NEW TESTAMENT STUDIES AND PAPYROLOGY:
WHAT CAN WE LEARN FROM EACH OTHER?

1. Introduction

There was a time when a number of New Testament scholars had first-hand acquaintance with the actual manuscripts of their discipline. Such names as Konstantin v. Tischendorf, Caspar Rene Gregory, J. Rendel Harris, and W. H. P. Hatch come to mind, among others. There was also a time when a number of New Testament scholars, even if they did not work first-hand with the manuscripts, utilized the resources in a direct and accessible fashion to inform their work in important ways. Such names as James Hope Moulton and George Milligan come to mind. There was also a time when a number of major papyrologists were also trained as biblical scholars, or at least had serious and sustained interests in this domain. Such names as, Konstantin v. Tischendorf, Karl Wessely, and Peter Sanz may be mentioned. The discipline of New Testament studies has changed significantly since that time, however. Of course, there are still a number of papyrologists who have serious interest in biblical manuscripts (e.g. Cornelia Römer), and a number of trained theologians who have become New Testament papyrologists as well (e.g. Juan Chapa among others). However, whereas papyrologists continue to pay close attention to the manuscripts that continue to be published, as well as re-editing and re-interpreting a number of important previously published manuscripts, New Testament scholars appear to have gone in another direction almost entirely. Indeed, there are a number of New Testament scholars who are involved in what is called textual criticism, but few of these in my experience actually examine the manuscripts themselves (a few exceptions are J. H. Greenlee, Albert Pietersma, David Parker and J. K. Elliott), often contenting themselves with photographs or even printed versions or less. Their number in a field as large as professional New Testament studies today is relatively small.

In the light of this situation, one might legitimately ask the question of what can each group learn from the other. What I wish to propose is that some of what appear to be the by-ways of New Testament studies have potential for informing papyrological studies, and that some of the constant concerns of papyrologists hold out hope of reviving interest in essentials for New Testament study.

2. What Can New Testament Scholars Learn from Papyrology?

When I was studying for one of my degrees in New Testament studies, one of our professors used to intone that we should always keep our finger on the text. One of us came up with the retort that that was one of the major problems — our fingers were getting in the way of seeing the text. What we joked about then is, unfortunately, still true today. Most New Testament scholars learn their profession by studying an eclectic text of the New Testament. This text does not conform exactly to any of the over 5000 New Testament manuscripts. Instead, it is a hypothetical reconstruction based upon two major fourth-century codices, Sinaiticus and Vaticanus, with a liberal sprinkling of other readings from other codices, as well as the over 120 papyri (although fewer from these than might be expected). The modern eclectic text is so firmly enshrined in New Testament studies that I would not be surprised if a number of New Testament students think that the manuscripts of the New Testament come with a critical apparatus at the bottom of the page.

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*I would like to thank Hermann Harrauer and Bernhard Palme for asking me to prepare this paper. I wish also to thank them for making wonderful papyrological opportunities available to my wife and me in Vienna. Such friends and colleagues are priceless and irreplacable.

1 There are other New Testament scholars who, while not publishing New Testament papyri, edited other relevant manuscripts, such as E. J. Goodspeed. In more recent times Robert Kraft has published on the Septuagint.
Recently, my wife and I published a fragment of the book of Acts⁵. The information for this papyrus will no doubt eventually make its way into the critical apparatus of the Greek New Testament. However, this information will be deceptive. When a New Testament scholar looks at the beginning of the book of Acts, he or she sees:

ΠΡΑΞΕΙΣ ΑΠΟΣΤΟΛΩΝ

1 Τὸν μὲν πρῶτον λόγον ἐποιησάμην περὶ πάντων, ὁ Θεόφιλε, ὃν ἠρξατο ὁ Ἱησοῦς ποιεῖν τε καὶ διδάσκαιν, 2 ἃρχε ἡ ἡμέρας ἐντειλάμενος τοῖς ἀποστόλοις διὰ πνεύματος ἁγίου οὐς ἐξέλεξατο ἀνελήμφθη. 3 οἴς καὶ παρῄσχεσαν ἅκατον ἄνωτα μετὰ τὸ πάθειν αὐτὸν ἐν πολλαίς τεκμηρίοις, δι’ ἡμερῶν τεσσαράκοντα ὄπονόμην αὐτοῖς καὶ λέγαν τὰ περὶ τῆς βασιλείας τοῦ θεοῦ.

Fig. 1: Acts of the Apostles 1. 1–3 in Modern Edition

The text is there in its integrity, without any lacunae and with a few textual variants noted at the bottom of the page. Here is a picture of one side of the fragment of Acts that we edited:

Fig. 2: P.Harrauer, Plate 2 (= P.Vindob. G 19927)

Of course, it looks much like many other biblical papyri of the sixth century. It is somewhat fragmentary, but enough is here for positive identification and creation of an edition (although the verso is not nearly so clear). But it is far from a complete text. In fact, here is what this fragment would contribute to the text of Acts 1 in the format of the standard Greek New Testament:

Fig. 3: Acts of the Apostles as Found in P.Vindob G. 19927 (P.Harrauer 2)

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Reading this text is quite a different experience from reading the nicely reconstructed eclectic text.

