Everyday Communication in Antiquity: Frames and Framings
edited by Klaas Bentein

Spacing Out Speech Acts
Textual Units and Their Visual Organisation in Greek Letters on Papyrus

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Abstract This study explores the textual and visual organisation of Greek letters on papyrus. While previous scholarship has focused on cataloguing formulaic elements in epistolary texts, it has often overlooked how these elements, along with other linguistic features such as discourse particles, tense-aspect marking, and pronouns, provide cues for discourse segmentation. This contribution discusses the preliminary results of an annotation framework designed to capture these aspects more effectively and examines the correspondences between generic structure and pragmatic concepts such as 'speech act'. In the second part of the study, we identify various layout elements that contribute to the visual organisation of the texts. We preliminarily assess how sensitive writers were to the type of speech act being expressed and the ways in which visual cues were used to emphasise certain thematic blocks within the letters. This integrated analysis offers new insights into the complex interactional form of communication presented by ancient letters.

Keywords Greek letters. Text segmentation. Speech acts. Layout. Discourse analysis.

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1 Introduction

In the early stages of the European-funded research project[1] 'Everyday Writing in Graeco-Roman and Late Antique Egypt. A Socio-semiotic Study of Communicative Variation',[2] we maintained a predominantly binary perspective towards the study of documentary texts. Within our project database,[3] we distinguished between the global level of the entire text, annotating aspects such as *writing material*, *writing direction*, and *handwriting*, besides the more general socio-pragmatic characteristics of each text,[4] and the local level of concrete linguistic and typographic features. As the project advanced, it became evident that to properly comprehend the operational dynamics of documentary texts, and to discern the ongoing processes of interpersonal positioning encapsulated within them, we needed to move beyond such a 'flat' conceptual structure, and take into account the larger building blocks or 'discourse constituents'[5] out of which texts – and by extension entire textual genres – consist, both from a linguistic and a visual perspective. The study of these meso-level aspects can be referred to in terms of discourse 'segmentation',[6] or, to borrow from the late Michael Silverstein, the 'metricalisation' of the text.[7] By integrating these various levels of analysis (from local to global), a much more comprehensive understanding of the communicative processes underlying ancient texts – both in terms of conceptual frames and

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1 See further `www.evwrit.ugent.be`.

2 The project has received funding from the European Research Council under the Horizon 2020 research and innovation programme (Grant Agreement No. 756487). Additionally, Marta Capano's research has been supported by a PRIN grant *Testi metalinguistici come fonte di dati privilegiata per la conoscenza delle lingue antiche*, funded by the Italian Ministry of Education, University and Research (MIUR).

3 For a more extensive description, see Bentein 2024.

4 In terms of its communicative participants and their communicative goals.

5 See Bentein 2023a, 433-6 for a model of discourse grammar which is based on earlier work by Koenraad Kuiper. Compare the 'text syntax' provided at `https://grammateus.unige.ch/introduction/concepts#structure`.

6 Or alternatively 'chunking', 'partitioning'.

7 E.g. Silverstein 2023, 33-4. Silverstein's term has a more writer-/speaker-oriented perspective than 'segmentation', which is oriented towards the modern analyst.

their more specific linguistic and visual framings – can be achieved.[8]

Previous scholarship has, of course, engaged significantly with what we call here the metricalisation of ancient texts, in particular from a linguistic point of view. Several studies have documented the formulaic phraseology[9] inherent in our texts, with private letters receiving the majority of the attention. Especially in recent years, contracts have also attracted substantial scholarly interest in this regard.[10] Besides, scholarship has made an effort to describe the larger discourse constituents that are cued by these formulae: one can mention the work of John White from the 1970s in this context; this scholar made an attempt to outline both the overall structure of letters and petitions, as well as the formulae that can be found within this structure. More recent publications have added substantially to our knowledge of the generic structure of other genres, such as the 2014 handbook *Law and Legal Practice in Egypt from Alexander to the Arab Conquest*,[11] which contains useful summaries of the structure of contractual subgenres in different times and cultures. Digital technology is playing an ever more important role in cataloguing and indexing the research outcomes, thereby enhancing both their availability and searchability: digital portals such as *Trismegistos*[12] and *Synallagma*[13] provide searchable inventories of formulae in letters, petitions and contracts on the basis of exhaustively annotated corpora of texts; the recently appeared *Grammateus* portal[14] provides a description of the generic and layout structure of a broad range of textual genres, though being somewhat more limited when it comes to the analysis of individual texts.

In an important 2007 article dedicated to Pompeian wall inscriptions, Peter Kruschwitz and Hilla Halla-aho noted that Classical scholarship had been, regrettably, only very slowly shifting towards the major branch of linguistics dealing with 'non-literary' or 'technical' text types, their structure and their (technical) language, defining such a text type as

> a non-literary group of texts which forms a unit due to a cluster of shared features, resulting in what might be called a certain isomorphy of each text type. One may rightfully say that it is the non-literary

8 See Bentein 2023, 93 for a textualisation model that takes into account framing features at the micro-, meso-, and macro-level, both linguistically and visually.

9 See most recently Nachtergaele 2023.

10 See now Yiftach-Firanko forthcoming.

11 Keenan, Manning, Yiftach-Firanko 2014.

12 `https://www.trismegistos.org/formulae/`.

13 `https://synallagma.tau.ac.il/`.

14 `https://grammateus.unige.ch/`.

> equivalent to a literary genre. The shared features may typically be structural, formal, contextual, visual, or language-related.[15]

While, as far as Greek papyrology is concerned, it would be unfair to say that "virtually everything remains to be done in the field of technical text types and technical language",[16] one could posit – at the peril of oversimplification – that the scholarly endeavours that have been made so far share certain prevailing characteristics:

1. they mostly focus on the (heavily) formulaic openings and closings, and do not engage much with the body of the texts;
2. they tend to be linguistically, rather than visually oriented;
3. they are based on smaller annotated corpora and/or generalise across entire (sub)genres;
4. they mostly catalogue formulae, rather than smaller or larger discourse constituents.

Besides, there is a need to engage to a greater extent with findings in disciplines that have profoundly altered our view of human communication, such as *discourse analysis* (in particular research on technical or 'rhetorical' genres, as they are sometimes called), various branches of *pragmatics*,[17] *social semiotics*, and *sociolinguistics*, to name but some, in which key concepts such as 'frame' and 'framing', but also 'formulaic genre', 'speech act', 'discourse particle', 'pragmatic marker', and 'multimodality', among others, have been developed and substantially elaborated over the years. That these and other scholarly gaps should exist is understandable, given that fully addressing them would require a substantial infrastructural and conceptual investment, which few funding bodies are willing to make, and which goes beyond the interest of most current papyrological scholarship.[18]

It goes without saying that the full-scale development of such a new, integrated analysis of the structure (linguistic and visual!) of documentary sources, and its actual annotation, goes beyond the boundaries and resources of the Everyday Writing project, too. To address some of these shortcomings, and to start developing a new perspective, we decided to set up a smaller-scale pilot project, which had the twofold aim of on the one hand elaborating a workable framework for text-structural annotation, with attention to different types of discourse constituents, and how they are linguistically and visually cued, and on the other hand applying this framework to a subset of the

15 Kruschwitz, Halla-aho 2007, 43.

16 Kruschwitz, Halla-aho 2007, 47.

17 In particular *socio*pragmatics, *interpersonal* pragmatics, *variational* pragmatics, and *cross-cultural* pragmatics.

18 For some pioneering studies, see e.g. Koroli 2016; 2020; Mackay 2016; Bruno 2022.

texts in the corpus, namely Roman-period private letters. We decided to focus on private letters at first instance, because their structure tends to be freer than that of other text types such as petitions and contracts, which revolve around a very specific communicative goal, and therefore also present a more standardised document structure.

In what follows, we will first discuss the linguistic side of the annotation process, which played a primary role in our pilot project (§ 2); as we now have started working on the visual annotation of documentary sources, too, we want to explore in the second part of our contribution how elements of generic structure connect to the layout structure (§ 3). Some concluding remarks are then made (§ 4).

2 Annotating the Generic Structure of Greek Letters

In the following section, we will illustrate some results of the linguistic annotation of the 'generic' structure made on Greek private letters from the Roman period of the Everyday Writing corpus. With 'generic structure' we refer to the generic building blocks that together constitute a document. However, our analysis is not limited to the generic structure, but encompasses other levels of linguistic analysis, particularly pragmatic structure, specifically the analysis of the pragmatic grounds behind the generic structure. Even though, as we shall show, the discourse (generic) and speech act (pragmatic) dimensions frequently display some overlap, the discussion of them will be organised in two blocks, addressing first the generic structure (§ 2.1), and then the more specifically pragmatic issues (§ 2.2). Finally, by using concrete examples, we will address how our approach, which considers both dimensions, can more effectively describe and interpret the variation in the rhetoric and pragmatic components of Greek private letters (§ 2.3).

2.1 Textual Segmentation

Starting from the early 1970s, an increasing number of works have been published on the topic of textual segmentation, that is to say the recognition of subdivision within the generic structure of a text.[19] Because of its relevance in almost any kind of textual analysis, textual segmentation has been the subject of a large set of more recent studies, and scholars have developed alternative methodologies and models,[20] almost invariably through the employment of digital tools.

19 E.g. Halliday, Hasan 1976; Giora 1983; Givón 1983.

20 E.g. Moens, De Busser 2001; Schnur, Csomay 2019; Cocco et al. 2011. Pons Bordería 2014 contains a useful overview of models of discourse segmentation in Romance languages.

Within the wider discipline of discourse analysis, the development of robust studies on textual segmentation, originally conceived for modern documents, [21] led to the application of this type of analysis to ancient documents, especially in the area of biblical studies[22] but also to Classical Greek texts.[23] Scholars have produced research on textual segmentation employing a variety of approaches, with significant theoretical differences, ranging from works that employ a purely syntactic approach,[24] to those focusing on prosody,[25] and finally to a solely textual approach to discourse analysis.[26] Due to the nature of our evidence – Greek epistolary papyri – and because of our interest in pragmatic analysis, we especially considered contributions centred on the pragmatic structure, but we have adopted a 'theory-neutral' approach. In doing so, we have positioned ourselves within a tradition for the study of textual segmentation, as the very origin of this branch of study derives, naturally, from the empirical observation that there must be a higher level of analysis than the phrase. However, several different interpretations have been offered on the nature and the identification of this level, depending on the theoretical framework of their authors. Among the more fruitful proposals, we can mention here *Development Units*,[27] *Discourse Units* (DU),[28] *Elementary Discourse Unit*s (EDU),[29] *cola*,[30] and *discourse topics*.[31] As we shall see in the next section, already at the stage of the annotation process we were aware of the connection between discourse and pragmatic analysis on the one hand, and layout segmentation on the other. We recognised the necessity of clearly separating linguistic analysis from visual analysis, ensuring that each is addressed independently. Nevertheless, we also deemed it beneficial to employ a consistent set of labels across both domains. Instead, we chose a series of labels based on the textual level, recognising the textual Unit (see below, § 2.1.1) as the primary level of analysis.

Given these premises, we have adopted a rather neutral terminology and within our text we have identified Units and Subunits, on

21 One significant exception is already in Givón's *magnum opus* (Givón 1983), where he dedicates a chapter to topic continuity in Biblical Hebrew.

22 E.g. den Exter Blokland 1995; Porter 2005; 2008; Korpel, Sanders 2017; Kim 2019.

23 E.g. Buijs 2005; Scheppers 2011.

24 E.g. den Exter Blokland 1995.

25 E.g. Freiberg 2017.

26 E.g. Porter 2005; 2008. On this topic we will return in § 2.2.

27 E.g. Levinsohn 2000.

28 E.g. Degand, Simon 2009.

29 E.g. Stede 2012.

30 E.g. Scheppers 2011.

31 E.g. Chafe 2001.

the basis of both contextual and linguistic criteria (see further § 2.1.1 and 2.1.2). Furthermore, we have used a more detailed framework for analysing the main components of (Sub)Units, namely Elements and Modifiers (see § 2.1.2).

