκοντα ἔργα πάντα τούς τε χωματισμ[οὺς] καὶ [ποτισ]μοὺς καὶ δ[ιβολ]ητοὺς καὶ τὰ τῶν ἀρουρῶν γεωργικ[ὰ] ἔρ[γα πάν]τα τούς [τε χω]ματισμοὺς καὶ π[ο]τ[ισ]μοὺς καὶ σπ[οράς καὶ βο]τανισμοὺς καὶ τὴν ἄλλην γεωργικὴν ὑπουργίαν πᾶσαν, [πάντα] **δὲ** ἐν τοῖς δέουσι καιροῖς ἐκ τοῦ ἰδίου βλάβος μηθὲν ποιῶν (P.Soter.3, ll. 18-23 (89/90 AD))

"I will perform all the necessary works in the vineyard (construction of dykes, irrigation, and harrowing) and all agricultural work of the arourae (construction of dykes, irrigation, sowing, weeding, and all other agricultural labor), doing everything on the right moment with my own means without causing any harm."

(35) [ἐφ' ᾧ] με τὴν πᾶσαν γεωργικὴν [ἐργασίαν ποιήσασθαι ἐκ τ]ῶν ἰδίων μου ζῴων [καὶ ἀναλωμάτων ἄνευ κατα]φρονήσεως καὶ ἀμελίας, [τῆς **δὲ** σπερμοβολίας δ]ιδομένης παρ' ἐμοῦ (P.Heid.5.351, ll. 7-10 (534/535 AD))

"Unter der Bedingung, dass ich die gesamte bäuerliche Arbeit erledige unter Einsatz meines eigenen Zugviehs und auf eigene Kosten, ohne Geringschätzung und Nachlässigkeit, wobei das Saatgut von mir geliefert wird." [tr. Jördens]

(36) [ὁμολογεῖ Δίδυμος νε]ώτερος Λυσιμάχου, ὡς (ἐτῶν) μα, εὐμεγέθης μελίχρως, οὐλὴ ἀντικνημίωι δεξιῶι,[τῇ ἑαυτοῦ] γυναικὶ οὔσῃ **δὲ** καὶ ὁ[μο]πατρίωι καὶ ὁμομητρίωι ἀδελφῇ Ἡροῖ κτλ. (P.Mich.5.262, ll. 1-2 (35-36 AD))

"[Didymos] the younger, son of Lysimachos, about 41 years old, tall, with honey-colored skin, with a scar on his right shin, acknowledges to his wife, Hero, who is also his sister on both his father's and his mother's side etc."

In (34), the participial clause with ποιῶν forms an apposition to the entire preceding clause. The same can be said for (35), where a genitive absolute is used rather than a conjunct participle.[88] In (36), too, δέ accompanies a participial clause, forming, however, an apposition to the noun phrase [τῇ ἑαυτοῦ] γυναικὶ.

Semantically, Halliday & Matthiessen (2014: 462-462) have proposed three major types of apposition at the clause level. These are called 'exposition', where the secondary clause restates the thesis of the primary clause in different words (e.g. 'I really enjoyed it, I thought it was good'), 'exemplification', where the secondary clause develops the thesis of the primary clause by becoming more specific about it (e.g. 'you're too old for

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[87] For similar examples, see e.g. P.Mich.5.355, l. 10 (I AD); P.Mich.5.262, l. 2 (35-36 AD); P.Mich.5.266, ll. 13-14 (38 AD); P.Kron.11, l. 9 (121 AD); P.Flor.2.185, ll. 14-15 (254 AD) (conjunct participle); P.Lond.5.1841, ll. 18-19 (536 AD) (genitive absolute).

[88] For the genitive absolute with the nuance of 'attendant circumstance', see e.g. Smyth (1984[1920]:460). It is interesting to note that nominatival participles start to be used where a genitive absolute would be used. Contrast e.g. P.Oxy.10.1276, l. 2 (249 AD) with P.Tebt.2.378, l. 3 (265 AD). In both of these cases, δέ is used.

that game, you couldn't bend over'), and 'clarification', where the secondary clause clarifies the thesis of the primary clause (e.g. 'they used to work over here, that's how they met'). All of the examples I have encountered in the documentary corpus are of the second and third type.

Interestingly, we see that the use of δέ at the lower syntactic levels is not limited to apposition. Consider the following two examples:

(37) ἐπεὶ κατήντησεν εἴς τε τὸν Αὐρηλίον Σαραπάμμωνα καὶ Λούριον κατὰ διαδοχὴν κληρονομίας σιτικὰ ἐδάφη περὶ κώμην Κερκευσεῖριν τοῦ Ἀρσινοίτου νομοῦ τῆς Πολέμωνος μερίδος ἐν δυσὶ σφραγεῖσι ἄρουραι ἑπτὰ περὶ **δὲ** κώμην Τεπτῦνιν τῆς αὐτῆς μερίδος ἐν τόπῳ ἐπικαλουμένῳ Καρίωνι ὁμοίως (ἄρουραι) ζ περὶ **δὲ** κώμην Κερκῆσιν (ἄρουρα) α, ἐπὶ τὸ αὐτὸ (ἄρουραι) ιε, αἵ γε μέχρι νῦν ἦσαν ἀδιαίρετοι, ἔδοξεν δὲ νῦν αὐτοῖς ταύτας δι[αιρή]σασθαι κτλ. (P.Tebt.2.319, ll. 4-11 (248 AD))

"Whereas Aurelius Sarapammon and Lourios have come by succession of inheritance into possession of grain lands about the village of Kerkeosiris in the division of Polemon in the Arsinoite nome, viz. 7 arouras in two parcels, and near the village of Tebtunis in the same division in the place called Karion 7 arouras likewise, and near the village of Kerkesis 1 aroura, making a total of 15 arouras, which have hitherto been undivided, and they have now decided to divide these etc." [tr. Grenfell & Hunt]