The use of an eclectic text has several effects upon New Testament study. A major one is that it gives a mistaken notion of the very concept of text. What is a product of modern scholarship is represented as accurately reflecting the earliest manuscripts, when in fact it is nothing of the sort. It is close in many instances, perhaps, but it is not a representation of a manuscript used by any ancient community of early Christians. This position has implications for study of this text. One is that few New Testament scholars today have first-hand acquaintance with any of the manuscripts that are reflected in their text and cited in their critical apparatus. They may have seen a photograph of the opening of Ephesians in Sinaiticus and know that ἐν ἔρεσι ὄντα is written in the margin, but they do not have a concept of continuous majuscule writing, without systematic accentuation or punctuation. They have little knowledge of phonetically based spelling, including the prevalent itacisms of so many manuscripts, and the resulting ambiguous forms. Indeed, they have little knowledge of the numerous textual variations among manuscripts, because the eclectic text that they use has a limited number of variants noted in the apparatus (about 1400 in the UBSGNT, and 10,000 in the Nestle-Aland, but with fewer manuscripts cited). The reality of this textual situation came home to my wife (a scholar in her own right) a number of years ago, when she first took a look at a page of Sinaiticus and counted 36 or so corrections on one page alone. With such limited exposure, many New Testament scholars have only a limited knowledge of what a variant is and how to assess it. The tendency — despite injunctions to the contrary in the standard handbooks of textual criticism1 — is to examine each variant in isolation, as a choice among two or three options represented by various groups or families of manuscripts. There is often little real consideration of how this variant might relate to others. This is because few are using the actual manuscripts (or even their facsimiles) in their estimation so that larger patterns can be observed, and because the limited critical apparatus makes it difficult to get a clear estimation of patterns of variation within a given manuscript. There is virtually no access to larger patterns of usage. The resulting tendency is to lose sight of individual manuscripts and to focus upon families or types of manuscripts in deciding readings on an ad hoc basis.

As a result of such a situation, I think that there are a number of things that New Testament scholars can learn from papyrology. One of these is an appreciation for the actual manuscripts. This is not just an idealized veneration of the old, but the realization that the manuscripts themselves represent the actual product of human endeavour, with all of the peculiarities, beauties and faults of such products. They are not simply avenues to the ideal text. The New Testament did not originate in a modern printed edition, with the letters excellently formed by electronic typesetting, but the text originated in hand-scrawled form. With this appreciation of the original manuscripts comes a realization of the effort involved in their preservation, restoration, transcription, identification, and interpretation. There are no lacunae in modern printed New Testaments, no abrasions, no ill-formed letters, no breaks or decay. All of these provide challenges for the papyrologist that are not confronted by the New Testament scholar. It is understandable that so much of the work of papyrology is devoted simply to establishing the readings of texts, with all of the difficulties involved. But the hard work has a singular reward, the deciphering of a text that perhaps no one has read in centuries, if not millennia, and whose secrets have been hidden until now. New Testament scholars tend to assume such knowledge and wish to move straight to the act of interpretation, taking as read that the text — with a few relatively minor variants — is virtually certainly established. The actual fragility of the text, both in terms of the actual manuscript and what it represents, is lost to them.

One of the most useful results of much papyrological work — besides the decipherment of numerous documents — is the knowledge gained from them. In the area of New Testament manuscripts, this has often been confined to a set of textual variants. These individual variants are obviously important, since in a number of key instances they represent radically different readings in a textual tradition. More important, however, is what can be learned about the tradition represented by the manuscript itself. I would not want to minimize the importance of any given variant reading from one manuscript to another, but to my mind more important is describing the character of an entire manuscript on the basis of the types of variants that are to be found. New Testament scholars have a tendency to want to categorize manuscripts, and have done so in a variety of ways. In the earliest period these manuscripts were categorized according to genealogical relations. This notion led to the idea that, just as in a human family, the manuscripts are offspring of each

other, sharing some traits and deviating in others⁴. The assumption is that one can work back through the alterations within a genealogical line to the earliest archetype. Later attached to this notion was the idea of manuscripts being associated with particular geographical locations. These frameworks have been dispelled, however, because there have been a number of variants that do not seem to follow their genealogy and are not consistent according to location. As a result, most New Testament textual critics prefer to speak of textual types. A textual type is characterized by having a significantly large number of textual similarities in common, enough so as to identify the type itself and to distinguish it from others.

What is lacking from the above is that New Testament textual critics not only have lost sight of the particular manuscripts, as noted above, but they have lost sight of the relationship between the manuscripts and the world that created them. When manuscripts were identified with various locations, there was at least the possibility of a creative interplay between the place of origin of a manuscript in terms of its history, culture and especially theology, and the readings of the manuscript. Now that manuscripts have been separated from their geographic location, manuscripts are seen to be reflective of individual characteristics rather than those associated with particular locales. There is even less of a sense that manuscripts reflect an evolving and developing manuscript tradition, but rather they are treated simply as repositories of variants, as if all 5000 manuscripts were a giant container with these variants within them.

The manuscripts of the Greek New Testament are obviously the most important manuscripts for New Testament textual critics, as well as for most New Testament scholars. However, there are a large number of other manuscripts that ought to figure into the thinking of New Testament scholars that are less often taken into consideration, as they are in papyrological studies. Deissmann’s *Light from the Ancient East* was an important book for New Testament scholars, and others alike⁵. However, there have been few works like his since that have attempted to provide for New Testament scholars what Roger Bagnall has done for ancient historians and papyrologists — that is, show how these primary texts can and should be used in reconstructing the ancient world⁶. For many New Testament scholars, the wealth of resources available is rarely if ever explored. Since the time of Deissmann, there have been a number of important further discoveries that should be taken into account in trying to use papyrological discoveries in New Testament research⁷. There have been a number of further documentary papyri that add to our knowledge of ancient koine and its various literary forms. There have been a number of further discoveries of apocryphal gospel texts that can and should be taken into some account⁸, and there has been the discovery of the Qumran manuscripts, which include some in Greek. There are of course manuscripts in other languages as well, such as those in Coptic, that also merit attention.

