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# Scalometry and the Dating of

# The New Testament Epistles

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#### Abstract

Scalometry reveals core material in the Pauline epistles that may be identified with the first session of dictation. Other material may be regarded as afterthoughts. 1 and 2 Peter and Hebrews show prime patterns that are different from the Pauline patterns. A wide survey of literature ancient and modern has failed to produce any comparable patterns and the possibility that these prime patterns reflect authorship must be seriously considered. This has a dramatic effect on the possible dating of New Testament epistles and gives new significance to evidence that has long been familiar.

Since 1995 eight articles involving scalometric evidence have appeared in issues of *Irish Biblical Studies*<sup>1</sup>. These articles have been concerned with the Pauline Epistles, The Petrine Epistles and Hebrews, the Revelation, the question of literary dependence in the New Testament, the preaching of Paul and Silvanus, and scale changes in the Gospels and Acts. The new evidence provided by these various investigations requires that fresh consideration should be given to the dating of the New Testament epistles.

The opinions of scholars vary widely in this regard, but an indication of mainstream scholarship may be obtained by referring to Kümmel's *Introduction to the New Testament*<sup>2</sup>. Kümmel places

<sup>1</sup> IBS 17, 1995, 22-41; IBS 18, 1996, 16-25; IBS 19, 1997, 17-31, 121-132 and 147-160; IBS 20, 1998, 75-91 and 98-113; IBS 21, 1999, 101-117.

<sup>2</sup> Kümmel, W.G., Introduction to the New Testament, London: SCM Press, 1975.

Romans, 1 and 2 Corinthians, Galatians, Philippians, Colossians, 1 and 2 Thessalonians and Philemon within the context of Paul's travels as recorded in Acts (50 –58 AD).

Ephesians he regards as post-Pauline, dating it 80-100. The Pastoral Epistles he regards as coming pseudonymously from one hand about the beginning of the second century. James he places towards the end of the first century "in view of the conceptual distance from Paul". Hebrews he dates between 80 and 90. He places 1 Peter at 90-95 in Domitian's reign, Jude at the turn of the second century and 2 Peter in the second quarter of the second century. Ephesians, the Pastorals, James, 1 and 2 Peter and Jude are all held to be pseudonymous works, written at unknown times in unknown places by unknown authors who left no other works by which they might be identified. Because pseudonymous writing was not unknown in the ancient world, Kümmel apparently finds this quantity of pseudonymous writing in the New Testament to be acceptable. The scalometric evidence does not support such a conclusion.

### Assessing scalometric evidence

Data obtained through the use of one particular discipline may not properly be assessed by the conventions of another discipline. For example, statistical method has played an increasing part in Biblical and other literary studies in recent years and it is becoming accepted that in order to assess the significance of statistical data it is necessary to have some knowledge of statistics. Such data cannot be assessed using criteria that are found to be appropriate in other branches of literary criticism. Neither can scalometric data be competently assessed by the conventions of a discipline in which the existence of scale in literature is not recognised. One must beware of the transference of authority from one discipline to another.

Literature is a creative art, and every work of literature has its locus at a particular point in the scale spectrum. An understanding of scale

<sup>&</sup>lt;sup>3</sup> *Ibid.*, p.414.

and scaling effects as they are found in the visual arts is essential in assessing the significance of scalometric data. At this point, scholars in the mainstream of Biblical studies are faced with a dilemma because the concepts used in scalometry belong to an unfamiliar discipline and these concepts have not previously found an application in Biblical studies.

Works of literature show scale variations that affect statistical counts and to ignore these variations is to neglect useful evidence. Works of literature may show scale-related patterns that have not as yet been detected by other disciplines and to neglect these is to ignore links that provide valuable connections between works.

Just as it has taken some time for statistical method to be absorbed into mainstream Biblical studies, so it will take time for scalometric method to be accepted. It requires study, and it is not competent to judge scalometric data by criteria that do not take account of the existence of scale in literature.

#### Punctuation of New Testament texts

On reviewing recent New Testament studies I have found that some scholars are reluctant to accept any method that relies upon sentence length. A sweeping generalisation on this matter is unwise. The question that has to be asked is whether the differences found in the various interpretations of sentence length are significant when compared with the strength of the patterns that are revealed. As far as New Testament scalometry is concerned, the variations resulting from different editors' interpretations of the punctuation of the texts are small indeed when they are compared with the strong patterns revealed by scalometry. Significant features appear irrespective of the edition used.