(38) περὶ Πατσῶντ[ι]ν βασιλικῆς γῆς [ἀρούρας][τέσσα]ρες ἐν τρισὶ σφραγῖσι ὧν ἐστιν ἡ πρώτηι ἐν τῶι Σ[τ]ρα[τη]γικῶι ἀρουρῶν [δύο] [τ]ετάρτου, ἡ **δὲ** δευτέρα ἐν τοῖς Γεείνοις ἀρούρης μιᾶς, ἡ **δὲ** [τ]ρίτηι [ἐ]ν τῆι Τατνο[ύε]ι [ἀρούρης] ἡμίσους τετάρτ[ου][κ]αὶ τὰς τῆς Ἀνθιανῆς οὐσίας ἀρούρας δύο ἥμισυ (P.Mich.9.557, ll. 17-19 (116 AD))

"... four arourai of royal land near Patsontis in three parcels, of which the first is of [two and] one-quarter arourai in the Strategikon, the second is of one aroura in the Geeina, and the third is of one-half and one-quarter [arourai] in Tatnouis, and the two and one-half arourai of the Anthian estate." [tr. Husselman]

In both of these examples, δέ is used in lists: in (37), the property of a certain Sarapammon and Lourios in different villages is listed, whereby δέ connects the different villages: περὶ κώμην Κερκευσεῖριν, περὶ δὲ κώμην Τεπτῦνιν, περὶ δὲ κώμην Κερκῆσιν. In (38), three parcels of land are listed, with δέ linking the different parcels: ἡ πρώτηι; ἡ δὲ δευτέρα; ἡ δὲ [τ]ρίτηι. In Classical Greek, such lists are typically constructed through the use of the μέν ... δέ construction.[89]

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[89] See e.g. Denniston (1954:369-384); Lambert (2003); Bentein (forthc.). Another, interesting list, which is too long to reproduce here, can be found in P.Muench.1.8 (ca. 540 AD), where property that is to be gifted is listed. In ll. 11-13, such property is co-ordinated through καί: τὸ ἥμισυ μέρος τῆς κέλλας μου ... καὶ τὸ ἥμισυ μέρος τοῦ συμποσίου ... καὶ τὸ ἥμισυ μέρος τοῦ ἀέρος. After a brief interruption in ll. 13-15, however, the author continues listing his property through δέ (ll. 15-20): τὴν δὲ αὐτὴν κέλλαν καὶ τὸ

Occasionally, one encounters the use of δέ to coordinate noun phrases outside of lists.[90]
Consider the following examples:

(39)   ἅσπερ ἐπάναγκαν ἀποδώσω σοι ἐνπ[ρ]όθεσμος μηνὶ Παῦνι [τ]ῆ[ς] τ[ρ]ί[τη]ς
         [ἱ]νδικ(τίονος) [με]τ' ἐγγύου Ἥρωνος Ὁλ μέτρῳ τετραχοινίκῳ δικαίῳ τὸ **δὲ** γένος
         νέον καθαρὸν ἄδολον εὐάρεστον ἀνυπερθέτως (P.NYU.1.22, ll. 9-14 (329 AD))

         "… which I, with Heron son of Hol as surety, am under obligation to repay to you
         without delay within the appointed time in the month of Payni of the third indiction,
         using the legal four-choinix measure, and in quality fresh from the harvest, free from
         dirt, unadulterated, and in good condition."

(40)   οὐκέτι δὲ ἐφρόντεισεν τὸ σὸν μέγεθος περὶ τοῦ ταπιτιούχου πώλου τῆς σῆς **δὲ**
         μεγαλοπρεπείας δούλου Μακαρίου (P.Oxy.1.155, ll. 9-10 (VI AD))

         "Your highness has no longer shown care for the caparisoned colt (?) and the slave
         of your magnificence, Macarius." [tr. Grenfell & Hunt]

In both of these examples, δέ co-ordinates noun phrases: μέτρῳ τετραχοινίκῳ δικαίῳ
and τὸ γένος in (39), and τοῦ ταπιτιούχου πώλου and μεγαλοπρεπείας δούλου
Μακαρίου in (40). It is worth noting that in both cases the conjuncts do not habitually go
together and do not form a conceptual unit, and that we are therefore dealing with
'accidental', rather than natural conjunction.[91] Still, these are uncommon usages from a
Classical point of view.[92]

3.4   δέ not apparently linking anything

To conclude, it is interesting to observe that δέ is not always used as a linking device in
Greek documentary texts. This is not recognized in traditional accounts, which typically
focus on δέ's connective and apodotic uses.[93] Consider the following example:

(41)   Ἡρώδης ὃς καὶ Ἡρακλείδης Λυσιμάχου ὁμολογῶι παρακεχωρηκέναι Εὐδεμονίτι
         Ἡρώδου κατὰ **δὲ** τὴν ὁμολογίαν ταύτην ἀπὸ τῆς ἐνεστώσης ἡμέρας ἐπὶ τὸν ἄπαντα

ἐπάνω αὐτῆς συμπόσιον … τὴν δὲ αὐτὴν κέλλαν διακειμένην ἐπὶ τὴν Συήνην … τὸ δὲ ἄλλο ἥμισυ μέρος
τῶν προδεδηλουμένων τόπων.

[90] This does not include examples such as P.Oxy.49.3464, ll. 22-23 (ca. 54-60 AD); P.Mich.3.184, ll. 20-21
(121 AD); P.Kron.34, l. 29 (134 AD); P.Mil.Vogl.6.271, l. 6 (141 AD); P.Phil.14, ll. 24-25 (155/156 AD);
P.Cair.Isid.99, l. 9 (297 AD) (compare Ruijgh 1971:131). Such examples may have played a role in the
development of δέ as a noun phrase coordinator, though.

[91] Cf. Viti (2006:130-131, 2008:46-55); Haspelmath (2007:23). Typical examples of natural conjunction
are 'mother and father', 'husband and wife', 'boys and girls', etc.

[92] In (39), τὸ δὲ γένος could, perhaps, be interpreted as appositive. The same claim cannot be made for
(40), however. For similar examples of noun phrase coordination, see e.g. P.Hever, l. 1 (131 AD);
P.Stras.1.30, l. 13 (276 AD); P.Sakaon.71, l. 9 (306 AD); SB.20.14626, l. 19 (VI AD).