The Greek Qumran manuscripts are a case in point where a model of ancient historiography and the study of primary documents could well benefit New Testament scholars⁹. When the Greek manuscripts from Cave 7 were first published, it was speculated that they may have been Greek apocryphal Old Testament texts. Later it was posited by one scholar in particular, and later supported by a few others, that perhaps several of these documents were New Testament texts, such as a fragment from Mark’s Gospel. It was at this point that there was a strong reaction from the vast majority of New Testament scholars, who contended that this simply could not be the case (in fact, the outcry continues). The manuscripts clearly left room for interpretation, since none appeared to match the major codexes in all respects, and they were fragmentary. To my mind the more important issue was that there was not a conceptual framework in which to interpret these manuscripts. Or rather, there was a conceptual framework and it was one that excluded the possibility of there being New Testament manuscripts at Qumran. There are two paradigms for treating Jewish and

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⁷ One of the most useful sources for this material is *New Documents Illustrating Early Christianity* (8 vols. to date) (ed. G. H. R. Horsley et al.), North Ryde, N.S.W., Australia 1981.
Christian documents of this early period, and they have so little in common, that it becomes difficult to discuss how these Greek manuscripts — if they were anything other than Jewish texts — got to be there. I am not saying that these are Christian texts, but what I am saying is that New Testament scholars are not entirely clear in how to use primary documents as a means of reconstructing the world of their texts. Instead, they tend to use these documents as support for a world that they have arrived at through other means. Until New Testament scholars develop their own means of integrating these documents into a way of viewing the ancient world, they will be dependent upon papyrologists and others to do such world-creating for them.


From what I have said above, it may seem as if the learning process must move in one direction only, that is, from papyrologists to New Testament scholars. There clearly are a number of areas where New Testament scholars can stand to learn much from papyrologists, even about the documents that form the basis of their intellectual enterprise. I do not wish to minimize this. Having tried to live in both worlds for a number of years, I can say that there is a very different feel about such things as evidence, the significance of primary texts, the importance of using documentary evidence in reconstructing the ancient world, and the like. However, this is not to say that there are not some things that can be learned from New Testament scholars by papyrologists. I think that there are two areas that merit attention.

a. Theory and Data

The first is in terms of the relation between theory and data. I have noted above that papyrologists concentrate upon data. They are still in the midst of accumulating data, because there are still so many manuscripts that have not yet been published. In that sense, there has probably not been as much synthesis as could be. There are of course a number of important syntheses that have taken place, such as the study of the Zenon archive from Ptolemaic times, or the Heroninos archive from Roman times, but these are relatively small in number when compared with the kinds of studies done of a variety of Christian communities, often on the basis of much less evidence. For example, there are numerous studies of various communities that produced the Gospels, including major studies of the Johannine community10, and much speculation about various Pauline communities and their relation to his various letters (e. g. Corinth or Galatia). There is probably less primary evidence for most of these Christian communities than there is for any number of individual scribes at Oxyrhynchus or other places. Nevertheless, that does not stop New Testament scholars from speculating about such communities. In one sense, the lack of certain types of primary evidence, rather than becoming a hindrance, becomes a virtue in that it requires a fecund imagination to speculate and create a useful hypothesis. Papyrologists are burdened with the need to restore, transcribe and publish the huge number of still unpublished manuscripts, often leaving less time to reflect further on those already published. Papyrology is threatened by the sheer quantity of its data. In this area, papyrologists could probably learn from New Testament scholars.

Enlightening in this regard is recent work on censuses11. This of course has a bearing not only on the entire structure of registration and taxation in Roman Egypt, but also on the related issue of censuses outside of Egypt, of which the purported Lukan census is an important one to study. Through the years there have been numerous attempts to shed light on this Lukan census, with various proposals having been made. Bagnall and Frier have provided a useful synthesis of much data regarding Roman Egypt. One of the most enlightening studies of late has been one that has drawn upon some papyri from Arabia, in the Babatha and now the Salome Komaiße archives12. Papyrologists have long been aware of the census returns. It is only in recent times, however, that their importance for such issues as social control and regulation has come to the fore. A few recent New Testament scholars have combined the evidence from the literary and papyrological sources inside and outside of Egypt, put it within a framework of client kings and other Roman social

controls\textsuperscript{13}, and noted several related documents that might have bearing, and have extended insight into the censuses outside of Egypt, in particular the Arabian and now Lukan censuses. I think that it is possible to make the case that not only does the Lukan census reflect the kind of censuses that were taken in Roman territories (of which Palestine was one, despite having client kings) as the Arabian papyri illustrate, but that other factors — such as the grammatical structure of Luke 2.2 — may indicate that this census occurred not only around the time of the early first century A.D., but possibly even during the time of Herod\textsuperscript{14}.