2.1.1 Units and Subunits

As evident from the chosen terminology, we consider Units as a larger and more independent segment of the text, while a Subunit is a smaller segment that should not be considered in isolation, as it is included in a larger section. Before describing the parameters behind our choices for rhetorical analysis and segmentation, it will be helpful to see in practice a few examples of textual segmentation. A very typical case of a division in Units and Subunits can be identified in *P.Oxy.* XX 2274 (III AD) = TM 30488, the body of which reads as follows:

|| γεινωσειν (l. γιγνώσκειν) ὑμᾶς θαίλω (l. θέλω),
ὅτει (l. ὅτι) αἰκλ̣ά̣πη (l. ἐκλάπη) τὰ μοσχεύ-
μ̣α̣τα τὰ ἐν τῷ κτήμα-
τι τοῦ Σαιρήνου.[32] | καικμή-
καμεν (l. κεκμήκαμεν) ζη̣τ̣ο̣ῦ̣ντες τοὺς τό-
πους, οὓς ἐ̣ποπτάζομεν,
σὺν τοῖ̣ς δημοσίοις καὶ
οὐδαιμί̣α̣ν̣ ἔνφασιν εὕραμεν. ||
μαιτηγ̣γ̣α̣ικα (l. μετήγγικα) τὸν οἶνον, ὡς
εἴρηκ̣α̣ς, πέμψον οὖν αι (l. τοὺς)
ναυταὶ (l. ναύτας), μὴ παρατράμῃ (l. παραδράμῃ). ||

I want you to know that the offsets in the estate of Serenus have been stolen. I have worn myself out searching together with the officials the area under my surveillance, but we found no trace. I have barreled the wine as you have said. So, send the boatmen that it may not spoil. (transl. Wegener)

Besides the opening and closing of the letter, which are not recorded here, two Units, marked with double vertical bars, can be recognised in the body of the text.[33] The first Unit deals with a theft and its consequences (ll. 3-10), the second is concerned with parcelling wine

32 Σαιρήνου (Σερήνου) can be interpreted either as a toponym or rather as a personal name (see Pruneti 1981, 171).

33 This layout has been used for the present article, but on the database a colour-coded convention is adopted. Additionally, in this article speech acts are indicated by a capital letter (e.g. Request), while Units and Subunits are *italicised* (e.g. *opening greetings*).

(ll. 11-13). The first Unit contains two Subunits (ll. 3-6 and ll. 6-10), marked with a single vertical bar.

Sometimes, the skilfulness and cunning of a writer complicate the task of recognising where a first Unit ends and a second one begins. For instance, in *P.Oxy.* LIX 4004 (V AD) = TM 35213, a letter of condolence, we can distinguish five Units. Ignoring the opening (ll. 1-2) and closing, which do not concern us here (ll. 16-20, followed by a postscript at ll. 21-3 of the letter), we observe that the body of the text contains a few lines with the typical themes of consolatory prose (ll. 3-7), where Theodoros, the writer, expresses his condolences to the widower Kanopos, followed (rather craftily) by a request of getting better and of an appointment (ll. 7-12). The following four lines show a rather shifty passage to a completely different request, a meeting, which possibly constitutes the true purpose of this message to an inconsolable widower. Between ll. 12-15, Theodoros asks Kanopos to bring clothes to their meeting and even presents a list of items that should be brought to him on that occasion.

κυρίῳ μου ἀλη[θ]ῶς [τ]ι̣μιω̣τ̣ά̣τ̣ῳ̣ ἀδ̣ε̣ḷφῷ̣ Κανώπῳ, 1
(vac.) Θ[εόδ]ω̣ρος. ||
πάνυ ἐλυπήθη̣μ̣ε̣ν̣ [ἀ]κ̣ο̣[ύ]σ̣[α]ν̣τές τ̣ι̣ π̣[αθεῖν Μ]α̣καρίαν
τὴν σὴν ἐλευθέραν, \κα̣[ὶ οὐκ]/ ἀḷ[όγ]ω̣ς̣ τοσοῦτ̣ο̣ν̣ ὁ̣ υἱός σου
Γρατιανὸς ἐπόθησεν αὐτήν, κ̣α̣ὶ̣ ἔτ̣ι̣ δ̣ὲ̣ ο̣ἱ 5
ἄλλοι αὐτῆς υἱοί. πλὴν τί δυνάμ̣ε̣[θα] π̣οιῆσαι
πρὸς τὸ ἀνθρώπινον; | καταξίω̣σ̣ο̣ν̣ ο̣ὖ̣ν̣ σ̣α̣υτὸν
παραμυθήσασθαι καὶ σκυλμὸ̣ν̣ ὑπ[ο]μ̣ε̣[ῖ]ν̣[αι] καὶ
ἐλθεῖν πρὸς μὲ μετὰ τοῦ κ̣υ̣ρίου μου Οὐαλ̣ε̣ν̣τ̣ί̣νου
ἐν τῇ̣ Νήσων. χρείαν γὰρ ἔχω τῆς εὐγενίας <σου> καὶ πάλιν 10
ποιῶ̣ σαι διὰ σκάφους προπεμθῆναι (l. προπεμφθῆναι). μὴ [ο]ὖν
ὀκνήσῃ̣ς, ὅτι ἀνάβασίς ἐστιν. | ἐ̣ρχόμενος δὲ καταξίωσον
ἐνέγκε [[.]] (l. ἐνέγκαι) ὅσα [[ς]] ἔχει\ς/ γνάψιμα. εἰσὶν δέ· στιχάριον
Ναθαναῆλ, ῥ̣ά̣χ̣νη λευκή, στιχάριον Συγ̣κ̣λητικῆς,
μαφόριον τῆς Κύρας, στιχάριον Κύρας. || 15
προσαγορεύω Δί̣δ̣υ̣μον καὶ Φιλόξενον
καὶ πάντας τοὺς σούς. ||
(hand 2) ἐ̣ρρῶσθαί σε εὔχομαι
χρόνοις π̣ο̣λ̣λ̣ο̣ῖ̣ς̣, κ̣ύ̣ρ̣ι̣ε̣
τιμ̣ι̣ώτ̣α̣τε ἄδ̣ε̣ḷφε. || 20
περὶ τοῦ σίτου μὴ ἀ̣μ̣φίβ̣α̣λλε. ἐ̣γ̣ὼ̣ οὐκ
ἔπεμψα αὐτὸν ἵνα σ̣ο̣ὶ̣ ἐ̣ḷθ̣όντι π̣[α]ρ̣α-
μετρηθῇ̣. ||
v
(hand 1?) κυρίῳ μου ἀληθῶς (vac.) τιμιωτάτῳ ἀδελφῷ Κανώπῳ
Θεόδωρος. 25

> We were much grieved (to hear the fate) of Macaria your wife, that your son Gratianus mourned her so much, (and also) her other sons. But what can we do against mortality? So please comfort yourself and make the effort and come to me with my lord Valentinus at Neson. For I have need of your kind self, and again (?) I shall have you brought by boat. Do not hesitate, for the river has risen. When you come, please bring all the cleaned clothes that you have. Here is the list: Nathanel's tunic, a white blanket (?), Syncletice's tunic, Cyra's cape, Cyra's tunic. I greet Didymus and Philoxenus and all your people. (2nd hand) I pray for your health for many years, most honoured lord brother. As for the wheat, don't worry. I didn't send it myself so that it could be measured out to you when you come. Address: (1st hand?) To my truly most honoured lord brother Canopus, Theodorus. (transl. Ioannidou)

Normally, in a text arranged with less talent in connecting different requests, the body of this letter would be clearly segmented in two different Units. In this case, however, the letter writer's ability ties together the first part of the letter, containing the condolences, to the second, with the request. As a consequence, we are dealing with one Unit (above, between double vertical bars), subdivided in three Subunits (whose starting points are marked by a single vertical bar). Far from suggesting that textual segmentation is not reliable, this example demonstrates how the analysis of generic and pragmatic structure can unveil important information on style and communicative goals.

Among the types of (Sub)Units we recognise are *background*, *declaration*, *health wish*, *list*, *request* and *threat*. These labels, which have been chosen in virtue of their descriptiveness, designate the content of a segment of text, according to our theory-neutral approach while dealing with textual segmentation. Because of space constraints, rather than offering here a description of each of the (Sub)Unit types that we have recognised and annotated in our corpus, we will show some examples of the types of (Sub)Units, specifically *opening greetings*, *background*, and *request*. For this purpose, we propose here the analysis of a text from our corpus, *P.Oxy.* LVIII 3919 (188 AD) = TM 17903, a private letter from a father to his son.

Σαραπίων Σαραπίω-
νι τῷ υἱῷ χαίρειν.
|| διεπεμψάμην σοι διὰ
τοῦ ἀδελφοῦ σου (δραχμὰς) ις´, ὅ-
πως ἀπαρτίσῃς μοι 5
τὴν ις´. | ἐὰν οἷον ᾖ ν̣
καὶ τῷ ἀδελφῷ σου
λάμ[β]ᾳν[ε] π̣αρὰ τ̣ῆς μη-

τρός σου τὰς ἴσας (δραχμὰς) ις´,
καὶ διαπέμψομαι 10
αὐτῇ. ἐὰν ᾖς λαβὼν
τὰς (δραχμὰς) ρ´, δὸς αὐτῇ.
ἐὰν δὲ μή, πέμψον
μοι, ὅπως ἀναβὰς αἰ-
τήσω ἐγώ. || ἔρρωσο. 15

Sarapion to Sarapion his son, greetings. I sent you by way of your brother 16 drachmae so that you may settle the 16 (drachmae?) for me. If it is possible, get the same 16 drachmae from your mother for your brother too, and I shall send (the same amount) to her. If you have obtained the 100 drachmae, give [them] to her. If not, send me (word), so that I may come up and ask myself. Farewell. (transl. Rea)

On a generic structure level, we can identify three units in this letter. The first one, as customary, contains the *opening greetings*, which are selected between a variety of formulae that show a considerable amount of variation.[34] In this case, the greetings simply consist of Σαραπίων Σαραπίωνι τῷ υἱῷ χαίρειν. The second unit, which corresponds to the whole body of the letter, begins in the third line of the document and continues until the last. The third Unit, with *closing greetings*, corresponds to the short health wish ἔρρωσο lit. 'be well' (cf. § 2.2.2. on the speech act Leave-take).[35] From this example, it is clear how a unit may comprise a single word, fulfil a single communicative goal and, as we shall see in the next section, may correspond to one single speech act. However, and especially in the body of a letter, units tend to be longer and more complex and be subdivided in two separate Subunits, as in the case of this papyrus. While the main goal of this letter is of course a request, it is possible to recognise a first part of the text, ll. 3-7, the first Subunit, which sets the premises for the request, which constitutes the second Subunit (ll. 7-15).

This first textual Subunit of *P.Oxy.* LVIII 3919 is a good example of what we have termed *background*, which corresponds to 'Grounder' in the work of Juliane House and Daniel Kádár. This kind of textual Subunit has a clear pragmatic goal, which is to prepare the recipient of the letter and to increase politeness.[36] In House, Kádár 2021, segmentations of this kind have been interpreted as Supportive Move of

34 See for instance Head 2019; Bentein 2023a.

35 This *health wish* would be considered as closing greetings in the papyrological scholarship, and Leave-take in House, Kádár 2021.

36 Cf. Koroli 2020 on the use of the 'framing' as a way to impose psychological pressure on the recipient of the letter.

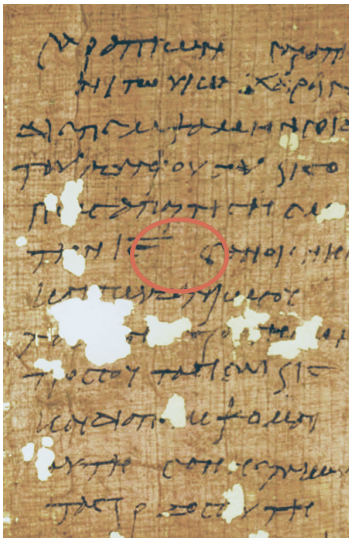

Figure 1
Letter from Sarapion to his son Sarapion. *P.Oxy.* LVIII 3919, ll. 1-12 [188 AD] = TM 17903. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

the Head Act, the essential part of the speech act without which the intended action cannot be fully accomplished.[37] According to their explanation, a Supportive Move can either be aggravating or mitigating, depending on the impact it has on the speech act. From the point of view of the generic structure, a *background* tends to be a Subunit, as it is intrinsically connected to the subsequent segment, either by positing the premises and contexts that might justify a situation, in narrative contexts (e.g. to excuse a delay), or by containing the justification for a request, which in the background is framed by the appropriate politeness.[38]

As typical, after the *background*, *P.Oxy.* LVIII 3919 **[fig. 1]** shows a *request*. The text is organised around three conditional sentences, all exhibiting the structure 'If x… then do y', with the apodosis in the imperative mode. Moreover, this papyrus offers a remarkable example of the connection between layout and generic structure, in that we have a graphic representation of a small separation between the two Subunits, after the numeral in l. 6. This second segment, i.e. this Subunit, constitutes a *request* and corresponds perfectly to the speech act category of the Request (cf. § 2.2.1).

37 House, Kádár 2021, 115. See further § 2.2.

38 There seems to be a direct proportion between the length of the background before a request and the level of social distance between the initiator and the receiver of the letter, but this needs to be further researched.