[93] Compare e.g. Mayser (1934:125-129); Denniston (1954:162): 'except in the apodotic use, δέ is always a
connective'.

χρόνον τὴν ὑπαρχουσα μοι μητρικὴν παιδισκης δούλην κτλ. (P.Mich.5.281, ll. 1-3 (I AD))

"I, Herodes, also called Herakleides, son of Lysimachos, acknowledge that I have ceded to Eudaimonis, daughter of Herodes, in accordance with this agreement, from the present day forever, the female slave etc." [tr. Husselman]

δέ is used in the first line of a contract of sale. The particle does not link anything, and has no apparent boundary-marking function, except for the fact that it is used with an adjunct. Also note that the particle is not used in its usual position, that is clause-second, even though it does occur in second position inside the word group κατὰ τὴν ὁμολογίαν.

The following example, from a fourth-century contract, is similar in nature:

(42) ὁμολογεῖ Αὐρηλία Ταμάλεις Ἀτρῆς μητρὸς Ταπάειτος ἀπὸ κώμης Καρανείδος ὡς ἐτῶν τριάκοντα οὐλὴ καρπῷ χειρὸς δεξιᾶ[ς] ἔχειν κ[α]ὶ μεμαιτρῆσθε παρὰ Εὐτροπείου Ἀρχεία τῆς Ἀρσινοει[τ]ον πό[λεω]ς διὰ Ποῆριν προνοητοῦ πυροῦ σὺν εἰμιολειας ἀρτάβ[α]ς λη ἄσπερ ἐπάναγκον ἀποδώσιν αὐτὴν **δὲ** τὴν ὁμολογοῦσαν ἐν προθεσμεὶ κτλ. (P.Col.7.176, ll. 1-9 (325 AD))

"Aurelia Tamaleis, daughter of Hatres and Tapaeis, from the village of Karanis, about thirty years old, with a scar on the wrist of the right hand, acknowledges that she has received and has had measured out to her from Eutropios, son of Archias, inhabitant of the city of the Arsinoites, through his agent Poeris, 38 ½ aratabas of wheat including the additional one-half, which she, the acknowledging party is of necessity to repay without delay on the appointed day etc." [tr. Bagnall & Lewis]

Again, δέ does not link anything and has no apparent boundary-marking function. It is not used in its usual, clause-second position, although it does occur in second position inside the word group αὐτὴν τὴν ὁμολογοῦσαν.

Mayser (1934:179) draws attention to a similar use of δέ, namely immediately after the introductory formula. Consider the following two examples:

(43) Πετεσοῦχος Μαρρήους γ[εωρ]γὸς τῶν ἐκ Κερκεσήφεως {[εω]ς} Μαρρῆτι Πετοσείριος τῷ[.] [-ca.?-] καὶ ἀδελφῷ χαίρειν. γείν[ωσ]κε **δὲ** περὶ τοῦ κατακεκλῦσθαι τὸ πεδίον ὑμῶν καὶ οὐκ ἔχομεν ἔως τῆς τροφῆς τῶν (?) κτηνῶν ἡμῶν (P.Tebt.1.86, ll. 1-8 (II BC))

"Petesouchus son of Marres, cultivator at Kerkesephis, to Marres son of Petosiris . . . his brother greeting. Know that our plain has been flooded and we have not so much as food for our cattle." [tr. Hunt & Edgar]

(44) Ζήνωνι χαίρειν Πετενοῦρις Σαμῶυς οἱ ὑοφορβοί. Δεόμεθα **οὖν** σου, ἐλέησον ἡμᾶς (P.Cair.Zen.3.59495, ll. 1-2 (III BC))

"To Zenon greetings Petenouris and Samous the swineherds. We ask you, show mercy to us."

In (43), the particle is used with γε̣ίν̣[ωσ]κε right after the address. As Mayser (1934: 179) observes, a connective particle is not required in this context, 'da die Formeln (ursprünglich im Munde des Briefboten oder auf der Adresse) vom Inhalt des Schreibens abgetrennt sind'. As (44) shows, we find similar occurrence with other particles, such as οὖν.[94]

In some other examples, δέ ... δέ is used to co-ordinate two constituents. From a Classical point of view, the first δέ is superfluous, and the second δέ should follow either μέν, or be replaced by καί. So, for example:

(45)　[κ]αὶ εἶναι πρὸς [ἐ]μὲ τὸν Κρονίωνα, τὸ **[δ]ὲ** κτάμιον, εἰς κατανέμησι[ν] ὧν ἐὰν [αἱ]ρῶνται θρεμμά[των] τὰ **δὲ** ἐκφόρια καὶ φόρους ἀνυπόλ[ογ]α καὶ ἀκίν[δυ]να (P.Kron.34, ll. 24-26 (134 AD))

"ed è a carico di me, Kronion, il ktamion (per il pascolo di qualsivoglia animale) e gli affitti in natura e in denaro, al netto e senza rischio." [tr. Foraboschi]

To these usages we can compare another, so far undocumented usage, namely the use of δέ at the beginning of a new structural part of documentary texts. For example, in P.Cair.Masp.1. 67002, a sixth century petition, δέ is used at the beginning of the request (δεόμεθα δὲ ὑμῶν (2, l. 1)), which is visually set apart from the remainder of the text by a cross. Similarly, in P.Muench.1.1 (δῆλον δὲ ὅτι ἐδεξάμεθα παρὰ σοῦ νομισμάτιον ἐν ζυγῷ Συήνης, l. 53), δέ is used in a post-script following a cross. In P.Cair.Masp.3.67300, a sixth-century contract, δέ is used after the postscript following a *Pax Christi* sign (ἔχω δὲ το(ὺ)[ς] φοινίκους (l. 18)). Another example can be found in P.Cair.Masp.1.67005, a sixth-century petition, where δέ is used at the start of the actual contents, after the introductory phrases (διδάσκω [δ]ὲ τὸ πάντιμον ὕψος ὑμῶν (l. 9)), and is preceded by a cross.[95]

Occurrences of what has been called 'inceptive' δέ can already be found in the Classical period, Herodotus and Xenophon in particular. While Denniston (1954:172) has argued that 'the object is, no doubt to give a conversational turn to the opening ('Well')', Verdenius (1974:173) has argued that the use of δέ in such cases is best explained as emphatic, δέ forming a weak form of the modal particle δή. Most recently, Bonifazi *et al.*

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[94] On this use of οὖν in documentary texts, compare Bentein (2016b:90).
[95] Contrast with P.Mich.13.667, ll. 43-45 (VI AD), where δέ is also used after a *Pax Christi* sign, but the sentence is quite narrowly connected to what precedes. The placement of the sign may be a mistake by the scribe (compare e.g. with P.Michael.40 (VI AD)).