\textbf{b. Greek Grammatical Study}

I do not think that it is being too harsh to say that the standard grammatical tools for papyrological research are limited. It is true that there is a wealth of evidence of parallels to draw upon from the editions of papyri themselves, which are often well indexed for such purposes. But in terms of the standard reference tools available, there are severe limitations. The major general grammatical reference tools are three: Mayser’s study of the Ptolemaic papyri, completed in 1934, except for the revision of volume I by Schmoll in 1970; Gignac’s two volumes on phonology and morphology; and Mandilaras’ study of the verb\textsuperscript{15}. The concentration has clearly been upon phonology and morphology. These constitute the largest parts of Mayser’s two volume (5 fascicle) work, and so far all of Gignac’s contribution (of which the syntax volume is eagerly awaited). Mandilaras is an important advance in the area of verbal structure, but even his study is limited in the number of instances and texts that he considers.

One familiar with the grammatical tools in New Testament study might wonder why I can say that major advances in New Testament Greek grammatical study offer possibilities for papyrologists. The standard reference grammars in New Testament studies are essentially three: Blass (and Debrunner’s) grammar of New Testament and early Christian literature, which is frequently cited by papyrologists, Moulton and Turner’s four volume grammar, and Robertson’s massive grammar\textsuperscript{16}. These works reflect nineteenth-century language study, and hence are for the most part governed by historical, philological and comparative standards by which phenomena are evaluated. This is certainly the case with Blass’s grammar, which is in many essential characteristics unchanged from the original 1896 version, except for some updating of phonology, morphology and word-formation by Debrunner in the early part of last century. In some later editions, occasional and sporadic reference has been made to some of the papyri. It is only in Moulton’s grammar that one gets an idea of what the possible contribution of New Testament studies could have been and perhaps could be to papyrological studies\textsuperscript{17}. Deissmann made a major contribution — as did Moulton — in the area of lexicography\textsuperscript{18}. One of the benefits of the discovery of the papyri for New Testament studies was an opening up of the categories of discussion. Whereas the classical language had been used as the point of comparison, much to the usual denigration of the Greek of the New Testament (and often that of the rest of the Graeco-Roman world), the discovery of the papyri showed that many supposed unique senses of words were paralleled in the papyri. Moulton’s Prolegomena, volume one of A Grammar of New Testament Greek, was an important step in showing that what had been thought to be unique New


\textsuperscript{17} For an evaluation of these resources in New Testament studies, see S. E. Porter, Grammar and Syntax, in: The Face of New Testament Studies (ed. S. McKnight and G. Osborne), Grand Rapids in press.

\textsuperscript{18} Besides his Light from the Ancient East, see G. A. Deissmann, Bibelstudien, Marburg 1895, and Neue Bibelstudien, Marburg 1897, translated as Bible Studies (trans. A. Grieve), Edinburgh 1901; J. H. Moulton and G. Milligan, The Vocabulary of the Greek Testament Illustrated from the Papyri and Other Non-Literary Sources, London 1914–1929.
Testament usage (often posited as reflecting Semitic influence) was in fact reflective of koine usage of the time. Moulton was never able to see his projected grammar through to completion. His prolegomena was heralded in the English- and German-speaking worlds as a major advance. He was in the midst of working on the second volume, on accidence and word-formation, when on a return trip from India his ship was torpedoed in the Mediterranean and he died in 1917. The second volume was completed by W. F. Howard. When the grammar was finally completed in the 1960s and 1970s by Nigel Turner, it was done on radically different grounds. Turner was a well-known advocate of the view that the Greek of the New Testament constituted a special dialect of Christian Greek, uniquely created by the mix of Greek and the Semitic language of the writers of the New Testament. He advocated this hypothesis in both his Syntax volume and his following Style, where evidence is often marshalled in order to show the unique character of the biblical Greek language. Both his theoretical framework (which harks back to some nineteenth-century thought that posited a special form of Holy Ghost Greek) and his evidence have been called into question. It is also true that his theoretical orientation is directly derived from nineteenth-century classical philology.

All of this does not sound particularly promising for papyrologists learning from New Testament scholars, when it appears that possibly the last great contributor to the study of the papyri and New Testament Greek died in 1917. However, all is not so bleak. In the last thirty years, there have been a number of significant advances in New Testament Greek linguistic and grammatical study that merit attention from papyrologists. I would like to outline these briefly.

1. Verbal Aspect Study. I select verbal aspect study as one particular grammatical phenomenon because it is the area where the most recent work has been done, although there are other areas as well, such as case theory, conjunctions and particles, clause structure, etc., that could also be mentioned. At the 1992 papyrological congress in Denmark, it was remarked by Greg Horsley that he thought that the study of aspect was a desideratum for papyrological studies. In the light of this endorsement, I wish to recapture and advance discussion, not least because despite Horsley’s pleas I have seen little progress on the part of papyrologists. First, verbal aspect is not the same as Aktionsart, even though the two are often used interchangeably. Nineteenth-century scholarship, reflecting rationalist principles, tended to equate time and tense-form. In the late nineteenth century a number of scholars, led by Karl Brugmann and introduced into English by Moulton, recognized that verbal action has less to do with time and more to do with the way actions occur. However, the attempt of Aktionsart theory to equate tense-forms with objective kinds of action was overwhelmed by the fact that action is far more diverse than any language’s tense-forms will allow. Aspect theory builds upon this recognition by saying that the tense-forms of the language are used to reflect the user’s perspective on the action — not how it actually occurred but how the speaker wishes to depict it. Secondly, there has been quite significant debate over how far to extend this theory, with some aspectologists content to see the tense-forms as non-temporal in the non-indicative moods (including the participle and the infinitive) and others wishing to see the tense-forms as non-temporal in all of the moods. This means that their semantic features are aspectual and not temporal. Temporal reference must be established on the basis of a variety of contextual indicators, often called deictic indicators. These include the discourse type, and a variety of indicators such as temporal and relational words, personal reference, and the like. Thirdly, this leads to discussion of the primary meanings of the aspects. Some scholars see