2.1.2 The Role of Coherence and Cohesion within (Sub)Units

Among the fundamental parameters for determining the textual boundaries of a (Sub)Unit, the concepts of coherence and cohesion, along with their linguistic markers, play a key role. Considering once again Sarapion's letter, *P.Oxy.* LVIII 3919, we notice that, despite the presence of a segmentation – pertaining both to the generic structure and the layout – between the first Subunit (the *background*) and the second Subunit (the *request*) in the body of the letter, the text shows an overall level of coherence and cohesion within the Unit.[39]

By 'cohesion'[40] we describe the property of a text to be linguistically connected within itself, through the use of grammatical and lexical tools. Cohesion is reached through a series of lexical and grammatical devices, such as *repetition*, *anaphora*, *ellipsis*, and *coordination*, e.g. with connective particles. These elements explicitly connect all the parts of a text and indicate the hierarchies among them, increasing also the perceived coherence.[41]

With 'coherence', which is a notoriously vaguer term,[42] we refer to the way in which a text logically coheres with itself and with the external situation to which the text is related. It has been observed[43] that while cohesion is text-internal, coherence has a relation with the context and has a more marked pragmatic value.[44] Factors that increase coherence are the occurrence of cataphoric elements (e.g. demonstrative pronouns), correlative constructions, and connective particles.[45] Since on a situational level coherence is increased by the presence of the same time-space coordinates, we can use temporal or causal conjunctions (e.g. ἐπεί, ἐπειδή, ὡς, genitive absolute) to determine a change in Subunit.[46]

While cohesion can only be expressed formally, through language, coherence is achieved also through reference to the context. In other

39 Cf. Giora 1985; Givón 1995.

40 See Basset 2009.

41 See Bonifazi 2009.

42 For a discussion on the validity of the term in Ancient Greek, see Bakker, Wakker 2009; for a structure-based approach to coherence in Ancient Greek, see Scheppers 2011.

43 See Sanders 1997; Blakemore 2006.

44 Van Erp Taalman Kip 2009.

45 Wakker 2009.

46 Another example of the difference between coherence and cohesion can be found in *P.Oxy.* XX 2274, analysed in 2.1.1 above. After having asked Kanopos to meet, to console him for the loss of his wife, Theodoros utilises their meeting for getting favours. Despite lacking cohesion, because the two situational settings are very different, the text has a certain degree of coherence, as shown by the usage of the conjunct participle ἐρχόμενος, and the particle δέ, which at this stage indicated minor discontinuity while also linking distinct events.

words, extralinguistic factors may contribute to an increase in coherence. To give an example, in the aforementioned *P.Oxy.* LVIII 3919 there is a reference to τὰς (δραχμὰς) ρ´, *the* one-hundred drachmae: while we modern readers are in the dark about what Serapion is referring to, it is very likely that for his son this amount of money would have had a significance. This reference does not increase cohesion (which might be limited to the fact that the lexical element of drachmae is repeated also in this segment of the Subunit), but it does increase coherence. Because of its extralinguistic and contextual component, while determining the level of coherence of a text we should always consider the pragmatic dimension. Coherence and cohesion represent another example of the interconnectedness between textual segmentation and pragmatic analysis, as a change of speech act is a clear indication of a textual boundary. In other words, the consistency of a certain speech act is a key factor for textual coherence, and therefore the presence of a new speech act can be used an indicator of the fact that we are in the presence of new Unit.

Together, the linguistic and extralinguistic realisation of cohesion and coherence allow us to untangle the organisation of the discourse through Unit and Subunits. In *P.Oxy.* LVIII 3919, lexical cohesion is shown by the repeated occurrence of lexical material such as forms of the verb πέμπω, the reference to the role ἀδελφός and to the specific amount of sixteen drachmae, across the entire Unit.[47] This lexical cohesion is of course a result of the fact that, despite the multiple requests, these concern a single theme, that is to say the exchange of money within a family. However, a higher level of cohesion is recognizable within the same Subunit where we find repetition of structures (e.g. the set of conditional phrases).

While all coherence-increasing devices are used to connect the text and make it more effective and to associate elements that might otherwise be detached (e.g. τὰς (δραχμὰς) ρ´ at the end of *P.Oxy.* LVIII 3919), Units and Subunits are also organised around elements that signal a certain degree of discontinuity, such as a change in the setting, topic entertained, or participants.[48] While the presence of space and time indicators is always crucial in marking discontinuity, and therefore the beginning of a new Subunit (if the discontinuity is minor), or an entirely new Unit (in the case of a major break) dealing with the usage of particles is not straightforward. As is well known in the scholarship, the usage of Ancient Greek particles for boundary

47 In anticipation of a concept that we will explore in depth in § 2.1.3, one can already notice that the imperative forms of the verb διαπέμπω make up one of the key components of the Unit (Elements in our terminology), as they constitute the request verbs.

48 See Buijs 2005.

marking varies diachronically,[49] and even within our corpus there might be significant differences. This discontinuity might be achieved introducing a new temporal or spatial setting, which would entail a major break, but it can also be represented through the presence of deictic elements (e.g. ἐνταῦθα, οὗτος and οὕτως), which form an element of minor discontinuity. These deictics connect a portion of the text with the previous, actualising it, but also creating the condition for new information. This level of discontinuity determines the segmentation of a Unit in two Subunits. A typical situation within our corpus consists of a unit segmented in two segments, a Head Act and a Supportive Act:[50] After a first Subunit where a situation or an event is laid out (e.g. a description or a background), a second Subunit offers a focus on a specific aspect of the issue (e.g. the consequences of a situation, for instance a declaration, or the expression of a request).

Although a certain degree of subjectivity is inevitable when segmenting a text, recognising units and Subunits is generally straightforward. To offer a different example of how to segment textual structure, one can consider the segmentation in Units and Subunits of the body of *P.Brem.* 63 (116 AD) = TM 19648, a private letter from Eudaimonis to her daughter Aline.

εὔχομαί σε πρὸ πάντων εὐ-
καίρως ἀποθέσθαι τὸ βάρος
καὶ λαβεῖν φάσιν ἐπὶ ἄρρε- 5
ν[ο]ς.|| τῆι κθ ἀνέπλ[ε]υσας καὶ
τ[ῆι] ἑξῆς κατέσπ̣ακα. μόγις
ἔλαβον ἀπὸ τοῦ βαφέος τ[ῆι]
ι τοῦ Ἐπείφ. | συνεργάζομαι
δὲ ταῖς παιδίσκαις σου κατὰ 10
τὸ δυνατόν. οὐχ εὑρίσκω
τὰς δυναμένας συνεργάζεσ-
θαι ἡμῖν, ἅπ[α(?)]σ[α(?)]ι γὰρ ταῖς ἰδί-
αις κυρίαις ἐργάζονται. | περι-
ώδευσαν γὰρ οἱ ἡμῶν ὅλην 15
τὴν πόλιν [π]ροσπεύδοντες
πλέον μισθόν. || ἡ ἀδελφή σου
Σουεροῦς ἀπέθετο τὸ βάρος. ||
ἔγραψέ μοι Τεεῦς εὐχαριστ[οῦ-]
σα ὑμῖν, ὥστε, κυρία, ἔγνων 20
ὅτι αἱ ἐντολαί μου μενοῦσι.
πάντας γὰρ τοὺς αὐτῆς κατα-
λείψασα συνεξώρμησέ σοι. ||

49 See e.g. Bakker 1993; Thijs 2021; Bentein 2021.

50 Cf. House, Kádár 2021.

ἀσπάζεταί σε ἡ μεικρὰ (l. μικρὰ) καὶ προσ-
καρτεῖ (l. προσ |καρτ<ερ>εῖ) τοῖς μαθήμασι. || ἴσθι δὲ 25
ὅτι οὐ μέλλω θεῶι σχολάζειν,
εἰ μὴ πρότερον ἀπαρτίσω τὸν
υἱόν μου. || εἰς τί μοι ἔπεμψ[ας]
τὰς κ (δραχμὰς), ὅτε οὐκ εὐκαιρῶ; ἤδη
πρὸ ὀφθαλμῶν ἔχω, ὅτι γυμνὴ 30
μενῶ τὸν χειμῶνα. ||

Above all, I pray that you may give birth in good time, and that I shall receive news of a baby boy. You sailed away on the 29th and on the next day I finished drawing down (the wool?). I at last got the material from the dyer on the 10th of Epeiph. I am working with your slave girls as far as possible. I cannot find girls who can work with me, for they are all working for their own mistresses. Our workers marched through all the city eager for more money. Your sister Souerous gave birth. Teeus wrote me a letter thanking you so that I know, my lady, that my instructions will be valid, for she has left all her family to come with you. The little one sends you her greetings and is persevering with her studies. Rest assured that I shall not pay studious attention to God until I get my son back safe. Why did you send me 20 drachmae in my difficult situation? I already have the vision of being naked when winter starts. (transl. Bagnall, Cribiore)

In this letter, we can distinguish seven units,[51] each consisting of a small portion of text marked above with a vertical double line (ll. 3-6; 6-17; 17-18; 19-23; 24-5; 25-8; 28-31). Only the third unit can be further divided into Subunits (ll. 6-9; 9-14; 14-17). This division is based on changes in tense (from aorist to present, then back to aorist) and, in one instance, a change of subjects (from the initiator of the letter to the workers, referred to as οἱ ἡμῶν). The connective particle γάρ, used repeatedly within the unit, serves as an element of minor discontinuity since it introduces the logical consequences of the previous discussion. In the following sections (§ 2.2 and § 2.3), we will revisit the types and proposed labels for these Units and Subunits.

51 The first lines (εὔχομαί σε πρὸ πάντων εὐκαίρως ἀποθέσθαι τὸ βάρος καὶ λαβεῖν φάσιν ἐπὶ ἄρρεν[ο]ς) can be analysed as a reformulated health wish (see Bentein 2023a, 447-51) and therefore would not be part of the body of the text, pertaining instead to the opening section.

2.1.3 Elements and Modifiers

Key components of textual segmentation are the categories of Elements and Modifiers, which lie at the intersection of generic and pragmatic structure. By Elements, we refer to the main participants (initiator, receiver, etc.) and main verbs (disclosure verbs, wish verbs, health verbs, warning verbs, etc.) of the (Sub)units. Therefore, Elements represent both the key actors of the events of a text and the verbs that describe those events.

Modifiers, on the other hand, are a larger category of items, whose core is represented by adverbs and other grammatical categories that can modify another item. Largely drawing from the work of Juliane House and Daniel Kádár, we recognise 'upgraders' and 'downgraders', which operate on speech acts (see below, § 2.2) and may change the pragmatic force of the speech act, either increasing or decreasing it. Such 'internal' modifiers may be syntactic, including, e.g. rhetorical questions (e.g. οὐκ ἀφήκατέ μοι μετ' αὐτάς 'didn't you abandon me after these [troubles]?'; and οὐκ ἐδεσθηται ὑμῖς 'aren't you ashamed?' in *P.Oxy.* XLVIII 3417 [330-385 AD] = TM 33723) and conditional clauses (e.g. ἡ οὖν δοκῖ τῷ ὑμετέρῳ μεγέθι πέμψε τινὰ τῶν πέδων ταῦτα ἀποστέλλετε 'So if it pleases your Highness to send one of the slaves, these goods shall be sent off' in *P.Oxy.* XXXIV 2732 [IV AD] = TM 24890). External Modifiers, on the other hand, are lexical and phrasal, including titles (e.g. master, father), endearment terms (e.g. dearest), but also so-called 'attention-getters', forms used to capture the attention of the receiver (e.g. ἰδού 'look').

2.2 Speech Acts and Textual Segmentation

Within studies on pragmatics, various attempts have been made to analyse the pragmatic structure, with particular emphasis and success for spoken corpora of modern languages. The pragmatic analysis of living languages has the obvious advantage of allowing a highly refined level of prosodic analysis, which simply cannot be reached for corpus languages such as Ancient Greek. It is sometimes difficult to establish a clear-cut distinction between rhetorical and pragmatic analysis, especially because many studies, including some that we mentioned in § 2.1, combine the two. While some researchers adopt a prosodic or syntax-based approach,[52] many of the most convincing studies benefit from a combined approach, integrating elements such as semantics and pragmatics,[53] or prosody and syntax.[54]

52 Van Dijk 1977.

53 Ferrari 2014.

54 Degand, Simon 2009. See Scheppers 2011 on Ancient Greek.

Of course, research on discourse segmentation – hence, the analysis of the pragmatic structure – has also adopted a chiefly pragmatic approach, recognising the speech act as the core of the communicative unit. Ranging from the work of John Sinclair and Malcolm Coulthard,[55] to the seminal contributions of Caroline Kroon and Mike Hannay,[56] discourse studies have identified at least two levels of discourse segmentation: Acts and Moves. Discourse Acts (DAs) are 'the smallest identifiable units of communicative behavior',[57] while Moves are larger blocks constructed from at least one smaller Discourse Act. Versions of this theory have been successfully applied to Ancient Greek.[58]

Though recognising some validity in these proposals, we have limited ourselves to acknowledge the centrality of speech acts within the organisation of discourse, based on the assumption that in every discourse there will be a prevalent speech act, around which the discourse is structured. Since we needed a paradigm with a clear set of speech acts, applicable to a variety of cultural contexts – such as our letters, which span multiple languages and a wide chronological range – we have adopted the cross-cultural approach to pragmatics recently proposed by Juliane House and Daniel Kádár.[59] The advantages are multiple: based on a set of classificatory principles (e.g. temporal properties, affective stance, and the roles and impacts of speakers and listeners), House and Kádár have reduced the existing elusiveness surrounding the notion of 'speech act'. Crucially, this approach situates speech act theory within a richer and more complex social and interactional model, that can explain diverse situational contexts, with their social norms and conventions, but also the role of participants, and their stance. At its core, their framework details how elements of generic structure, such as moves and exchanges, manifest as illocutionary acts. Additionally, it includes conversational strategies like head-internal and head-external modifying expressions, 'gambits' and other types of linking expressions that 'lubricate' the interaction (also known as 'discourse' or 'pragmatic' markers).