(2016, IV.2 §34) have claimed that the use of δέ at the beginning of discourse acts can be seen as a way of discourse discontinuity, too.

4 Motivating the extension of δέ

In the preceding section, I have attempted to show that the use of δέ was extended in various ways in Post-classical Greek, documentary texts in particular. Before concluding this article, it is worth turning our attention to the factors which may have contributed to such an extension. In itself, it is not uncommon for co-ordinating conjunctions such as δέ to extend to other syntactic ranks.[96] In Ancient Greek, however, it seems that a number of elements played an enabling role in this regard. I've already hinted at the possible role played by the particle combination μέν ... δέ, and studies on other particles, too, have noted that subordination and coordination strategies (conjunctions in particular) were often mixed in documentary texts.[97] Another element may be the role of chunking: writers often employed memorized idiomatic expressions.[98] When these expressions were employed in slightly different contexts, elements such as particles were easily overextended. For example, in P.Oxy.45.3255, a fourth-century lease of land, we find the phrase γεινομένης σοι τῆς πράξεως παρά τε ἐμοῦ ὡς καθήκει "you have the right of execution on me as is proper", where τε has no apparent function, but has been inserted because the more regular expression is ἐκ/παρά τε ἐμοῦ καὶ τῶν ὑπαρχόντων μοι πάντων.[99] Language contact, too, may have played a role, too, although Reintges (2001) claims that the Coptic loan particle ϫⲉ 'displays almost identical discourse-organizing and text-creating functions as the Greek model dé'.[100]

One element that, to my mind, played a major role is the existence of two other major co-ordinating conjunctions in Ancient Greek, τε and καί, which functioned similarly to δέ.[101] Although δέ was syntactically quite 'versatile', as Bonifazi *et al.* (2016, IV.2 §14) have

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[96] Cf. Mithun (1988:349-351), esp. p. 350, where she notes that co-ordinating conjunctions can spread from noun phrases to predicates and clauses, or the other way around.

[97] See Bentein (2016b:99-100), and compare also Mayser (1934:98-114).

[98] Cf. Leiwo (2005:255), who notes that 'when idiomatic expressions are not available, the writers usually had a greater or lesser degree of difficulty in expressing themselves.'

[99] Compare e.g. P.Oxy.2.267, ll. 15-16 (36 AD). For a similar example, see e.g. P.Mil.Congr.xiv.pg64 (44 AD), l. 37.

[100] Reintges (2001:220). I leave this point open for further research.

[101] As for δέ, another type of confusion can perhaps explain the syntactic extension of the particle, namely that with the modal particle δή. For example, we see that in BGU.16.2659 (ca. 21 BC – 5 AD), a private letter from the archive of Athenodorus the *dioikêtês*, δέ is used instead of δή in the final health wish ἵν' ὑ]γιαίνῃς ὃ δὲ μέγιστον [ἡγοῦμαι] "so that you are healthy which I consider most important", whereas in all the other letters δή is used in this context. For a similar example, see P.Kell.1.72, l. 46 (IV AD).

recently argued, both τε and καί were even more so, and could be used to link elements at all syntactic ranks, including sentences, clauses, and noun phrases (including the apodotic uses discussed in §3.2.3).[102] In Classical Greek, there was, to some extent, a complementary distribution between these three particles: τε was primarily used at the lower syntactic ranks,[103] while καί and especially δέ were employed at the higher syntactic ranks. Whereas δέ was in the first place used for thematic discontinuity ('transitory additive extension'), as we have seen in the introduction, καί was primarily used for thematic continuity ('combinatory additive extension'). Viti (2006, 2008) furthermore observes a distinction between τε and καί when it comes to phrasal coordination, noting that τε is primarily used for 'natural' coordination, whereas καί is primarily used for 'accidential' coordination.[104] Even at the clausal/sentential domain, there appears to be a significant distinction between τε and καί, the former being primarily used for 'symmetric' coordination,[105] and the latter primarily for 'asymmetric'[106] coordination.[107]

In Post-classical Greek, however, this entire system is thoroughly disturbed, because of the gradual disappearance of τε.[108] As Jannaris (1897:401) notes, 'the close affinity or synonymy of the two conjunctions καί and τέ, the unqualified preponderance of καί through all classical antiquity over its associate, and its greater suitability in construction as a prepositive, were advantages which could not but determine the fate of τέ.'[109] As Elliot (1990) notes, in the New Testament already, there are almost no

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[102] From a typological point of view, this is quite uncommon: as Haspelmath (2007:21) notes, 'the use of different formal means for expressing NP conjunction and event conjunction is probably the majority pattern in the world's languages.' In many of the European languages, however, the word for 'and' is used for both purposes. Haspelmath (2007:21) notes that disjunctive coordinators are much less sensitive with respect to the syntactic-semantic type of the coordinands.

[103] See e.g. Viti (2008:51-52).

[104] Viti (2008:50-55) argues that there is a statistically significant relationship between stressed conjunctions and accidendal coordination and clitic conjunctions and natural coordination in the Indo-European languages that have two coordinators (e.g. Latin, Greek, Indo-Iranion).

[105] With symmetric co-ordination, there is temporal overlap between two clauses, as in 'Mary prepares the coffee and John cooks pancakes'.

[106] With asymmetric co-ordination, there is no temporal overlap between two clauses, as in 'John studied much and passed the exam.'

[107] Cf. Viti (2008:55-58).