only two in Greek, grammaticalized by the aorist and present tense-forms, but others see three, adding the perfect tense-form. There are a number of conceptual metaphors that have been used to describe the semantics of the aspects, such as perfective vs. imperfective vs. stative aspect, etc. However, one of the most important recent areas of discussion is in terms of the discourse shaping features of the use of the tense-forms. In other words, the aspects are used by authors to create, convey, unify, shape and contour their discourses, whether these are narratives, letters or descriptions. Thus, for example, a narrative is conveyed by the aorist tense-form, or used when background material is being described, but the imperfect is used when some event, person or words are foregrounded or brought forward for attention, often supported by other syntactical means as well, such as word-order or the use of fuller forms of expression.

One brief example of how the concept of aspect could be used in papyrological research must suffice here. In some recent linguistic study, it has been noted that shifts in tense-forms are used to indicate transitions in sections of discourses. This kind of study has already begun to be used in the study of various literary types in the Greek New Testament. For example, in defining epistolary form, various patterns of tense-form usage have been noted in the Pauline letters. Similar analysis could well be done on various papyrus letters. Such studies have potential to open up further distinctions in determining epistolary form.

2. Register Study. Jakko Frösén was one of the first to bring the concept of register into papyrological studies, but there has not been much research that I have observed that has followed up on his. One of the reasons perhaps is that there was something of a blurring in his work between the concept of dialect and that of register. I prefer to see the term dialect as referring to the permanent features of language determined on the basis of geography, social status, education, and the like. However, when language is used there are also a number of transient characteristics that can also be observed. These are determined by such features as the subject matter to be discussed, the social context in which conversation occurs, the relative status of the participants, and a variety of other contextual factors that pertain to that particular situation. These various factors have been developed in a more formalized way into what has been called register. Register studies attempt to show how the context of situation defines the parameters of language usage. In terms of ancient documents, it holds out the hope that knowledge of how language is used can be useful in reconstructing the original context of situation. This may not be a specific context, such that a particular person spoke on a certain day, but it may help to describe the characteristics of the language users involved.

The advantage of register analysis over such competing notions as stylistics and even dialect is that it attempts to quantify specific linguistic features that indicate the purpose and use of the discourse, with the possibility of understanding the context out of which it emerged. Many stylistic studies that select single features are predicated upon sample sizes that are simply not attainable for individual papyri. Work in register analysis has been able to overcome this limitation. Instead of pursuing a single longitudinal thread, it has analyzed a number of latitudinal strata. The complex of features does not require a minimal sample size to make the analysis useful. Thus, productive work has been done on the book of Philo, which is only slightly larger than the length of the average documentary papyrus letter, as well as such books as Philippians, Mark’s Gospel and the book of Acts. This work holds great potential for being able to analyze and use individual letters, and a number of letters with similar features in combination, to arrive at insights into language usage in the ancient world.

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Some register studies of four Pauline letters — Romans, 1 Corinthians, Philippians and the Pastoral Epistles (taken as a whole) — illustrate the potential of register studies. I have selected features for six dimensions suggested in recent register research\textsuperscript{23}. These include (1) interactive versus informational production, (2) narrative versus non-narrative concerns, (3) explicit versus non-explicit reference, (4) overt expression of persuasion, (5) abstract versus non-abstract information and (6) on-line informational elaboration. As a result of studying features that can be identified with each of these dimensions, it is possible to gain insights into individual texts. For example, 1 Corinthians is more interactive than the others, while the Pastors are more informational (I include the chart for table 1, interactive v. informational production below in Fig. 4). The Pastors are also both more narrative and more non-narrative than the others. This is not a contradiction, but reflects that these letters utilize both features. The Pastors are more explicit in reference, while Philippians is more non-explicit. 1 Corinthians is the most overt in its persuasive techniques, as well as being the most abstract, while the Pastors are the most non-abstract. Finally, the Pastors have more on-line elaboration and are more not on line in elaboration than the other letters. From these data we can attempt to characterize particular features of the context of situation that gave rise to these letters. Whereas a number of other factors can aid in this, the use of linguistic features should also be taken into account. Similarly, papyrological studies could begin to characterize various texts, such as documentary letters, according to their register features, in an attempt to reconstruct the contexts of situation that led to their production.