Following House, Kádár 2021, we have analysed the main speech acts (Head Acts in their terminology) found in the texts of our corpus. A single Head Act might be composed of more speech acts, but

55 Sinclair, Coulthard 1975.

56 Kroon 1995; Hannay, Kroon 2005.

57 Hannay, Kroon 2005, 92.

58 E.g. Crepaldi 2018; Freiberg 2020, and De Kreij's work in Bonifazi, Drummen, de Kreij 2021. Other useful studies that integrate speech act theory in discourse segmentation on Ancient Greek are Young 1989; Du Plessis 1991; Franklin 1992.

59 See House, Kádár 2021. This approach also appears in the two scholars' later re-edition of Edmondson's Interactional Grammar of English (Edmondson, House, Kádár 2023).

in this case they all tend to converge to a single communicative goal,[60] and this happens especially in opening health wishes. It should be kept in mind, as will be shown later in this contribution, that there is no complete overlapping between 'speech acts', which are central to pragmatic annotation, and textual (Sub)Units, though they might cover the same portions of text. Following House and Kádár's model, with slight modifications, we have identified the following speech acts: Assertion, Complaint, Description, Greeting, Request, Resolve, Suggest, Statement, Thanksgiving, Willing, and Wish Well, based on the fact that they manifest cross-culturally and, indeed, seem applicable to Ancient Greek.[61]

Because of space constraints, rather than describing how each specific speech act is characterised and how we have proceeded in our annotation process, in this contribution we will show examples of three of them, namely Request, Health Wish and Leave-take.

2.2.1 The Speech Act Request

Since making requests is one of the core elements of communication, the recognition of a speech act for requests is an early notion in pragmatics, as indicated through the presence of 'directives' in the list of illocutionary acts already in the very first speech act typology of Austin and of Searle. The research on the pragmatic nature of requests has immensely profited from the developments of politeness studies, a concept that refers to the usage of language for acknowledging and respecting the interlocutor's role in a linguistic exchange.[62] Moreover, requests are the most common communicative reason and pragmatic goal behind a private or public letter on papyrus,[63] so it is of little surprise that the study of requests in documentary papyri has a rich and extensive bibliography.[64]

In our analysis, we have defined the speech act Request as an utterance with the primary pragmatic function of asking for something that benefits the person who made the request, and we have consequently annotated as Requests the portions of texts that exhibit this communicative function as their main goal.[65] In the literature, there

60 Extended Speech Act, cf. House, Kádár 2021.

61 See also Edmondson, House, and Kádár 2023, 36-7 for further description of the rationale behind their cross-cultural typology of speech acts.

62 E.g. House 1989; Van Mulken 1996; Leech 2014.

63 See Koroli 2020, 75.

64 To quote a few examples, see Papathomas 2009; Dickey 2010; Leiwo 2010; Koroli 2016; 2020; Bruno 2020; 2022.

65 Cf. Head Act in House, Kádár 2021.

have been several attempts to structure a typology of requests, for instance dividing between direct and indirect request letters.[66] We have chosen not to describe subtypes of requests, limiting ourselves to noticing that they occur both in Units and Subunits, in the generic structure. However, we have considered the critical function of Supportive Moves in Request speech acts, as they contribute to the acceptability of a request in terms of politeness. To give an example, most requests can be identified by the presence of certain Elements, such as the request verb (e.g. παρακαλῶ 'I require', καταξιόω 'I command', θέλω 'I want', ἐρωτῶ 'I ask'), as well as certain Modifiers,[67] both upgraders (e.g. intensifiers such as πρὸ πάντων 'above all', or τάχιστα 'very fast') and downgraders (e.g. ἐάν δοκεῖ, ἐὰν θέλεις 'if you like/want'). The request verb might be an imperative (both present, e.g. πέμπε 'send!', or aorist, e.g. δός 'give!'), when there is a higher social distance, or in the infinitive or participle depending on set phrases such as, e.g. καλῶς ποιήσεις lit. 'you will do well to', πᾶν ποίησον lit. 'make every effort to'.

2.2.2 The Speech Acts Health Wish and Leave-take

As a universal and ritual convention across the world, sending health wishes is a very common way to begin or end a conversation, and this is of course exceedingly present in our corpus of documentary letters. Research on this kind of expression in papyri has recently been produced both on the linguistic[68] and papyrological side.[69] Additionally, two other related speech acts can be identified: Leave-take, which serves to conclude an encounter (in this case, a letter), and Greet, which is used to initiate encounters. The primary distinction between Greet and Leave-take lies in the fact that Leave-taking is more specifically associated with expressions of well-being.

Crosslinguistically, health wishes tend to occur at the beginning and, especially, at the end of a conversation and they unsurprisingly appear in the opening and closing parts of our sources. It should be noted that some letters might show two references to health and good fortune, at the beginning and at the end.[70] The presence of references to health in the opening of letters is particularly common in private letters, where the writer acknowledges (e.g. [ὅ]τι δὲ αὐτός τε ἔρρωσαι καὶ τ[ο]ῖ̣ς ἔργοις ἔν̣κεισαι καὶ ἐμοὶ σωθέντι συν̣ήδη̣, καλῶς ποιεῖς, '[As

66 E.g. Koroli 2020.

67 Cf. Soler, Flor, Jordà 2005; House, Kádár 2021.

68 E.g. la Roi 2021.

69 E.g. Nachtergaele 2016; Head 2019.

70 Nachtergaele 2023 recognises a difference between initial and final health wishes.

concerns the fact that] you are doing well in your works and you rejoice at my recovery' in *P.Oxy.* XXXI 2559 [II AD] = TM 26931) or enquires about the health status of the receiver, or even expresses thanks to the gods for the present good health (εὐχαριστοῦμεν πᾶ[σι τοῖς θεοῖς περὶ τῆς ὑγίας] σο̣ῦ 'I thank all the gods for your health' in *P.Giss.Apoll.* 11 [113-120 AD] = TM 19422).[71]

While these instances do not present the wishing component, the speech act Health Wish is in fact quite frequent in openings,[72] as in προηγουμένους (l. προηγουμένως) εὔχομαι τῇ θίᾳ προνοίᾳ ο̣ἱ[γ]ε̣νοντά σαι καὶ ὁλοκληρουν 'First of all, I pray to the Divine Providence that you are healthy and thriving and cheerful when my letter is delivered to you' (*P.Oxy.* XLVIII 3396 [330-385 AD] = TM 33708). In openings, the speech act Health Wish is frequently combined with a salutation, as in πρὸ̣ τ̣ῶν ὅλων ἀσπάζομαί σε, δέσποτα, καὶ εὔχομαι πάντοτε περὶ τῆς ὑγιείας σου 'First of all I salute you, master, and I pray always for your health' (*P.Giss.Apoll.* 13 [113-120 AD] = TM 19419).

Leave-take speech acts appear at the end of letters, especially private ones, presenting a high degree of variation, from the very simple ἔρρωσο 'be well' (e.g. *P.Oxy.* LXIII 4362 [III-IV AD] = TM 31825), to a standard ἐρρῶσθαί σε εὔχομαι 'I pray that you are well' (sometimes more or less abbreviated, e.g. *P.Giss.Apoll.* 32 [113-120 AD] = TM 19417), to rather complex formulae, such as ἐρρῶσθαί σε, κύριέ μου, διὰ παντὸς τῷ τῶν ὅλων δεσπότῃ εὔχομαι 'I pray to the Lord of all, my master, for your continued health' (*P.Oxy.* VI 939 [IV AD] = TM 33344).[73] It is possible to track the variation in complexity on the basis of two parameters: chronology, as formulae tend to become increasingly more elaborate with Late Antiquity, and social distance, because a higher distance between initiatior and receiver of a letter corresponds to the selection of a more intricate set of formulae for Leave-take. This level of elaboration involves both the lexicon, which belongs to a high register, and the syntactic complexity, as formulae become increasingly complex.

71 At the opening of letters, we sometimes find the verb 'to be healthy' (ὑγιαίνειν) in the infinitive form, attached to greeting phrases, e.g. Δημήτριος καὶ Παυσανίας Παυσαν[ί]α̣ι τῶι πατρὶ πλεῖστα χαίρειν καὶ ὑγι(αίνειν) 'Demetrius and Pausanias to their father Pausanias very many greetings and wishes for good health', in *P.Oxy.* XIV 1672 (37-40 AD) = TM 21965.

72 See Bentein 2023a, 441 for a quantitative overview of types of segments in the opening and closing.

73 This health wish is commonly found at the end of letters, cf. ἐρρῶσθαί σ̣ε̣ εὔχομαι πολλοῖς χρόνοις (*SB* XVI 12947 [300-325 AD] = TM 32603). Appropriately, House and Kádár distinguish between Wish-well (= Health Wish) and Leave-take (= Closing Greeting). This twofold distinction has a correspondence in the papyrological studies: e.g. Nachtergaele 2023, 243 makes a distinction between health wishes with the order matrix verb – complement and farewell greetings with the reverse order.

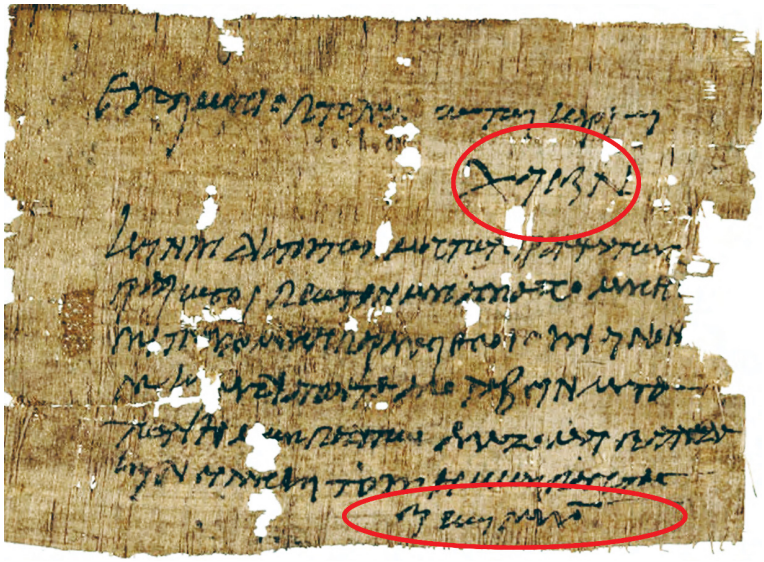

Figure 2 Letter of Eudaimonis to Ptolemaios. *P.Oxy.* IX 1217 [III AD] = TM 31648. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

Leave-take speech acts constitute an excellent and clear example of a tendency that will be systematically assessed in § 3 and has been already pointed out in § 2.1.1, that is to say the correspondence between layout and generic structure in our epistolary texts. Because Leave-take speech acts have a different pragmatic function from the body of the letter, just like Wish-well, Greetings and Salutations, they are oftentimes visually set apart in the letter. In *P.Oxy.* IX 1217 (III AD) = TM 31648 **[fig. 2]**, for instance, ἐρρῶσθαί σε εὔχομ(αι) is clearly separated from the rest of the text by a different type of spacing and text offsetting (see § 3), mirroring what happens at the beginning of the letter, where the salutation χαίρειν is also offset and more spaced than the rest of the characters.

2.3 Bringing Textual and Pragmatic Analysis Together. Declarations and the Speech Acts Statement and Assertion

The novelty of our approach to the annotation of a text's generic structure lies in the combination of the results of textual segmentation with pragmatic analysis. We have observed how Units and Subunits may be organised around one speech act, though this does not necessarily have to happen in each text. More interesting is observing the interaction between the textual and the pragmatic analysis.