[108] Jannaris (1897:401) argues that τε started to disappear as early as Post-classical times (that is, 300 BC).

[109] Both elements in Jannaris' explanation have been elaborated upon in recent years. With regard to word order, for example, Haspelmath (2007:9) notes (specifically with regard to noun phrase coordination), 'languages with a postpositive coordinator (such as Latin and Classical Tibetan) tend to have verb-final word order, whereas verb-initial languages tend to have a prepositive coordinator' (compare Stassen 2001:1107). As for semantics, Viti (2006:159) observes that 'when the difference in meaning between

examples of free-standing τε. The particle can only be found in the phrases τε καί or τε … καί, or in words such as οὔτε, μήτε, and εἴτε. Although δέ, too, eventually disappeared from the Greek language, it did so at a much later time.[110] I hypothesize that this restructuring of co-ordination in Post-classical Greek caused considerable confusion among the speakers of Greek, leading among others to the extension of δέ to syntactic ranks which previously were previously reserved for τε and καί.[111] Such confusion also explains the insertion of δέ where it is not needed.[112]

Evidently, the identification of δέ with τε was also stimulated by the ongoing phono-logical changes, in particular the pronunciation of the consonants. As Gignac (1976:156) notes, 'γ and δ interchange very frequently with κ and τ respectively, and β interchanges occasionally with π'. In quite a few papyri, we see confusion between the two particles: an expression such as ἐφ' ᾧ "on condition that", for example, is combined with both δέ and τε in our corpus. We can compare in this regard ἐ[φ' ᾧ] τε ταῦτα εἶναι ὑπὸ τὴν σὴν ἐξουσί[α]ν "on condition that this remains under your authority" (P.Lond.5.1737, ll. 16-17 (613 AD)) with ἐφ' ᾧ δὲ ὑμᾶς λαβεῖν τὸ μέρος ὑμῶν ἀπὸ τοῦ πεφιλοκαλημένου "on condition that you receive your share in proportion to the yield of (?) the properly cultivated part" (tr. Crawford) (P.Michael.46, l. 20 (559 AD)). We see that τε is used in contexts that are typical for δέ: so, for example, we find ἀπὸ παντὸς τοῦ ὑπερευσομένου ἢ ἀντιποιησομένου ὑπέρ **δε** τοῦ ἡμῶν ὀνόματος ἢ ἰδιωτικοῦ χρέους ἢ δημοσίου ὀφλέματος ἢ ἄλλου τινὸς (P.Paris.21, ll. 42-44 (616 AD)) "against anyone who will preceed against or will contend in our name or for a private or state debt or anything

competing coordinators fades away, the form devoted to accidental or asymmetric coordination generalizes at the expense of the form expressing natural or symmetric coordination.' As Viti (2006:159) points out, in Latin, too, only *et* is preserved.

[110] Jannaris (1897:402) argues that δέ 'lingered down to B[yzantine] times', that is, the period from 600 to 1000 AD. Probert (2015:418-419), referring to Jannaris, claims that δέ 'has probably dropped out of informal use by the early centuries AD.' Tonnet (1987:140) finds that δέ only became uncommon in the fourteenth century. He suggests that it was avoided because of the development of the new negation δέ(ν) (from οὐδέν).

[111] Compare Bentein (2017) on the semantic extension of prepositions in Post-classical Greek.

[112] Although δέ, too, eventually disappeared from the Greek language, it did so at a much later time: Jannaris (1897:402) argues that δέ 'lingered down to B[yzantine] times', that is, the period from 600 to 1000 AD. Probert (2015:418-419), referring to Jannaris, claims that δέ 'has probably dropped out of informal use by the early centuries AD.' Tonnet (1987:140) finds that δέ only became uncommon in the fourteenth century. He suggests that it was avoided because of the development of the new negation δέ(ν) (from οὐδέν).

else", where τε would have been expected.[113] Conversely, we also find μέν … τε next to μέν … δέ.[114].

Editors sometimes correct forms of τε and δέ, but it can, on occasion, be very hard to decide between the two. When there is no evidence of confusion between consonants in a text, and τε and δέ are both used, I would argue in favor of not correcting the particles. One also has to take into account that novel usages and formations may develop. One such formation is δὲ καί.[115] Mayser (1934:132) claims that this is not a 'real' particle combination, arguing that καί means "also" and always belongs to the following word. While this may be true for the Ptolemaic papyri, in texts from later periods we see that δὲ καί does develop as an independent particle combination.[116] For example, this particle combination can be found quite regularly in the sixth century-archive of Dioskoros, as illustrated in (46):

(46)   βούλομαι **δὲ καὶ** κελεύω τοὺς ποθεινούς μου υἱοὺς τὴν περιστολὴν ἤτοι κηδείαν κατ᾽ ἀξίαν ἐμὴν τοῦ ἐμοῦ σώματος ποιῆσαι (P.Cair.Masp.2.67151, ll. 160-162 (545/546 AD?))

"I want and order that my dear children do the laying out and the funeral of my body according to my dignity."

Given that δὲ καί occurs quite systematically, and in texts with few orthographic mistakes, we must be dealing here with a new combination.[117] Similarly, we find the use of εἰ δὲ … εἰ δὲ (εἴτε … εἴτε) in texts which still regularly use τε (καί), and do not make a lot of orthographic errors, as shown in (47):[118]

(47)   διὰ τὸ τελείως ἀπηλλάχθαι αὐτὸν πρὸς αὐτοὺς οἷα μάλιστα αὐτοῦ φανέντος κατὰ πολλοὺς τρόπους μὴ ἔχοντος οἰονδήποτε εὔλογον, εἰ **δὲ** ἐγγράφως εἰ **δὲ** ἀγράφως, πρὸς αὐτοὺς περὶ ὧν ἐπήγαγεν αὐτοῖς, ἤτοι τοῦ μέρους οἰκίας Θέκλης κτλ. (SB.6.8988, ll. 63-68 (647 AD))