Table 1. Dimension 1: Interactive v. Informational Production

<table>
<thead>
<tr>
<th>(+) [Interaction] :</th>
<th>Rom.</th>
<th>1 Cor.</th>
<th>Phil.</th>
<th>Past.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Verbs</td>
<td>25.03</td>
<td>23.28</td>
<td>33.76</td>
<td>22.65</td>
</tr>
<tr>
<td>Imperfective Aspect</td>
<td>88.17</td>
<td>119.78</td>
<td>92.69</td>
<td>106.36</td>
</tr>
<tr>
<td>2nd Person Reference</td>
<td>44.29</td>
<td>51.99</td>
<td>68.75</td>
<td>44.15</td>
</tr>
<tr>
<td>Analytic Negation</td>
<td>28.97</td>
<td>37.78</td>
<td>12.28</td>
<td>19.50</td>
</tr>
<tr>
<td>Demonstr. PRO &amp; ADJ</td>
<td>7.73</td>
<td>10.54</td>
<td>9.21</td>
<td>11.75</td>
</tr>
<tr>
<td>1st Person Singular</td>
<td>30.94</td>
<td>43.69</td>
<td>84.10</td>
<td>29.25</td>
</tr>
<tr>
<td>1st Person Plural</td>
<td>22.22</td>
<td>19.48</td>
<td>7.98</td>
<td>16.91</td>
</tr>
<tr>
<td>BE as Main Verb</td>
<td>10.69</td>
<td>18.01</td>
<td>4.91</td>
<td>10.32</td>
</tr>
<tr>
<td>Causative Subordination</td>
<td>7.88</td>
<td>8.79</td>
<td>12.89</td>
<td>5.73</td>
</tr>
<tr>
<td>Indefinite Pronouns</td>
<td>2.11</td>
<td>7.91</td>
<td>6.14</td>
<td>6.31</td>
</tr>
<tr>
<td>WH-questions</td>
<td>6.05</td>
<td>4.69</td>
<td>1.23</td>
<td>0.86</td>
</tr>
<tr>
<td>Adverbs</td>
<td>33.89</td>
<td>38.07</td>
<td>52.18</td>
<td>32.97</td>
</tr>
<tr>
<td>Conditional Subordin.</td>
<td>9.00</td>
<td>16.25</td>
<td>7.98</td>
<td>6.88</td>
</tr>
<tr>
<td>Verbs</td>
<td>168.75</td>
<td>195.78</td>
<td>166.97</td>
<td>184.35</td>
</tr>
<tr>
<td><strong>Summed Ranks</strong></td>
<td>37</td>
<td>23</td>
<td>36</td>
<td>44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(-) [Informational] :</th>
<th>Rom.</th>
<th>1 Cor.</th>
<th>Phil.</th>
<th>Past.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns</td>
<td>235.83</td>
<td>200.91</td>
<td>224.06</td>
<td>249.14</td>
</tr>
<tr>
<td>Noun-Verb Ratio</td>
<td>1.40</td>
<td>1.03</td>
<td>1.34</td>
<td>1.35</td>
</tr>
<tr>
<td>Word Length</td>
<td>4.66</td>
<td>4.63</td>
<td>4.74</td>
<td>5.24</td>
</tr>
<tr>
<td>Type-Token Ratio</td>
<td>0.28</td>
<td>0.24</td>
<td>0.28</td>
<td>0.34</td>
</tr>
<tr>
<td>Atributive ADJ</td>
<td>2.53</td>
<td>4.25</td>
<td>2.46</td>
<td>8.31</td>
</tr>
<tr>
<td>Place Adverbs</td>
<td>0.00</td>
<td>0.59</td>
<td>0.61</td>
<td>0.29</td>
</tr>
<tr>
<td>Agentless Passives</td>
<td>15.05</td>
<td>17.43</td>
<td>8.59</td>
<td>12.90</td>
</tr>
<tr>
<td><strong>Summed Ranks</strong></td>
<td>17</td>
<td>21</td>
<td>20</td>
<td>12</td>
</tr>
</tbody>
</table>

Fig. 4: Register Analysis of Pauline Textual Dimensions

3. Discourse Analysis. Discourse analysis or textlinguistics, at least as I understand it, is closely related to register analysis. Much papyrological study has focused upon the individual letter. Often these letters are deciphered in terms of words and phrases. This is especially necessary when deciphering lettering that has shown the effects of age or simply cannot be clearly determined because of the hand. Much analysis does not proceed much beyond the phrase, and rarely beyond the clause or sentence. Discourse analysis turns this analysis on its head, and begins with the premise that the most important unit of analysis is the discourse itself. In a sense, papyrological research has been concerned with entire discourses in its categorization of types of manuscripts. Discourse analysis goes beyond this concern, however, and recognizes not only that the entire discourse is the minimal unit for interpretation, but that the discourse establishes the context for interpretative parameters. Within these parameters, the most useful discourse analysis of ancient texts, I believe, begins with linguistic substance, but it analyzes these in terms of larger units of structure and meaning. Discourse analysis provides a meaningful way of analyzing such linguistic data. Rather than simply accumulating instances of particular elements or linguistic structures, or vocabulary items, there is the possibility of putting such usage in a larger context.

In recent research, Matthew O’Donnell and I have been developing a model of discourse analysis for ancient Greek texts (see Fig. 5). This is being developed in conjunction with our work on OpenText.org, a web-based platform for making available resources for study of ancient Greek documents (www.opentext.org).²⁷

<table>
<thead>
<tr>
<th>LEVEL OF DISCOURSE</th>
<th>Field</th>
<th>Tenor</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context of Situation</td>
<td>Topic and Purpose</td>
<td>Demographics of Sender/Receiver</td>
<td>Genre and Form, Setting and Cultural Elements</td>
</tr>
<tr>
<td>Discourse</td>
<td>Semantic Domain Pattern</td>
<td>Participant Structure and Interaction</td>
<td>Cohesion and Thematization</td>
</tr>
<tr>
<td>Paragraph</td>
<td>Transitivity Roles, Clause Level and Connection (Primary and Secondary), and Aspect and Causality Patterns</td>
<td>Participant Status and Interaction</td>
<td>Clause Level Conjunctions and Connections; Cohesive Ties</td>
</tr>
<tr>
<td>Clause</td>
<td>Clause Components (S, P, C, A), Aspect and Causality</td>
<td>Participant Identity and Attitude</td>
<td>Conjunctions; Prime–Subsequent</td>
</tr>
<tr>
<td>Word Group</td>
<td>Semantic Domains and Relations</td>
<td>Participant Reference</td>
<td>Part of Speech; Grammatical and Lexical</td>
</tr>
</tbody>
</table>