There are two significant questions regarding punctuation. The first is how to deal with strings of questions that are not in scale with their contexts. It must be appreciated that an interrogation mark does not always have the force of a full stop. In this I have followed L.D. Reynolds who in his 1965 edition of the letters of Seneca, grouped the short questions according to their content. The effect of

this is to provide word groups that are nearer in scale to that of the context than the short questions were when each was considered to be a compete sentence. The problem is at its most acute in the epistle to Romans and the adjustment of strings of short questions is enough to restore the major features that are found in all the other major Pauline epistles. The problem arises to a much lesser extent in 1 and 2 Corinthians and Galatians. This adjustment alone cannot possibly create a Pauline pattern; it can only clarify a pattern that is already there.

The second question concerns the differences in punctuation that are found in the standard modern editions of the New Testament texts. These differences are not extensive and usually depend upon the choice of a colon or a full stop. It must be appreciated that a colon is often a sign of continuity rather than a stop. In recent years I have modified my method in this regard in order to eliminate any subjectivity on my part in arriving at a preferred text. I have made use of two versions - UBS3 (latterly UBS4) and Souter's 1910 version for which I have considerable respect. The sentence divisions in these editions represent the judgement of scholars of note. When the strings of questions have been appropriately grouped, a trial graph will show clearly the rhythmic structure and the main divisions into high-scale and low-scale sections. It is possible then to locate each point at which there is a difference between UBS4 and Souter. If such a point occurs in a section with relatively high-scale characteristics, then the version that uses the colon is chosen (as it produces longer sentences). If it occurs in a low-scale section then the version that uses a full stop is chosen (as that results in shorter sentences). In this way, I make no subjective judgement myself, but accept the solution that is most likely to ensure that the text is in scale with its context. While on occasion I would like to refine this further, this straightforward procedure is enough to clarify the Pauline patterns.

# The characteristic Pauline pattern

The characteristic Pauline pattern that appears in the cumulative sum graphs<sup>4</sup> is created by the combination of two features. The first is the unusual rhythmic sense that produces alternating groups of longer and shorter sentences. The second is the habit of beginning an epistle with a high-scale section that has a comparatively high mean sentence length, followed by a low-scale section comprising an almost equal number of shorter sentences. These two features combine to give a "prime pattern" (my term) that can be mimicked on the computer. The computer model provides a series of patterns of varying complexity that may be compared with graphs of the texts. A close correspondence cannot be expected as texts are very human productions, but the main features of the structure show clearly. These comparisons show that the differences between the various epistles are differences of complexity and not of kind.

It cannot be denied, for example, that Galatians (using UBS text unadjusted) begins with 49 sentences averaging over 22 words in length, followed by 44 sentences averaging less than 17 words in length. This difference of 23% between the mean sentence lengths of substantial consecutive sections of text might be explained by a change in genre (in Galatians the first part is about Law and the latter part about Faith). But neither can it be denied that an even more pronounced change occurs in Philippians. The initial high-scale section of 29 sentences has a mean sentence length of almost 33 words, and the following low-scale section of 33 sentences has a mean sentence length of less than 21 words. A 37% difference in mean sentence length between consecutive sections of text requires explanation, and in Philippians there is no corresponding change in genre. So in some cases this dramatic change in scale is related to a change in genre; in other cases it is not. It has become a personal

<sup>&</sup>lt;sup>4</sup> For a full description of cumulative sum graphs see Barr, G.K., "The Use of Cumulative Sum Graphs in Literary Scalometry", *Literary and Linguistic Computing*, Vol. 12, No. 2, (1997); 103-111.

pattern. This dramatic contrast in scale combines with the alternating groups of longer and shorter sentences to produce a characteristic pattern that is found in all the Pauline epistles, but how may its significance be judged?

## The significance of Pauline prime patterns

I coined the term "prime pattern" because these always occur at the beginning of a text. This is such a regular feature that it is very likely that these patterns correspond to a first session of dictation. In every case it is a reasonable explanation that the prime pattern corresponds to a first session and that following material is in the nature of afterthoughts. This view also makes sense of the Corinthian correspondence where prime patterns appear at the beginning of 1 Corinthians and also at 2 Corinthians 10 (the beginning of the so-called Severe Letter from which only greetings are missing). The rest of the Corinthian correspondence consists of small topical material with a small pattern to each topic.