"… besonders da er in mancher Hinsicht irgendkeinen sachlich rightigen Vorwand zu haben scheint, weder schriftlich noch ungeschrieben, weshalb er gegen sie oder in Bezug auf den Hausanteil der öfters erwähnten selig gestorbenen Thekla Klage erhebent konnte, weder betreffende dieses Teiles, etc." [tr. Zilliacus]

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[113] For similar examples, see e.g. P.Petaus.17, l. 6 (184 AD); P.Cair.Masp.1.67060, l. 4 (VI AD).
[114] Compare Mayser (1934:130-131).
[115] There is also some evidence for the use of δέ … καί. See e.g. P.Cair.Masp.1.67001, l. 25 (514 AD).
[116] One some occasions, however, δέ and καί do have clearly separate functions: see e.g. P.Mil.Vogl.1.26, l. 13 (127-128 AD); P.Muench.1.9, 49 (585 AD).
[117] The first instance can be found in the fourth century AD: P.Kell.1.30, l. 15 (363 AD). For similar examples, see e.g. P.Cair.Masp.3.67312, ll. 62, 63, 79, 87, 99, 104 (567 AD); SB.6.8988, l. 49 (647 AD); P.Apoll.44, l. 4 (703-715 AD).
[118] For a similar example, see P.Lips.1.45, l. 17 (371 AD).

Whereas in Archaic Greek, δέ was far more common than καί, already in the Classical period we see a drastic change of frequency, καί becoming much more frequently used than δέ, being used to link noun phrases as well.[119] In Post-classical Greek, the use of καί further extends, forming the unmarked sentence conjunction, as Black (20102:174) notes: 'καί, as the unmarked or default sentence conjunction, may be found where collocating features are consistent with the use of δέ, but δέ, the more marked choice, is less often found in unmarked contexts where καί is otherwise expected.' Such inter-changeability between δέ and καί can also be noticed in our corpus: in some archives, both particles are used in exactly the same context. For example, in one contract from the sixth-century archive of Flavius Patermouthis, the protagonist is addressed as Φλαυΐῳ Πατερμουθίῳ υἱῷ Μηνᾶ στρ(ατιώτῃ) ἀριθμοῦ Ἐλεφαντίνης ὁρμωμένῳ **δὲ** ἐν Συήνῃ (P.Lond.5.1730, ll. 6-7 (585 AD)), whereas in another he introduces himself as Φλ(αυίος) Πατερμούθιος ἐκ πατ]ρὸς Μηνᾶ το[ῦ] καὶ λεγομένου Βῆννε [μητρὸς -ca.?- στρατιώτης τείρων ἀριθ]μο\ῦ/ Συήνης **καὶ** ἀπὸ τῆς αὐτῆς [Συήνης ὁρμώμενος (P.Muench.1.4+5v, ll. 7-9 (581 AD)). In another sixth-century archive, that of Flavia Aphthonia, standard phrases alternate between the two particles: so, for example, παρέξω **δὲ** κατ᾽ ἔτος λόγῳ συνηθείας [ἀχύρου σι]τ̣ί̣νου σαργάνας δύο (SB.6. 9085inv16048, ll. 18-19 (565 AD)) vs. **κα**῎π̣α̣ρ̣έ̣ξ̣ω κατ᾽ ἔτος λόγῳ συνηθείας σταχύων δέματα ὀκτὼ καὶ ἀχύρου σιτίνου σαργάνην μίαν (SB.6.9085inv16050, ll. 20-21 (565 AD)).

One of the most interesting developments, however, showing the approximation of καί and δέ, is the combined use of the two particles.[120] This pattern can already be found in the Classical period,[121] where it is usually explained in terms of καί having an adverbial function ("also, too"), and δέ a sentence/clause-connective function.[122] Mayser (1934: 131-132), too, adheres to this explanation when it comes to the Ptolemaic papyri.[123]

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[119] Compare Bonifazi (2015:254): 'if we compare the frequency of *dé* and *kaí* in Homer [sic] epic and in a later narrative genre, such as Thucydides' *Histories*, we observe a curious reversal: while the *Iliad* and the *Odyssey* exploit 1 *dé* every 18.5 words against 1 *kaí* every 38.4 words (on average), the *Histories* of Thucydides show exactly the opposite.'

[120] For some recent observations on the papyri, see also Luiselli (2010:90-91).

[121] See esp. Rijksbaron (1997).

[122] Denniston (1954:199, fn. 1), however, argues that in most καί functions as the connective and δέ as the adverb. See also Kühner & Gerth (1976:2.253) and more recently Rijksbaron (1997). Bonifazi *et al.* (2016, IV.2: §4) argue that no radical distinction can/should be made between 'adverbial' and 'connective' uses.

[123] Mayser (1934: 131-132) also observes that up to four words can intervene between the two particles, but usually only one.

With regard to the attestations in our corpus, however, such an explanation cannot be maintained.[124] Consider the following examples:[125]

(48) **καὶ** Ἰουδέοις **δὲ** ἄντικρυς κελεύωι μηδὲν πλήωι ὧν πρότερον ἔσχον περιεργάζεσθαι (P.Lond.6.1912, ll. 88-90 (41 AD))”

“And to the Judeans I give strict orders not to agitate for more than they had before.”

(49) φροντίς σοι γενέσθω τοῖς κυνηγοῖς οὓς ἀπέστειλα ἀγρεῦσαι συάγρους διὰ πολλὰς χρείας παρασχεῖν τὰ ἐπιτήδια πάντα, τοῦτ’ ἔστιν ὅσα ἔθος ἔχουσι λαμβάνειν καὶ τὰ κτήνη αὐτῶν καὶ αὐτοί, ἵνα ἀγρεύσωσι μετὰ πάσης σπουδῆς, **καὶ** κτηνύδριον **δὲ** αὐτοῖς ἓν γοργὸν τῶν ὑπὸ σὲ παράσχες, ἐπειδήπερ τὸ αὐτῶν ὃ εἶχαν βουρδωνάριον εἰς ἐμὴν ὑπηρεσίαν κατέσχον. (P.Ryl.2.238, ll. 2-13 (262 AD))

“Take care to supply all that is necessary to the huntsmen whom I have sent to hunt wild boars for various needs - all, that is, thaty they are accustomed to receive, both themselves and their animals, so that they may hunt with all zeal. Give them one spirited donkey from those in your charge, since I have kept for my own use the mule whith they had.” [tr. Johnson et al.]