Having provided annotations and descriptions for both the discourse and pragmatic levels (Units and speech acts) has proven quite helpful in cases where there is a textual (Sub)Unit, such as *Declaration*, that might correspond to several speech acts, as, e.g. Statement and Assertion.[74] The first, Statement, applies when there is the statement about something that is factually true (e.g. ἡ ἀδελφή σου Σουεροῦς ἀπέθετο τὸ βάρος 'your sister gave birth' in *P.Brem.* 63 [116 CE] = TM 19648), while the second one, Assertion, regards something that the speaker believes to be true. It is often in the 1st p. sing. (e.g. οὐδὲ γὰρ πλέον δύνομαι κρατῆσαι ἀργυροπράτην ὡ<ς> οἶδεν κύριος 'For I cannot longer endure the noble money-dealer, as the Lord knows, troubling me' (transl. adapted from Grenfell, Hunt, Bell)[75] in *P.Oxy.* XVI 1844, ll. 4-5 [550-650 CE] = TM 37850), but not necessarily, and there is more force in the utterance.[76]

The most distinctive characteristic of the textual unit declaration, both with the speech act Statement and the speech act Assertion, is the presence of a disclosure verb, such as a form of λέγω, or an imperative of a verb of knowledge (e.g. ἴσθι and γίνωσκε 'know!', and in some cases ἰδού 'look!'). The presence of the verb, though not obligatory, is quite common, and can be replaced by increasingly complicated disclosure formulae, always governed by a verb that expresses will, such as θέλω or βούλομαι. The most frequent case for this is the disclosure formula γινώσκειν σε θέλω, but there are variants such as εἰδέναι σε θέλω (e.g. *PSI* XII 1259 [120-225 CE] = TM 27174), γιγνώσκειν σε βούλομαι (e.g. *P.Dubl.* 15 [100-275 AD] = TM 28940) and more elaborate ones. What is interesting about these formulae is that, though introducing a declaration, they share some traits

74 Although we have adopted in most parts House and Kádár's terminology, our choice for Statement and Assertion diverges from theirs. These two speech acts loosely correspond to Tell and Opine (House, Kádár 2021) with certain significant differences: while Statement aligns with Tell, the speech act Assertion has a higher illocutive force and unlike Opine (House, Kádár 2021, 112), is not negotiable.

75 Here we accept the integration ὡ<ς> οἶδεν Κύριος (Putelli 2020, 171), rather than ὡ (l. ὃ) οἶδεν κύριος as in the *editio princeps*.

76 Cf. Murray, Starr 2021.

associated with the speech act Request, such as the use of imperative forms, or marks of politeness (such as the frequent recourse to forms of address, both simple, e.g. κύριε, and more complex, e.g. ἡ ὑμετέρα ἐξουσία ('your lordship') in *P.Oxy.* XVI 1829 [577-583 AD] = TM 22007, or τὴν ὑμετέραν ἀγαθὴ<ν> δεσποτεία<ν> ('your good authority') in *P.Oxy.* XVI 1866 [VI-VII AD] = TM 37869).

The complex set of relations between the pragmatic and generic structures are sometimes difficult to describe with a unitary model, but the combined analysis of the annotation of speech acts on the one hand, and the segmentation of generic structure on the other hand can shed new light on the internal structure of the text and the discourse organisation. Furthermore, the tension between discourse and generic structure of a text becomes visible in the occasional parting from formulae and conventional forms of politeness, and in the re-organisation of more regular textual subdivisions (e.g. making a request followed by an explanation of the context and reasons behind it, rather than the more common opposite alternative). In this sense, a combined pragmatic and textual approach seems to be the most suitable for analysing a multidimensional and complex interactional form of communication such as a letter.

3 Connecting Generic to Layout Structure

As we mentioned in the introduction to this contribution, the main focus of our pilot project has been linguistic, but our interest is broader: within the Everyday Writing project, we are interested not just in documents' generic structure, but also their layout (visual) structure, for which we have developed a complementary annotation environment.[77] The idea behind this 'double' annotation structure is that generic and layout structure can and should be related to each other, but need to be viewed independently. Scholars often do not distinguish between these two types of structure, or explicitly assume that they correlate, but this is not necessarily the case: according to one view, for example, the body of Greek documentary letters starts with a health wish and *proskynema* formula, whereas the prescript consists of the name of the initiator and addressee in combination with a greeting formula.[78] This view does not explicitly distinguish between layout and generic structure: visually speaking it may be true that the name of the initiator and addressee together with a greeting verb is set apart, but that does not mean that rhetorically the health wish and *proskynema* formula do not belong to the opening.

77 The discussion that follows is partly based on Bentein, Kootstra 2024.

78 Luiselli 2008, 692, 700.

In the Everyday Writing database, layout structure is approached from a similar 'hierarchical' perspective as generic structure. This perspective establishes distinctions among varying components, ranging from larger to smaller dimensions. These include 'parts' (the most overarching visual blocks), 'Units' (the visual blocks nested within the aforementioned parts), 'Elements', and 'Modifiers' (the smallest discernable visual segments). In thinking about layout structure, it does not seem unwarranted to apply a similar model of segmentation as the one that we just discussed. In fact, this has been done by scholars such as Paul Thibault, who proposes a 'visual-graphological rank scale', which consists of eight different levels, ranging from the page to the grapheme.[79] Along the same lines, Charles Kostelnick and Michael Hassett have proposed to recognise a 'spectrum of visual conventions', ranging from small-scale to large-scale.[80]

While there may not be an exact correspondence between these four types of segments from a generic and visual point of view,[81] working with the same set of terms opens the door to explicit comparison of different types of document structure, an approach that has not been explicitly pursued yet. One obvious difference between layout and generic segments is the way in which they are cued (framed): it is well-known that generic segments are cued by formulae and discourse particles, but it is much less clear how – and whether – visual segments are cued in documentary sources. In fact, the dominant view is that these sources were written in *scriptio continua*,[82] a style of writing where words are written without spaces or other forms of punctuation between them. In this format, the identification and separation of words, sentences, and ideas are entirely left to the reader's comprehension, which can, perhaps, be connected to the oral context in which documents were produced and received.[83] On the basis of a review of documentary sources and relevant secondary literature, we have come to distinguish between eight visual cueing systems, which we list here:

79 Thibault 2007, 124.

80 Kostelnick, Hassett 2003, 16.

81 One divergence we had to introduce between generic and lay-out structure concerns the introduction of subtypes of Units (called 'Subunits') and of Modifiers (called 'complex Modifiers'). That generic structure should have a more complex hierarchical organisation is in itself not a great surprise, given the complexity of language as a semiotic system.

82 Turner 1987, 7.

83 Scholars of non-literary sources have observed an increasing tendency to adopt diacritical signs (accents, breathings, punctuation marks) in documentary texts starting from the fourth century AD (e.g. Fournet 2009; 2013).

a. *Spacing* refers to the increase or decrease of letter size and the space existing between the letters.
b. *Alignment* pertains to the orientation of text, which can be left-justified, right-justified, centrally aligned, or fully justified.
c. *Text offsetting* encompasses the adjustment of text positioning, either inward from (*indentation*) or outward to (*outdentation*) the standard margin, distinguishing specific lines from the remainder of the text.
d. *Separation* refers to the presence of space, either vertically or horizontally, separating (parts of) lines (more traditionally known as [vertical/horizontal] *vacat*).
e. *Orientation* of the text could be either horizontally or vertically arranged.
f. *Lineation* is the system where information is placed on a new line or continuous on the same line.
g. *Pagination* represents information placement such as on the reverse side of the document or in the margins.
h. *Lectional signs* entail the use of any special symbols or marks within the text.

These eight visual systems – which may seem somewhat heterogeneous – are based on three different principles:[84] systems one to three (as outlined above) are *textual*, in the sense that they operate on the shape of the actual written text; systems four to seven are *spatial*, in the sense that they are based on the spatial organisation of the text; and system eight is *paratextual*, in the sense that it concerns the use of a separate set of symbols, lines, etc. While the visual analysis that we are suggesting here may come across as anachronistic in nature, it is good to keep in mind that much of it is based on universal, cognitive principles of visual-spatial organisation and segmentation – the so-called *Gestalt* principles – which are likely to have been operative in antiquity as well.[85]

While the generic structure of private letters has received in-depth attention through the pilot project that we described above, the layout structure of private letters and other text types has been studied only marginally in the Everyday Writing project, through a couple of case studies, addressing women's letters and the eighth-century

84 Compare Kostelnick, Hassett 2003, 16.

85 Two such cognitive principles that we consider particular relevant are the *principle of nearness* (elements that are placed near to each other are perceived as forming a unity) and the *principle of similarity* (elements that are perceived as similar create a unified pattern).

Qurrah archive.[86] In the context of the present contribution, rather than zooming in on such a subcorpus, we want to address a specific, twofold research question, namely (i) to what extent writers adapted their visual marking to differences in terms of pragmatic structure; that is, whether certain types of speech acts were visually marked more frequently/heavily than others (requests, for example, compared to statements); and (ii) whether higher-order, thematically distinct generic segments (our *Units*) were visually marked more heavily/frequently than lower-order, thematically connected generic segments (our *Subunits*).

Before moving on to the actual analysis, it is worth specifying why we believe that there might be some validity to these hypotheses. Our belief that writers might be sensitive to the type of speech act that is being expressed is grounded in work in the field of interpersonal pragmatics, in particular the distinction that is made between 'head acts', which represent the core of the speech act sequence, and constitute its only obligatory part, and 'supportive moves', which follow or precede the Head Act, and serve to mitigate or aggravate the force of the Head Act, a distinction that we also mentioned under § 2.1.23.[87] Given that requests are, in Greek and cross-culturally, one of the most important speech acts,[88] and typically function as a text's Head Act, it seems at least plausible that writers would visually mark requests more heavily/frequently than other types of speech acts. When it comes to our belief that writers might be sensitive to the generic status (higher-order vs. lower-order) of the segment that is being visually marked, it is worth referring to work that is done in the functional-linguistic tradition, in particular the key concept of 'iconicity', which refers to the fact that the relationship between form and meaning is motivated, rather than arbitrary.[89] Several types of iconicity have been discovered in linguistic analysis, relevant domains including *sequence*, *contiguity*, *repetition*, *quantity*, *complexity* and *cohesion*. One type of iconicity which we consider particularly relevant for our hypothesis here is *iconicity of quantity*: this refers to the fact that more linguistic coding tends to be used when more conceptual information is conveyed. In linguistics, this is true not just at the level of the individual word, but also at the level of discourse: in his work on subordinating strategies in ancient Greek, Michel Buijs, for example, has shown that more coding tends to be used at major breaks in discourse.[90] Applying these principles to visual structure,

86 Bentein 2023b; Bentein, Kootstra 2024.

87 E.g. Leech 2014, 174-6; House, Kádár 2021, 113-15.

88 For Greek, see e.g. Koroli 2020.

89 See e.g. Haiman 1980; Givón 1985, 1991.

90 Buijs 2005.

we would expect not only heavier coding options within a single visual system for more significant thematic breaks, but also the combination of visual cues from different systems for such significant thematic breaks. Of course, this does not mean that heavy visual marking cannot be used for lower-level segments, but rather that when higher-level segments occur, even heavier marking would be expected, at least from the point of view of iconicity.

To address our twofold research question, we proceeded in two steps:

1. in a first step, we systematically went through all informal (non-official) letters from the Everyday Writing-corpus with an image in our database, and marked all texts with indications of visual segmentation beyond the separation of the initial and final parts (most typically the prescript and farewell greeting/date), which was rather standard practice; this resulted in a corpus of little over two hundred letters, with 121 texts for the Roman period (I-III AD), and 84 for the Late Antique period (IV-VIII AD);
2. in a second step, we focused on the larger set of Roman-period letters, and systematically analysed the usage of visual cues in these documents. In what follows, we first discuss the different types of visual cueing that are attested in Roman-period private letters from the Everyday Writing corpus (§ 3.1), and then go on to discuss the relationship between linguistic structure and visual presentation (§ 3.2).

As this is an exploratory study on the basis of a relatively small dataset, which needs to be extended and refined in conjunction with our ongoing annotation work, we refrain from providing statistical data, and limit ourselves to providing a qualitative discussion of our findings.

3.1 Visual Cueing

Time does not permit us to go through all texts with indications of visual marking individually, so we will restrict ourselves to discussing and illustrating some major tendencies in our corpus. Let us start by noting that the fact that we have found up to two hundred informal letters with signs of visual segmentation in their main visual part (that is, going beyond the initial and final part with the prescript and closing greetings) is a surprise in itself, especially when we consider that there are still texts in our corpus for which we do not have an image, and that quite a few texts are too fragmentary to take into consideration. What is more, as we noted above, standard doctrine about the visual presentation of non-literary texts holds that these texts were written in *scriptio continua*, without modern word,

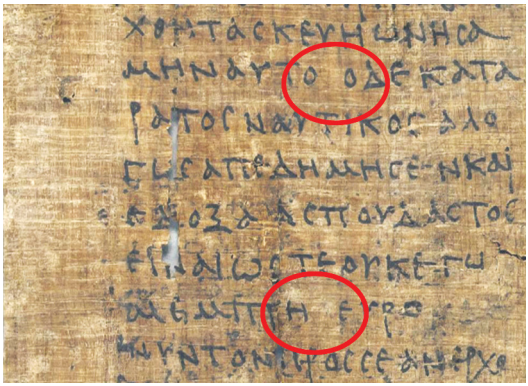

Figure 3
Letter from Demetria to Apia. *P.Hamb.* II 192, ll. 8-15 [III AD] = TM 30461. © Staats- und Universitätsbibliothek Hamburg (Gr. 404)

clause, and sentence division, so that the line, rather than the sentence, served as the main unit of visual perception.