Fig. 5: OpenText.org Discourse Model

We have begun with the text of the New Testament, but are already moving to include other related texts as well. The model that we have developed includes the following levels: word group, clause, paragraph, discourse and context; relying upon the differentiating meta-functions of field, tenor and mode. As Fig. 5 indicates, there are definable features at each level. We have found that, because of the morphological ambiguity inherent in Greek, the word group provides the lowest level of significant analysis for our discourse scheme. Within the word group, for example, we differentiate a head term and its modifiers (see Fig. 6).


Fig. 6: Relations in the Word Group Τιμόθεος ὁ ἀδελφός in Philoem 1

The modifying relations in relation to the head term are indicated as specifiers (sp), definers (df), qualifiers (ql) and relaters (rl). These relationships can be used to mark up the text at this level for retrieval purposes. Similarly, a complex word group can have various levels of modification indicated, with various individual word groups within larger word groups.

At the clause level, we differentiate at the textual level the primary and secondary clauses. Each paragraph has its primary and secondary clauses specified (see Fig. 7).

Fig. 7: Display of Clause Level and Connections for Philoem 10–14

These categories are determined not on the basis of traditional rules of subordination, but in terms of discourse continuity, with relative clauses, participle and infinitive clauses, and their dependent clauses being secondary. Secondary clauses enhance the vertical dimension of the text, while primary clauses develop the linear dimension. Once the various levels of analysis have been made, one can retrieve the data for further study and comparison. For example, one can note what kinds of syntactic structures particular lexical items are used in, or certain kinds of word order can be noted in varying linguistic contexts according to discourse type or paragraph subject matter or foregrounding, or the like. The possibilities for such analysis are large, and heretofore have not been undertaken on a large scale.

One of the reasons that such large-scale linguistic undertakings have not been undertaken is not only because the methods for doing so have only recently been developed but because the resources for doing so have not been present. By this I mean that the resources of computer technology must be utilized in order to make full use of the multitudinous data noted above\(^\text{28}\). There are a number of computer data-bases currently available both in New Testament studies and in papyrological research\(^\text{29}\). One of the most widely used in both is the TLG data-base. This data-base has a number of limitations, not least that it is a data-base of literary texts. The Duke data-base has papyri, and a considerable number of them. However, both resources are limited in terms of their retrieval mechanisms. This is a serious shortcoming in and of itself. There is the further problem that these are not actually corpora in the technical sense of being a planned or structured corpus of texts. These are simply archives, that is, an almost random accumulation of texts used because


of availability, not selected for any particular reason or to provide a structure to those texts gathered. Thus, even if one were able to perform more sophisticated searches, there is limited means to discover whether the results are significant, since little is known about the shape of the corpus against which the item is being searched. New Testament studies has the advantage of a number of much more richly annotated data-bases. These data-bases are essentially confined to the text of the New Testament (in its eclectic form, not according to any particular manuscript) and the Septuagint. Searches of lexical items and of simple syntactical patterns can be performed, but not highly complex syntax or levels beyond that.

Corpus linguistics is concerned with such issues. Corpus linguistics is not so much a specific method of textual analysis, as an approach to data that says that the study of linguistic phenomena should take place in terms of a larger corpus of material, so that significance can be established. Rather than an open-ended corpus, and certainly rather than simply an archive, what is needed in the study of ancient texts is a structured corpus, so that the material available can be used to best possible advantage. More than that, what is needed is to be able to extract the largest amount of information from the tagged text as is possible. For this, a maximal set of annotations is needed, in which all possible levels of information are annotated and retrievable. This includes information at the morphological level, to be sure, but more than that, at the level of the group, the clause, the paragraph and the discourse. This text-tagging requires, first, the development of a complex discourse model as was noted above, and secondly, an intensive effort to annotate the text. However, the rewards can be significant for papyrological studies.

Strides are already being taken to incorporate this computer technology into papyrological research. In many instances, the models being suggested for tagged texts of papyri are essentially the inputting of the printed edition into a simple computer file. What is needed instead is a rethinking of the entire approach on the basis of corpus-based principles that include richly annotated texts. OpenText.org is attempting to bring as many Greek-language resources — including papyri — to a web-based platform as possible so that scholars can use these in their research. The process is a slow one, and requires a high degree of expertise in linguistics and Greek language for the annotator, after development of the discourse model. We have recently innovated various methods of automated machine tagging. Our goal is to provide as soon as possible an annotated corpus of 600,000 words for use. Documentary papyri constitute an important part of this corpus. Shortcuts to their fullest implementation can be taken, but we are suggesting that what is needed is three texts, a diplomatic text, a reconstructed text, and a reading text. We have created these for the well-known P.Oxy. 119, as illustrated in Fig. 8. This figure includes a diplomatic, reading and reconstructed text of the papyrus.