(50) σύμπαιζ[ε δ’] αὐτῶι, **καὶ** αὐτὸν **δὲ** ἄγαγε μετὰ σεαυ[το]ῦ ἐκεῖ (P.Brem.53, ll. 9-10 (114 AD))

"Play (?) with him, and bring him here with you.”

One could say that in all of these examples both καί and δέ have a linking function, which is, however quite different: καί links the sentence with the primary sentence, in a neutral fashion, whereas δέ demaracates the Theme of the secondary sentence (Ἰουδέοις; κτηνύδριον; αὐτὸν).

While the construction of καί … δέ is always found with an explicit Theme in between the two particles, the construction is not limited to marking Participant Themes, as the following illustrations show:[126]

(51) **καὶ** εἰ καθεστάκειν **δέ**, οὐκ ἂ[ν] εἶχες αὐτῷ δοῦναι χωρὶς ἐμοῦ ἢ ἐξουσίας (P.Brem.53, ll. 16-17)

“Aber auch wenn ich (ihn) eingesetzt hätte, könntest du ihm nicht ohne meine Erlaubnis geben.” [tr. Wilcken]

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[124] Some editors still prefer to translate καί with “also”, even if such an adverbial interpretation is far from clear. See e.g. P.Brem.21, ll. 9-11. For some examples where καί more clearly has an adverbial function, see P.Flor.2.212, 10-12 (254 AD); P.Flor.2.176, ll. 15-17 (256 AD); P.Flor.2.177, ll. 13-14 (257 AD).

[125] For similar examples, see BGU.1.248, ll. 9-10 (75-76 AD); SB.10.10278, l. 11 (98-138 AD); P.Giss.69, ll. 6-7 (118/119 AD); P.Giss.45, ll. 7-8 (117-138 AD); P.Tebt.2.315, ll. 7-8 (II AD); BGU.2.417, l. 2 (II/III AD); PSI.12.1246, l. 5 (III AD); P.Cair.Masp.1.67077, ll. 11-12 (VI AD); P.Muench.1.1, ll. 21-22 (574 AD).

[126] Compare Rijksbaron (1997:199-201) on the Classical period. For similar examples, see e.g. SB.12.10881, l. 20 (302 AD); P.Mich.13.671, ll. 17-18 (VI AD).

(52) ἐὰν δὲ καὶ σοι ὁ Πωλίων πλείω τῶν ἡμερῶν ἐξήκοντα παρακατασκεθῶ ἐκῖσαι ἡμέρας ἐν τῷ αὐ[τ]ῷ Τ[ρ]αι[α]νῷ ποτ[αμ]ῷ λήμψομαι παρὰ σοῦ τοῦ Ἰσιδώρου ὑπὲρ μισθοῦ κ[αθ’ ἐκάσ]τη[ν][ἡ]μέρα(ν) ἀργυρίου δραχμὰς διακοσίας, **καὶ** οὐκ οὔσης **δὲ** ἐ[ξ]ουσίας ὁποτέρω ἡμῶν ἀλλάξε τι τούτων ἢ παραβῆνέ τ[ι] τῶν ἐν[γε]γραμμ[ένω]ν κα[τὰ] μηδένα τρόπον (P.Cair.Isid.81, ll. 22-27 (297 AD))

“And if I, Polion, am kept there, at the said Trajan's River, beyond the sixty days, I shall receive from you, Isidorus, as wages two hundred drachmas in silver each day. And it is not permissible for either of us to alter any of these stipulations or to transgress any of the terms herein written, in any way, because on these terms we have willingly and of our own choice come to an agreement with each other.” [tr. Boak & Youtie]

Interestingly, the use of this pattern has extended to the lower syntactic ranks as well, as the following two examples show.

(53) ἀξιῶ ὅπως τούτους μετακαλ[ε]σάμ[εν]ος ἐπανανκάσῃς αὐτοὺς ἀναγραφὴν ἀπάντων τῶν καταλελιμμένων συσ[τ]ήσασθαι τῆς δὲ γῆς πᾶσαν φροντίδα ποιήσασθαι ὑπὲρ τοῦ αὐτὰς ἐν τοῖς ἐμφόροις περισωθῆναι καὶ μηδὲν παραπολέσθαι τοῖς ὀρφανοῖς, **καὶ** ἱκανὰ **δὲ** αὐτο[ὺς] παρασχῖν μὴ ἄρα ἃ λόγῳ ἐπηνγίλαντό μοι ἔργῳ ἐπιτελέσωσι (P.Cair.Isid.77, ll. 23-27 (320 AD))

“[I] request that you summon these men and compel them to compile an inventory of the entire legacy and to give their full attention to the land, to the end that they (i.e. the arouras) be kept productive and the orphans suffer no loss, and to provide a bond lest they do to me in fact what they threatened in speech.” [tr. Boak & Youtie]

(54) ἐπέμψαμεν δ’ ὑμῖν ἐπιστολὰς πολλὰς **καὶ** διὰ τοῦ δούλου **δὲ** Σαραπίωνος καὶ διὰ τοῦ υἱοῦ τοῦ βασιλικοῦ (P.Sarap.80, ll. 21-23 (II AD))

“Nous vous avons envoyé de longues lettres par l'esclave de Sarapion et par le fils du scribe (?) royal” [tr. Schwartz]

While in (53), καί … δέ is used to co-ordinate infinitival complements, in (54) it links nouns, a rather uncommon usage. Rijksbaron (1997:188-193), who analyses similar examples in the Classical period, notes that δέ has an ‘individualising’ function (p. 191) in such cases. However, in all of Rijksbaron’s examples, it is always the second element in the co-ordination that is individualized. In our above example, we have a corresponsive καί … καί structure, with δέ being joined to the preparatory καί. The analysis presented by Rijksbaron (1997:191) – ‘while καί expresses the idea that the two items semantically belong together … δέ indicates that the (referent of the) second item should be considered in its own right, and is, thus, at least as important as the first item’ – therefore seems to be somewhat problematic.