This being said, it must be admitted that there is relatively little diversity in terms of the different visual systems that are at play: the visual cues that are attested are predominantly spatial in nature, and relate in particular to what we have referred to as *separation* above, that is, the presence of blank space, either vertical or horizontal, separating (parts of) lines.[91] In the large majority of our letters, writers employ very subtle horizontal blank spaces – known as *vacat*[92] – to visually structure the text. By way of illustration, we can turn to *P.Hamb.* II 192 (III AD) = TM 30461 **[fig. 3]**,[93] a private letter from Demetria to Apia about buying and sending goods with a very noticeable opening part, in which each of the words is visually set apart. Care has been taken to linguistically and visually structure the body of the text, too: the letter consists of five sentences, each of which, besides the first sentence, is introduced through the discourse particle δέ. Before the start of each sentence, we find a subtle horizontal blank space supporting the linguistic structure.

Blank spaces such as the ones that we find in this document can be considered 'small', by which we mean that they are the equivalent of (only) one or two letters. Exceptionally, however, writers insert much larger blank spaces, which are the equivalent of three or more letters. A striking example can be found in *P.Oxy.* XLII 3057 (I-II AD) = TM

91 Compare Fournet 2013, 153-4, who discusses the use of structuring blank spaces ('des vacat structurants') as part of the *literarisation* of Late Antique documents. Our corpus shows that this practice was in use at a much earlier time.

92 See further Martin 2020.

93 For this letter, also see Bentein 2023b, 95.

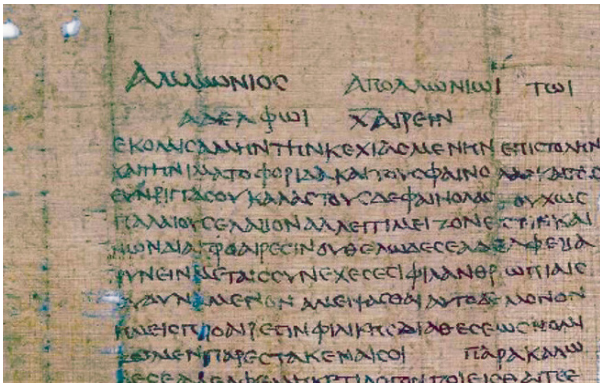

Figure 4
Letter from Ammonios to Apollonios. *P.Oxy.* XLII 3057, ll. 1-12 [I-II AD]= TM 25080. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

25080 **[fig. 4]**, a private letter from Ammonios to his 'brother' Apollonios about various topics, including the receipt of goods. Similarly to *P.Hamb.* II 192, this letter has a very noticeable opening part in which each of the words is visually set apart. In this letter, too, discourse particles, in particular δέ and γάρ, are consistently used, though the overall thematic structuring is much more chaotic. The writer has made a conscious effort, however, to visually highlight the request that he is making at l. 11, which is also strengthened linguistically through the use of the performative verb παρακαλῶ as well as the repeated vocative ἄδελφε.

One can note that the horizontal blank space that is used here is much larger compared to our previous letter, being the equivalent of ca. six letters, which parallels the space that is left in the opening between the names of the initiator and the receiver. Such large spaces can sometimes be found before the closing greeting, in case it does not form a visual block of its own.[94] In our letter, more subtle horizontal blank spaces are employed in between clauses or even inside clauses (ll. 5, 17, 28), which are more difficult to interpret from a pragmatic point of view. We return to this practice in § 3.2.

Besides the use of small and large horizontal blank spaces, there is some evidence for the use of other visual cues, though this was certainly done much less systematically – at least inside the body of the text. The use of vertical separation, for example, is quite limited: a potential example can be found in *P.Oxy.* LIX 3988 (II AD) = TM 27844 **[fig. 5]**, a relatively short private letter in which Besarion greets his brother Hierakion, expressing his well wishes and informing him of recent events in Alexandria. The overall visual impression

94 E.g. *SB* XX 15180, l. 11 (II AD) = TM 23907.

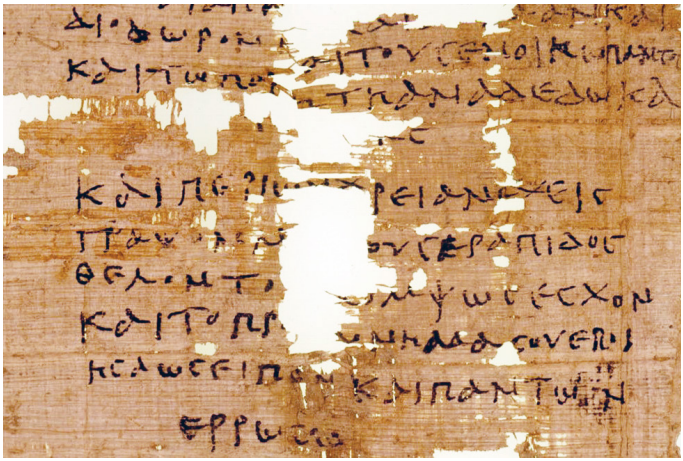

Figure 5 Letter from Besarion to Hierakion. *P.Oxy.* LIX 3988, ll. 12-20 [II AD] = TM 27844. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

of this letter is much less professional than that of our previous two examples, as indicated among others by the less experienced style of handwriting as well as the fact that the prescript is not visually set apart. Interestingly, however, the writer does visually set apart the short closing greeting (ἔρρωσο, l. 20) and also employs a separate visual block for the postscript that follows the salutations (ll. 15-19). Both the closing greeting and the postscript are visually set apart through a small vertical blank space, which is used in conjunction with other visual features, such as the use of a new line (*lineation*), and a change in alignment (the last line of the first visual block being centrally aligned, as is the closing greeting).

In our previous example, we already mentioned the use of lineation – the conscious placing of information on a new line – as a visual cueing system. As writers typically write until the end of the right margin, it is not always straightforward to detect the relevance of this visual system, so that the interpretation often must rely on the presence of other visual markings; in *P.Oxy.* LIX 3988, this involved vertical separation as well as a change of alignment. The same can be seen in our next example, *P.Oxy.* LXXV 5049 (59 AD) = TM 128890 **[fig. 6]**, a fragmentarily preserved letter to Apion from an unknown initiator. Only the last part of this letter remains, consisting of the salutation, date, postscript, and external address. What is interesting about this letter, however, is that the extensive, seven-line postscript seems to be visually structured in three segments through the use of horizontal blank spaces at the end of ll. 9, 12, 14, as well as the use of a new line. In this postscript, Apion is requested to take

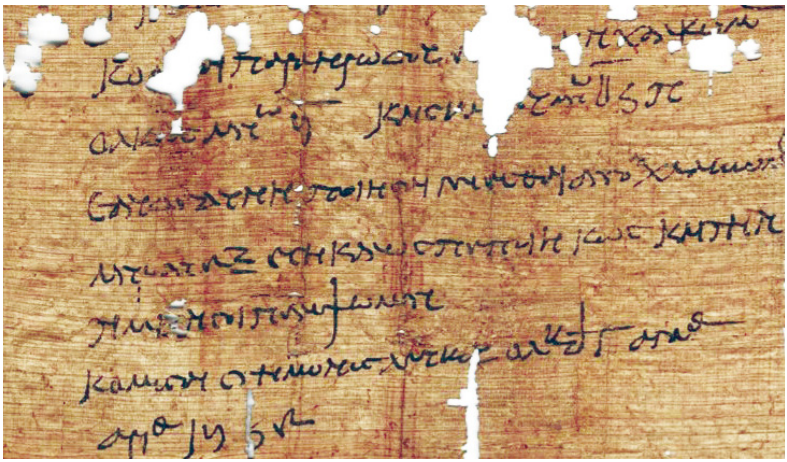

Figure 6 Letter to Apion. *P.Oxy.* LXXV 5049, ll. 8-14 [59 AD] = TM 128890. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

delivery of various objects (bronze dishes and a bowl in the first visual segment, white warp balls in the third visual segment), and asked to find another bronze dish (second visual segment). As in some of our previous examples, one can note the presence of the particle δέ in the second visual segment.

An interesting textual lay-out system that has received relatively little scholarly attention[95] so far is what we call *spacing*, which involves the extension or enlargement of single letters (word-initial or -final, or, more rarely, word-medial), and which, especially in the case of extended letters, is typically found in conjunction with horizontal separation, in the sense that the use of a lengthened letter normally involves an empty space which is occupied by the letter. This practice has particular relevance for the visual appearance of the individual line, in the sense that enlarged word-initial letters can be used to mark the beginning of a new line,[96] whereas writers can extend the final letter of a word as a way of reducing the space between the right margin and the final word, thus ending the line in a more 'harmonious' way.[97] Extended letters can also be found line-internally,

95 For some remarks based on the corpus of women's letters, see Bentein 2023b, 94, who notes that extensions of the final stroke of the last letter happen in particular with some letters, such as *alpha*, *sigma*, *tau*, and *upsilon*.

96 Some examples are mentioned in Bentein 2023b, 94. On the enlargement of individual letters, compare Sarri 2018, 118-20.

97 Compare Bagnall, Cribiore 2006, 343.

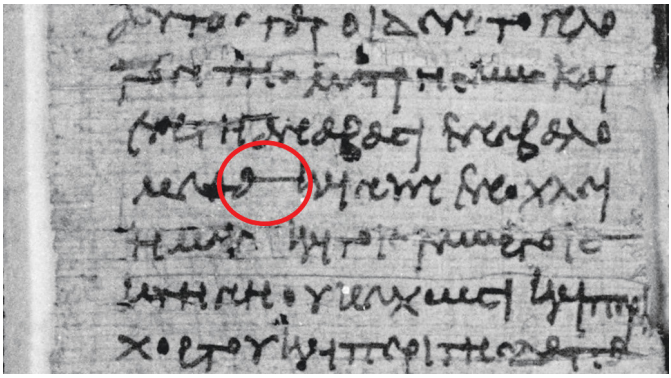

Figure 7 Letter from Dionysios to Zoilos. *P.Oxy.* XIV 1671, ll. 8-12 [244-299 AD] = TM 31782. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

where they may give shape to the internal visual structure of the document, a practice which is seemingly less frequent. An example can be found in *P.Oxy.* XIV 1671, l. 10 (244-299 AD) = TM 31782 **[fig. 7]**, a letter from Dionysios to Zoilos, in which Zoilos is requested twice to send a certain Dionysios for help, and is also asked for information. Some attention has been paid to the visual appearance of the text, as is indicated, among others, by the repeated use of *diaeresis*, as well as the extension of *alpha*, *sigma* and *epsilon* at the end of the line. Noticeably, in l. 10, at the end of the first Subunit (the first time Zoilos is requested to send Dionysios for help), the final letter of ἐνεβαλό-μεθα has been lengthened, which creates a space between this Subunit and the next one.[98]

To conclude this brief discussion of visual cueing in our corpus, we can mention the use of lectional signs, such as punctuation marks, which are of course omnipresent in modern-day texts but rather limited in our corpus. Only in Late Antiquity are lectional signs, as well as diacritical signs,[99] more consistently used in documentary texts,[100] as part of a larger trend of what Jean-Luch Fournet has called the 'literarisation' of documentary practice.[101] When it comes to our

98 For another example, see *P.Oxy.* XXXVI 2789, l. 14 (242-299 AD) = TM 30388. In this case the final letter of τοῦτου has been lengthened, which creates a visual break before the admonition.

99 We distinguish here between lectional signs and diacritical signs on the basis of the fact that the former aid in the interpretation of the text, whereas the latter aid in the disambiguation and interpretation of individual words. In actual practice, the distinction is not always easy to make; diaeresis, for example, can be used for both purposes.

100 For diacritical signs, see Fournet 2020.

101 Fournet 2003, 149-53; 2009, 36-7. Compare Ast 2017; Sarri 2018, 118.

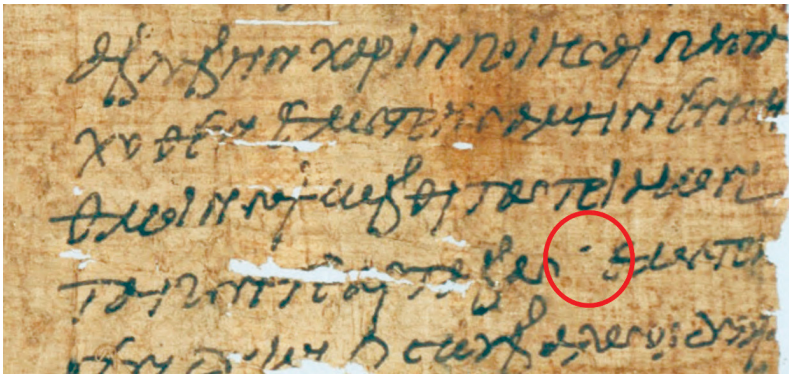

Figure 8 Letter from Lampadios to Apollonios. *P.Oslo.* II 61, ll. 4-8 [III AD] = TM 31634. Courtesy of the University of Oslo Library Papyrus Collection

Roman-period corpus, a small number of letters attests to the use of the high dot for text segmentation. One such example is *P.Oslo.* II 61 (III AD) = TM 31634 **[fig. 8]**, a short, third-century letter from Lampadios to Apollonios in which the former indicates that some payments have been made.[102] The right-leaning handwriting carries an elegant appearance, an impression which is strengthened by the fact that the scribe seems to make an attempt to leave small spaces between words and word groups, for example at l. 4 (the first line of our image). More important for our present purposes is the fact that the writer has also inserted a horizontal blank space as well as a high dot at l. 7, in between the two Units that make up the body of the text. As in some of our other examples, one can note the presence of the discourse particle δέ linguistically segmenting the body.