Each of these texts serves a different purpose in papyrological research30, and these are reflected in our editions, which attempt to use Leiden-based conventions in an electronic interactive format. The diplomatic text provides the lettering as it appears in terms of numbered characters, with indications of status (written or deleted) and visibility (clear, uncertain, illegible), as well as indications of lacunae, inserted letters, abbreviations, and the like. The reconstructed text divides words and accents them, as well as numbering them and positioning them in terms of characters, and expands abbreviations, but also retains the indications of status and visibility. An added interactive feature is that selecting a given letter also indicates the character number and its transcription in the diplomatic text. The reading text provides a regularized text, including basic punctuation. It too is interactive with the reconstructed and diplomatic texts. An added feature of the reading text is the provision of alternative readings, potentially those provided by the editors or by, as in this case, various editors of this papyrus. One could confute these texts, but since the creation of one text requires the creation of the others by definition, it seems that retaining the three is not only feasible but prudent, since each text provides something different from the others. This holds true, I believe, whether we are discussing documentary or literary texts. Those texts that have already been edited can be transferred to a more compact format in which perhaps only a single text is used, but as we all know, valuable information is lost in this process. This proposed system of textual annotation has already attracted attention since its first posting on our web-site, although we would welcome further critical response. If this system continues to catch on, it is possible even to think of the electronic form as the first place of publication, from which a version is selected for the printed format.

New Testament Studies and Papyrology: What Can We Learn from Each Other?

P.Oxy. 119 Reading Text

1 Θέων θέων τῷ πατρὶ χαίρειν.
2 καλὸς ἐποίησας οὐκ ἀπενεχέας με μετ’ ἔ-
3 σοῦ εἰς πόλιν. εἰ ὦ θέλεις ἀπενεχείν με-
4 τ’ ἔσοδ εἰς Ἀλεξανδρίαν ὦ μη γράψοι σε ἐ-
5 πιστολὴν οὕτω ἱλαρό σε οὕτω πραίνω σε.
6 εἰσα ἄν δὲ ἐλθῆς εἰς Ἀλεξανδρίαν οὐ
7 μη λάβω χεῖρα παρὰ σοῦ οὕτω πάλιν χαίρω
8 σε λοιπών. ἂν μὴ θέλης ἀπενέγκαι με
9 ταύτα γίνεται καὶ η μητὴρ μου εἴπε Ἄρ-
10 θελάω ὅτι ἀναστατοί με ἄρων αὐτόν.
11 καλὸς δὲ ἐποίησας. δώρα μοι ἐπεμένας
12 μεγάλα ἀράκια. πεπλάνηκαν ἡμᾶς ἐκεῖ
13 τῇ Τίμηρα δώδεκα ὅτι ἐπέλυσας. λοιπὸν πέμψον e
14 με παρακαλῶ σε. ἂν μὴ πέμψης οὐ μη φά-

P.Oxy. 119 Reconstructed Text

1 Θέων θέων τῷ πατρὶ χαίρειν
2 καλὸς ἐποίησας οὐκ ἀπενεχέας με μετ’ ἔ-
3 σοῦ εἰς πόλιν. ἢ οὐ θέλεις ἀπενεχείν με-
4 τ’ ἔσοδ εἰς Ἀλεξανδρίαν οὐ μη γράψοι σε ἐ-
5 πιστολὴν οὐτε λαλῶ σε οὕτω νῦννε σε
6 εἰσα ἄν δὲ ἐλθῆς εἰς Ἀλεξανδρίαν οὐ
7 μη λάβω χεῖρα παρὰ σοῦ οὕτω πάλιν χαίρω
8 σε λοιπών ἂν μη θέλης ἀπενέγκαι με
9 ταύτα γίνεται καὶ η μητὴρ μου εἴπε Ἄρ-
10 θελάω ὅτι ἀναστατοί με ἄρων αὐτόν
11 καλὸς δὲ ἐποίησας. δώρα μοι ἐπεμένας
12 μεγάλα ἀράκια. πεπλάνηκαν ἡμᾶς ἐκεῖ
13 τῇ Τίμηρα δώδεκα ὅτι ἐπέλυσας. λοιπὸν πέμψον
14 με παρακαλῶ σε. ἂν μὴ πέμψης οὐ μη φά-

Fig. 8: Screen Shots of Diplomatic, Reading and Reconstructed Texts of P.Oxy. 119 from OpenText.org
4. Conclusion

One hundred years ago, the question of what New Testament scholars and papyrologists could learn from each other perhaps did not need to be asked, since in many instances the scholars were one and the same. Even for those who were not involved in the other discipline, their educational background or their personal interests often meant that they were aware of the other field, and were able to avail themselves of various discoveries. However, much has changed since then. Today, the disciplines stand on quite different platforms, with as much that distinguishes them as unites them. Each has grown and developed in different ways, and, in our complex age of specialization, almost requires that one devote oneself to one or the other. As a result, there are some developments in each that could be of benefit to the other. I think that the focus upon primary texts, in all of their dirtiness, fragmentariness, and yet beauty and authenticity, is the major factor that papyrology has to contribute to New Testament scholars, who have often lost cite of the place of primary documents in their discipline. However, New Testament scholars have been taking serious strides forward in developing a range of perspectives and tools for the intensive study of their texts. These linguistic methods and insights, and the means by which they can be exploited, provide tools that papyrologists could benefit from. It will be interesting to see whether the two disciplines are able to share this information to each others’ mutual benefit.