To conclude, it is worth mentioning the use of δέ as a prepositive, rather than a postpositive particle In one sixth-century contract, for example, we find the following:

(55) ὁμολογοῦμεν καὶ {ὁμολογεῖ} ἕκαστον πρόσωπον ἀπ[ε]ιληφέναι τὰ ἴδια ἐκ πλήρους, μηδένα λόγον ἔχειν μήδε ἕξειν πρὸς ἀλλήλου\ς/ ... καὶ μὴ ἐγκαλεῖν ἀλλήλοις μ[ή]τε ἐγκαλέσειν πώποτε μὴ ἐν δικαστηρίῳ οἰῳδήποτε ἢ ἐκτὸς δικαστηρίου διὰ τὸ ἀπαξαπ[λῶς] ἡμᾶς ἀπηλλάχθαι καὶ πεπληρῶσθαι καὶ διαλελύσθαι πρὸς ἀλλήλους, **δὲ** [ἑκατέ]ρῳ ἡμῶν ἑτέρῳ γάμῳ προσομειλεῖν εἴ βουληθείη ἀκωλύτως καὶ ἀνεμποδίστ\ως/ [καὶ] [ἀ]νεγκλύτως (P.Lond.5.1712, ll. 11-19 (569 AD))

"We agree and each party agrees that it has received back its personal property in full, that we have and will have no cause against each other ... and we are not charging one another and we shall never make any charge in any court whatsoever, or outside court, because we have been completely released and paid in full and have been reconciled with one another; and it shall be possible for each one of us to enter into marriage with someone else if he (or she) should wish, without hindrance or impediment or reproach." [tr. Rowlandson]

In this passage, various infinitives depend from the matrix verb ὁμολογοῦμεν "we agree": ἀπ[ε]ιληφέναι, ἔχειν, ἕξειν, ἐγκαλεῖν, ἐγκαλέσειν, and προσομειλεῖν. Whereas the first five infinitives are linked through καί, μήδε, μήτε, or simply asyndeton, for the last infinitive δέ is used in prepositive position. Such instances illustrate the close affinity of καί and δέ in later periods of Greek.

5   Conclusion

Recent scholarship has tended to describe the use of particles in very general terms: semantically, Bonifazi *et al.* (2016) and Zakowski (2017) take a so-called 'minimalist' approach,[127] attributing specific usages to context. Bonifazi *et al.* (2016) take this generality of description one step further, by stressing the pragmatic function of particles such as δέ, and noting that this should be viewed independently from syntax. Such a minimalist approach has some specific advantages: it allows the researcher to capture all usages of particles with greater ease, is pedagogically simpler,[128] and perhaps also cognitively more realistic.[129] There are also disadvantages, however. As Zakowski (2017: 230) admits, it is very hard to refute minimalist accounts, because anything goes. Another disadvantage concerns the fact that it becomes very hard to give a diachronic account of the semantic and syntactic changes undergone by particles, since the descripttion is so general.

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[127] See e.g. Black (2002:51) and Porter & O'Donnell (2007:7), where such a minimalist approach is contrasted with a 'maximalist' approach.

[128] See e.g. Zakowski (2017:320) about the 'messiness' of particles such as γάρ.

[129] See Zakowski (2017:70-78) for further argumentation. Studies in Cognitive Linguistics, however, have shown that it is impossible to draw a line between 'semantics' on the one hand and 'pragmatics' on the other. The more a particle is used in a certain context, the more this context will become part of the semantics of the particle.

In this paper, I have attempted to show that previous claims that the use of δέ remained essentially the same in the Post-classical period represent an overgeneralization. Documentary texts show that δέ was extended in its usage, both in depth ('rank') and in breadth ('taxis'). In terms of rank, δέ is not limited to linking sentences: it can also link main clauses, subordinate clauses, and noun phrases. In sentences and clauses, δέ often co-occurs with different types of Themes, which present referentially new information, but certainly not always. In terms of taxis, we see that δέ now also comes to be used to link elements with a different status, such as a main clause and a preposed subordinate clause, or a postposed subordinate clause and a main clause. This explicitly goes against Schachter's (1977:90) 'coordinate constituent constraint', which stipulates that 'the constituents of a coordinate construction must belong to the same syntactic category and have the same semantic function'.[130] Because of these extensions, we can say that δέ no longer exclusively functions as a 'discourse marker': it is operative at both the 'textual' and the 'ideational' level. If the particle has a unified semantics, it is no longer to indicate thematic discontinuity (transitory additive extension), but simply to indicate that two co-ordinands are conceptually distinct.[131] This is also indicated by the fact that δέ at the clausal level is always used for conceptually distinct events, and at the phrasal level for accidental co-ordination.

In the last part of this paper, I have studied the reasons for the syntactic and semantic extension of δέ. While from a typological point of view such an extension is not un-common, and can be studied under the heading of 'grammaticalization',[132] I have suggested that in Ancient Greek it probably had a specific motivation, namely the restructuring of co-ordinating conjunctions in Post-classical Greek. As Viti (2008:59) has noted, 'the coordinators of the early IE languages are more numerous, more transparent, and less grammaticalized than their modern European counterparts.' Next to δέ, which was only used for event co-ordination, Ancient Greek also had καί and τε, which were used for both event and nominal co-ordination. While in the Classical period, these three particles were in complementary distribution, the entire system is disturbed in the Post-classical period, because of the gradual disappearance of τε starting from the third century BC. As a result, we see that δέ also appears in context that are typical for καί and

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[130] Cf. Haspelmath (2007:19).
[131] Differently put, it is always used with separate intonation units.
[132] See esp. Mithun (1988).

τε: not only in combinations (such as δὲ καί for τε καί or εἰ δέ for εἴτε), but also on its own in syntactic contexts which are unusual for the particle. Strikingly, in some texts δέ is used as a prepositive particle (similarly to καί) or even where co-ordination is no longer at issue, at the beginning of a text, or with a separate intonation unit.

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