Another lectional sign that we find in one of the letters from our archive, *P.Oxy.* LXVII 4624 (I AD) = TM 78663, is the *paragraphos*.[103] We will return to this specific letter in § 3.2. Suffice it for now to say that the use of the *paragraphos* inside the main visual part of private letters is quite unique.[104] The few examples that we have are mostly used to visually segment the final part,[105] to visually separate the

102 Other texts with interpunction include *P.Oxy.* XII 1588, l. 8 (III AD) = TM 31770; *P.Oxy.* VI 933, l. 23 (III AD) = TM 31322. A fascinating Latin letter where punctuation is consistently used is *C.Ep.Lat.* 10 (25 BC-25 AD) = TM 78573.

103 For brief discussion, see Barbis Lupi 1994.

104 For another potential example, see *PSI* I 93 (III AD) = TM 31260, where a *paragraphos* is found in between lines 22 and 23.

105 E.g. *P.Oxy.* X 1291 (30 AD) = TM 21763, where a *paragraphos* is used to separate the two constituent parts of the date (ll. 13/14). See Bentein 2023b, 96.

initial/final part from the main visual part,[106] or to indicate the end of the letter.[107] Its usage is more frequent in formal texts, however.

3.2 Linguistic Factors Impacting Visual Presentation

Having explored the significance of the diverse visual systems within our corpus, with the exception of text offsetting and pagination, which are not typically used for text segmentation inside the main visual part of private letters, we can now pivot back to our principal research inquiry: that is, whether and to what extent generic and pragmatic structure impacted the visual presentation of the text.

The exploratory analysis that we have performed on Roman-period letters shows visual cueing in the body to occur most frequently with two types of speech act (whether at the level of Units or Subunits), namely Request and Statement. Other speech acts which are visually underlined, though much less frequently, include Assertion, Description, Resolve, and Suggest. That requests and statements should be most frequently visually marked does not come as a surprise, since these two speech acts are also very frequently attested in our corpus, so that one would need to engage in exhaustive generic structure annotation to better understand the relative frequency with which these speech acts are visually cued. That writers had an overall pragmatic (illocutionary) sensitivity that went beyond the marking of regular generic structure, especially for requests, is indicated by texts such as *P.Oxy.* XLII 3057 (I-II AD) = TM 25080 **[fig. 4]**, which is a thematically complex and chaotic letter, where the writer has nevertheless very consciously put a heavy visual break right before the performative request verb παρακαλῶ. More research needs to be done on thematically complex texts such as this, to see whether there are more examples where writers heavily mark one specific thematic block, and whether this consistently happens with one speech act rather than the other, or whether it is a matter of individual choice and emphasis.

An interesting example of a letter that displays visual sensitivity to both requests and statements is *P.Oxy.* I 116 (II AD) = TM 28408, a relatively long business letter from Eirene to Taonnophris and Philon **[fig. 9]**. Contentwise, this letter consists of three thematic blocks (ll. 2-10, ll. 10-16, ll. 17-20), which are similar in structure and

106 In *PSI* XIV 1418 (III AD) = TM 30468, one finds the use of the *paragraphos* after the opening frame (including the greeting, health wish and the *proskynema*). See Bentein 2023b, 97.

107 As in *P.Oxy.* XLIX 3501 (III AD) = TM 30177. In *P.Oxy.* LXII 4340 (250-275 AD) = TM 31664, the *paragraphos* separates the two private letters that are jointly found on a single papyrus sheet.

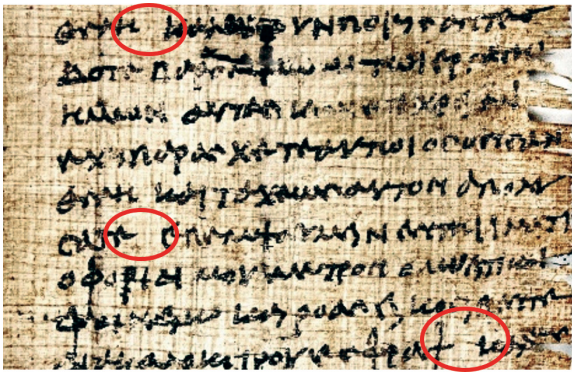

Figure 9
Letter from Eirene to Taonnophris and Philon. *P.Oxy.* I 116, ll. 5-13 [II AD] = TM 28408. © Clifton College Archives

phraseology: in each of them Eirene makes a statement about an act that she has undertaken (δέδωκα 'I have given', l. 2; ἔπεμψα 'I have sent', l. 10; ἔπεμψα, l. 17), which in the first two cases is followed by a request introduced by the formulaic phrase καλῶς ποιέω (καλῶς οὖν ποιήσαντες | δότε 'please give', ll. 5-6; καλῶς | ποιήσαντες πέμψατέ 'please send', ll. 13-14). In the first two, thematically more complex, blocks, statements are separated from ensuing requests through the use of a blank space. The third block, on the other hand, is not visually separated; as it starts on a new line (our lineation), the scribe may have felt that visually speaking this was sufficient.

In letters which contain multiple visual cues, such as *P.Oxy.* I 116, it may be difficult to tell whether these cues are primarily triggered because of the pragmatic structure, or rather because of the overall generic structure: did the writer leave blank spaces because of his/her wish to underscore the requests and statements that are being made, or rather to make clearer the generic structure of the letter? Given the presence of multiple such spaces, one might be inclined to attribute greater likelihood to the second scenario, though if that were true, one would expect heavier blank spaces between higher-order generic blocks than between the Subunits within each generic block. This is not the case though: both higher- and lower-order segments are marked identically.

More surprising still is the fact that sometimes writers highlight lower-level segments, but not higher-level ones, which goes against our earlier-mentioned principle of iconicity and suggests – to the modern eye at least – a lack of systematicity with which visual cueing was done. One such example is *P.Oxy.* II 293 (27 AD) = TM 20564 **[fig. 10]**, a letter from Dionysios to his sister Didyme about some clothes, which is unfortunately only fragmentarily preserved. Oddly, the writer does not bother to distinguish the opening section of his letter – which includes a greeting and health wish – from the rest of the letter body

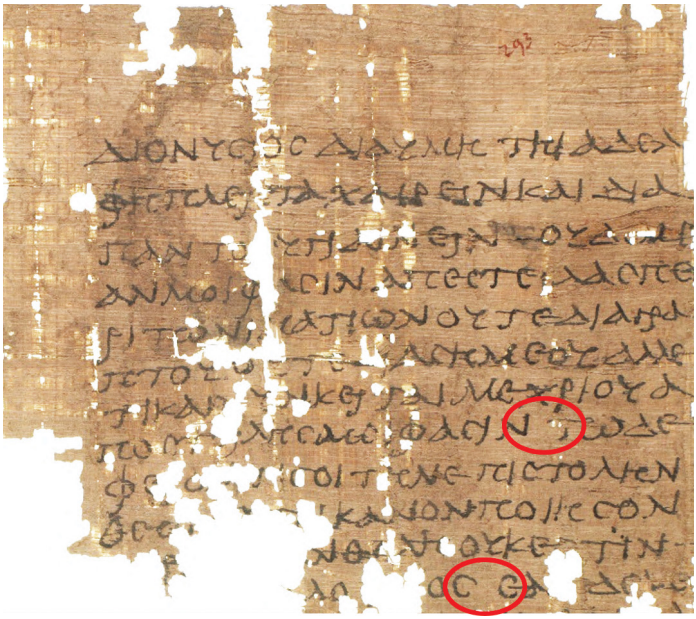

Figure 10
Letter from Dionysios to Didyme. *P.Oxy.* II 293 [27 AD] = TM 20564. © Columbia University Papyrus Collection

(l. 3), but then does insert a small but noticeable *vacat* at l. 8 between the body's two main Units, which is also supported linguistically through the use of δέ. There seems to be another space at l. 12, but unfortunately we do not have enough textual context to interpret the meaningfulness of this second space.

To further illustrate this lack of systematicity, if we may call it so, we can turn again to *P.Oxy.* LXVII 4624 (I AD) = TM 78663 **[fig. 11]**, a business letter from the gymnasiarch Dios to his agent Sarapion about three clearly distinguishable topics, namely (i) the selling of grain and lentils (ll. 1-7), (ii) the collection of various sums of money (ll. 7-11), and (ii) the woodwork of an outhouse (ἐξέδρα) (ll. 12-19), each of which can be subdivided into two Subunits. The letter is exceptional in the sense that its writer makes use of several of our visual systems,[108] including separation (small and large *vacat*), lectional signs (*paragraphos*), and lineation (with many short lines that include blank spaces at their right side) – which, the editors suggest, also had a social-semiotic function, namely to emphasise the document's function as a *memorandum*.[109]

108 For a diplomatic rendering of the text, see Harrauer 2010, 284-5.

109 Coles et al. 2001, 257.

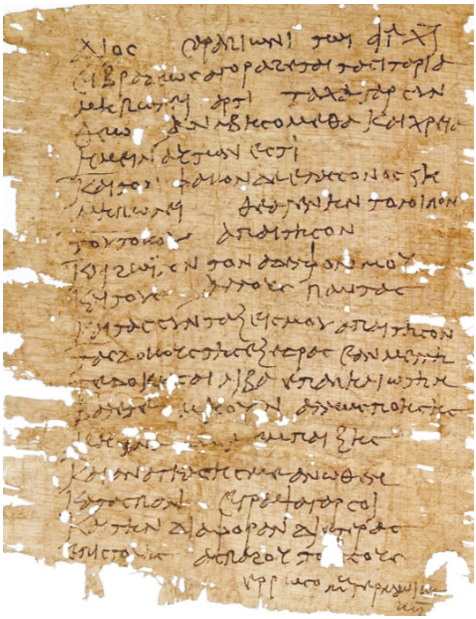

Figure 11
Letter from Dius to Sarapion. *P.Oxy.* LXVII 4624 [I AD] = TM 78663. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford

Puzzlingly, all three of these visual systems are used not only to divide the three central Units, but also Subunits, and even syntactic units, going to the level of individual words, resulting in an utterly unclear visual segmentation of the document.[110] So, for example, we find a *paragraphos* between Units two and three, but also in between the Subunits of Units one and three, and even between the syntactic components of Unit 2 (Θεαγένην τὸ λοιπὸν [*paragraphos*] τοῦ τόκου ἀπαίτησον [*paragraphos*] καὶ Ζωίλον τὸν ἀδελφόν μου).[111] The same can be said about the use of *vacat* (small and large): it distinguishes Units one from two (large *vacat* in the middle of line 7), but is also used between the Subunits of Unit one, as well as between syntactic components (μὴ πώλει [*vac*] ἄρτι; τὸ λοιπὸν τοῦ τόκου [*vac*] ἀπαίτησον), and even between an article and its noun (τοὺς [*vac*] ἄλλους). The same is true for lineation: after line 5, the choice for a

110 Harrauer 2010, 285 is more positive in his evaluation: "Den mit rigiden Anweisungen reichen Geschäftsbrief […] zeichnet nicht nur eine klare Struktur, von Paragraphoslinien und Spatien im Text unterstützt, sondern auch eine deutliche Schrift aus".

111 In the last part of the letter, in the admonition, we find a *paragraphos* between two subordinate clauses: μὴ οὖν ἄλλως ποήσῃς, μὴ ἵνα μοι ἐμπαίξῃς [*paragraphos*] καὶ ἀναγκάσῃς με ἄνωθεν κατασπᾶν 'So don't do it any other way, lest you play a trick on me and force me to pull it down again'.

new line is related, perhaps, to a Subunit within the first Unit, but after line 8 it seems more difficult to motivate.

P.Oxy. LXVII 4624 is in several regards an exceptional case, but the attention to what one can call lower-level visual marking is not: in other documents, too, spaces are frequently inserted in between words, word groups and/or clauses, thus marking syntactic, rather than generic or pragmatic Units. In several texts, both types of Units – syntactic and discourse-pragmatic – are marked, without much distinction between the type of visual marking that is used. An example is *P.Oxy.* VIII 1157 (III AD) = TM 31723 **[fig. 12]**, a letter from Patermouthis to his sister Dionysia about a registration for the census (ll. 3-13) and a payment of the poll-tax (ll. 14-21), both of which he wants his sister to do for him. The writer has inserted a noticeable horizontal blank space at l. 19 **[fig. 12A]**, which seems to mark a Subunit within a larger request Unit about paying the poll-tax, which is marked, again by the particle δέ (ἐὰν δὲ διαγράψῃς | τὸ ἐπικεφάλαιον, δέξαι | τὴν ἀποχήν [ll. 19-21] 'and if you pay the poll-tax, get the receipt'). A second noticeable horizontal blank space, of about the same size or even slightly larger, can be found earlier on in the letter, at l. 6 **[fig. 12B]**. Surprisingly, this second space has a different function, namely the marking of sentence structure, which in this case is somewhat complex, with two causal clauses preceding the main clause, one introduced by καθώς and the other by ἐπειδή (καθὼς ἔπεμψάς μοι φάσιν | ὡς ἐνένεκεν τῆς ἀπογρα-|φῆς περὶ τοῦ ὑμᾶς ἀπογρά-|ψε, [*vac*] ἐπιδὴ (l. ἐπειδὴ) οὖν οὐ δύνα-|μαι ἀναβῆναι ἴδε ἡ (l. εἰ) δύνῃ | ἡμᾶς ἀπογράψε [ll. 3-8] 'As you sent me word on account of the registration about registering yourselves, since I cannot come, see whether you can register us').[112]

112 Compare *PSI* XIII 1334, ll. 8 and 11 (III AD) = TM 30570.

A. ll. 17-21 **B. ll. 3-7**

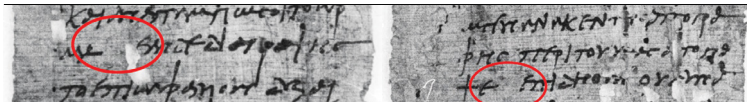

Figure 12 Letter from Pathermouthis to Dionysia (*P.Oxy.* VIII 1157 [III AD] = TM 31723. Courtesy of The Egypt Exploration Society and the Faculty of Classics, University of Oxford)

In other texts, the use of (especially) small *vacat* is much more frequent:[113] an interesting case is *PSI* VIII 970 (III AD) = TM 30713 **[fig. 13]**, a business letter from Diogenes to Harpokration in which Diogenes instructs the latter to go to Pasion and deal with some important matters which he himself cannot attend to as he unable to travel. In this elegantly written letter, syntactic units of different magnitudes are subtly marked through horizontal spaces: one finds, for example, a significant space at l. 4, separating the participial clause from the main (request) verb πορεύου, which itself is followed by a more subtle space preceding a prepositional phrase (εὐθέως κομισάμεν̣ο̣ς τὸ ἐπισ-|τόλιον [*vac*] πορεύου [*vac*] πρὸς Πασίων[α] [ll. 3-4] 'as soon as you have received the letter go to Pasion'). Space prevents us from discussing the multitude of blank spaces that are present in this letter, but it is worth drawing attention to line eight, where no less than three segments seem to be marked (οὐ γὰρ ὀλίγα ἐστὶν τὰ ἐνθά-|δε [*vac*] ζητούμενα, [*vac*] αὐτὸς τὲ [*vac*] ἐγὼ [ll. 7-8] 'for the matters that are sought here are not few, and I myself …'): a first, subtle space is placed after ἐνθά-|δε, perhaps marking its status as a word split; the next space comes after the following word, ζητούμενα, the last letter of which is lengthened, seemingly indicating the boundary of the first coordinated clause; and then comes the most significant space, which is placed after αὐτὸς τέ, despite its close connection with ἐγώ.

In *PSI* VIII 970, visual segmentation through blank spaces, while ample, is relatively subtle, but there are other examples where the same practice is much more pronounced.[114] This raises a number of questions which we hope to address more thoroughly in future work, to the extent that our sources allow us to do so. In terms of reading strategies, modern scholarship has emphasised the fact that reading is not a purely linear phenomenon: Anthony Baldry and Paul Thibault, for example, recognise that readers may engage in so-called 'cluster hopping', that is, jumping from visually salient clusters of information

113 Compare Bentein 2023b, 95 for the use of word spaces in the corpus of women's letters.

114 See e.g. *P.Oxy.* LV 3806 (15 AD) = TM 22528; *P.Oxy.* XLII 3062 (I AD) = TM 25082; *PSI* IX 1080 (III AD) = TM 30667.

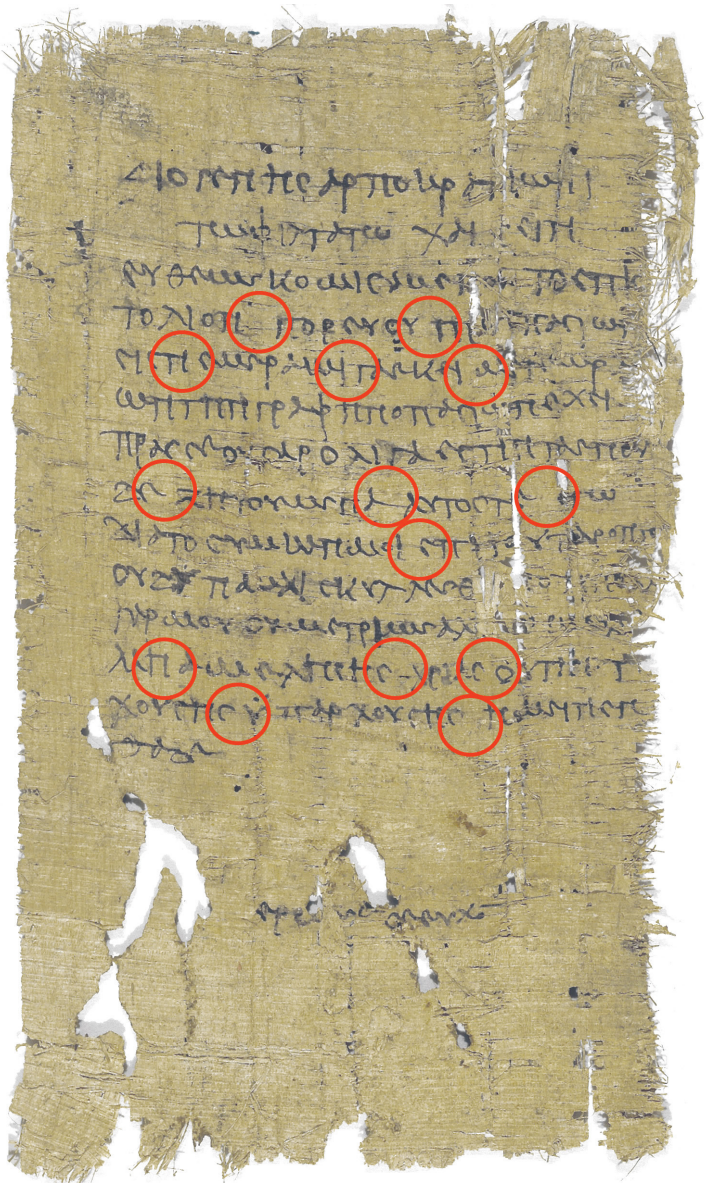

Figure 13 Letter from Diogenes to Harpokration. *PSI* VIII 970, ll. 3-14 [III AD] = TM 30713.
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on the page.[115] While it seems clear that the setting aside of the prescript with the name of the initiator and receiver was of relevance to non-linear reading, one wonders whether readers would have 'cluster hopped' inside the body of the text, too.[116] In terms of writer motivation, investigating how consciously visual cues such as *vacat* were inserted becomes essential, as well as exploring whether a distinction in terms of the visual salience of the eight proposed visual systems (along with the three larger categories within which they can be grouped) should be made. Engaging more deeply with the relevant literature in the field of cognitive psychology, especially *Gestalt* psychology, could shed light on the cognitive saliency of various types of visual cues and human visual attention mechanisms more broadly, although navigating this highly specialised literature is a challenging task. From the data annotation perspective, reflecting more elaborately on the desirability and possibility of more accurately distinguishing between syntactically and discourse-pragmatically motivated visual cues is crucial. This includes considering a further distinction between visual cues highlighting generic versus pragmatic structure, a topic that we have only briefly addressed here.

An important factor to keep in mind for this discussion is that the composition and reception of written documents was very different in antiquity from nowadays, orality playing a much more significant role – that is, letters were often dictated to a scribe,[117] and read aloud when received, potentially to a broader social group.[118] This could entail that our lower-level visual cues – spaces in particular – are better conceived of as marking units of spoken language (whether in terms of production or reception) than of written language, or perhaps a

115 Baldry, Thibault 2006, 26. Compare with the five different types of reading recognised by Pugh 1975, called 'receptive reading', 'responsive reading', 'skimming', 'searching', and 'scanning'. Alternatively, Doermann, Rivlin, Rosenfeld 1998, 800 distinguish between 'reading', 'browsing' and 'searching'. More recently, Bateman 2011 has argued for the existence of three distinct semiotic modes on the written page, 'text-flow', 'image-flow', and the (composite) mode of 'page-flow'.

116 It is worth mentioning here the work of Schubert 2018, who, focusing on administrative documents, argues that ancient scribes used various layout strategies to facilitate reader comprehension, especially in societies like Greco-Roman Egypt, where literacy levels varied widely among the population. These layout strategies served both to increase legibility and to guide the reader through the document, enhancing understanding and ensuring that administrative processes were followed correctly. They included the use of purposeful blank spaces known as 'windows'; a structured layout with clear segmentation between the opening, body and closing, and a clear setting apart of the names of the initiator and receiver; standardised formats with consistent use of formulas; and visual cues such as symbols and abbreviations.

117 For the different degrees of agency that scribes could take on, compare e.g. Richards 2004, 56-67, who distinguishes between ancient secretaries' roles of *transcriber*, *contributor* and *composer*.

118 See further Verhoogt 2009.

combination of both. An interesting distinction that one can refer to in this regard is that made by the cognitive linguist Wallace Chafe between 'intonation units' and 'punctuation units':[119] the former, typically two to seven words long, are short segments of speech marked by distinct intonation patterns, reflecting the speaker's immediate focus; the latter, on the other hand, segment text, indicating syntactic and rhetorical boundaries; while they often align with spoken intonation units, they allow for more explicit structuring and linkage of ideas. Another property of oral composition, is that it entails much less discourse planning than written composition, which could explain the lack of systematicity that we find in many of our examples.[120]

4 Conclusion

This contribution is the product of the combination of multiple fields and approaches. In the first part of the article, we have shown how the textualisation of discourse is organised around segments of text that can be better understood considering the pragmatic structure behind them. Putting the communicative functions at the centre of our analysis, the approach that we have employed has the advantage of considering letters on papyri as a series of communicative acts, which can in turn disclose more the social and cognitive aspects of letter-writing. In the second part of this contribution, our exploration into the textual and visual organisation of Greek letters on papyrus from the Roman period has illuminated the intricate interplay between linguistic expressions and visual cues, with particular attention to the marking of both generic and pragmatic structure.

It is worth highlighting what we consider to be some of the most important features of our annotation framework, focusing here on three key elements. First, our framework offers concrete tools for studying textualisation, emphasising the interplay between linguistic and visual structures. Second, it also facilitates detailed analysis of textual culture by identifying patterns within and across genres, both synchronically and diachronically. Third, the culture-independent nature of our framework supports the annotation of non-literary texts in various languages and enables cross-cultural comparisons, as evidenced by previous work on the multilingual Qurrah archive. Furthermore, text-structural annotations not only have intrinsic value but also enhance our understanding of word-or phrase-level linguistic and typographic features. Team members have uncovered potential correlations between the use of iota adscript and performative

119 E.g. Chafe 1988.

120 For discourse planning applied to papyri, see Bentein 2023b.

request verbs, abbreviations in specific (Sub)Units of petitions, and multiscriptal phenomena in the closing Units of formal texts such as contracts. These findings illustrate the importance of fully annotating our corpus for generic and layout structures, allowing for detailed exploration of such correlations.

Looking ahead, the vast potential for further research in this domain remains untapped. Future studies could explore comparative analyses with other text types and periods, investigate the role of orality in shaping document design, and leverage advanced digital tools to uncover patterns and practices not readily visible through traditional analysis. The development of a digital viewer for future students of papyrological texts, automatically mapping generic and/or layout structure to the edited text, would allow for a much more fine-grained reading of the text.[121] While the database environment that we use for our annotations[122] already allows us to manipulate the display of the edited text to reflect these different types of structure, at least to some extent, we should ensure that the annotations are maximally machine-actionable and that they are made in a maximally consistent manner across contributors. Additionally, it will be important that we can share the results of our annotation work with other projects and scholars to foster collaboration and further research, for example by developing a TEI-conversion tool.

It goes without saying that much still needs to be done to refine the methodology and extend the analysis. However, the groundwork laid by this research offers a promising direction for future inquiries into the processes through which ancient societies produced and received textual messages.

121 For examples of such digital viewers applied to papyri, see e.g. the Arabic Papyrology Database (`https://www.apd.gwi.uni-muenchen.de/apd/project.jsp`) and the Grammateus project (`https://grammateus.unige.ch/`).

122 For further technical details, see Bentein 2024.

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