There is only one way to be certain that these prime patterns are unique to Paul, and that is to draw graphs of all other literary works ever written and to scrutinise them in order to confirm that no one else ever wrote in that manner. Clearly that is not possible. It is also statistically likely that such a pattern will infrequently crop up at random, purely by chance.

To put this to the test I have drawn, over a period of years, the graphs of all the New Testament texts, the Epistles of Ignatius, the complete works of Isocrates, the forensic speeches of Isaeus, the 124 Epistolae Morales of Seneca, 1 and 2 Clement, Polycarp to Philippians, Didache, Barnabas, Martyrdom of Polycarp and the Epistle to Diognetus. I have also scrutinised graphs of modern material including works by Thomas Carlyle and John Ruskin, short stories by Barbara Erskine and O. Henry, sermons and lectures by Prof. James S. Stewart, talks by Prof. William Barclay and many of my own sermons. In all this material I have found an occasional likeness to a Pauline epistle as one might expect, but on examining the text I found that there was no correspondence between the textual units and the features of the pattern such as is invariably

found in Pauline epistles. These rare instances were simply randomly occurring similarities of no significance.

There remains the question whether or not a pseudonymous writer might imitate, consciously or unconsciously, the patterns of a Pauline epistle. Such a pattern cannot be produced by copying vocabulary, ideas, syntactical patterns, or by imitating features that usually combine to form a writer's detectable "style". The broad contrast between Paul's opening high-scale section and the following low-scale section might be imitated by a writer who realised that an internal change of genre might be characteristic of Paul. Paul, however, does not rely on a change of genre to produce that effect and it is highly unlikely that any ancient writer would have such an insight. The Pauline pattern is, however, more complex than that. It requires the combination of the alternation of groups of sentences conceived at different scale levels with the broad contrast between the opening high-scale section and the following low-scale section. It is beyond belief that the only writers to be found who can produce this combination happen to be pseudonymous writers writing in the name of Paul. It is much easier to believe that Paul is the author and to re-think our views about Paul's abilities and circumstances. In preparing the cumulative sum graph of a work, the length of every sentence interacts with all the other sentences in producing the pattern, and even when one understands how the pattern is achieved it is extremely difficult to write a piece that gives a passable imitation of a Pauline pattern.

The test material listed above represents a prodigious amount of work, but that is the kind of exercise that is necessary before a critic can assess the data provided by scalometry. A competent assessment cannot be made by simply applying the conventions of a discipline that does not recognise the existence of scale in literature.

## The extent of the Pauline corpus - Ephesians and Colossians

I agree with Kümmel concerning the epistles listed above that are placed within the years of Paul's ministry, but I part company with him in his assessment of Ephesians and the Pastorals. Fig. 1 provides cumulative sum graphs of the prime patterns of Ephesians (1:1-5:33) and Colossians (1:1-4:18). These graphs show how the

rhythms of the stepped patterns (reflecting alternation of sentence groups) and the contrast between the A and B sections are mirrored by the model. There are differences in the complexity of the patterns but they exhibit they same features. I do not believe it possible that a pseudonymous writer could achieve such a match in patterns that are created below the level of consciousness. The first session in dictating Ephesians ended with the vision of marriage in terms of Christ and the Church. Notice how extended this section is, while the rest of the Household Code that follows consists of single verses relating to each class of person. Clearly, Paul had thought through his material before dictation and this vision of Christ and the Church was the culmination of his train of thought. The rest of the Household Code is an afterthought in its standard form, to which he has added a short exhortation. (This added material appears below the base line in the graph, as the graph is based on the mean sentence length of the prime material.) In my view, Ephesians is the earlier epistle. When Paul came to write Colossians to a different group under different circumstances, he recast his material entirely. The Household Code appears entirely in its short form (in contrast to Ephesians the advice to husbands and wives occupies only a brief verse for each) and it lies entirely within the prime pattern. Ephesians must therefore be dated close to Colossians, somewhere between 56 and 60 AD. To give an impression of the main features of the Pauline prime pattern I have shown in fig. 2 graphs of Galatians (which is a smaller scale version of Romans), Philippians, 1 Cor. 1-6, and 2 Cor. 10:1-12:19a. The Pastorals require special consideration.

#### The extent of the Pauline corpus - the Pastoral Epistles

The graphs of the Pastoral Epistles (fig. 3) show very clearly that there are insertions in 1 Timothy and Titus. In each case the insertion is concerned with the qualities required in church leaders. In Titus there is also a short passage concerning Cretans that is doubtful; it clearly does not belong to the prime pattern but may have been a spontaneous insertion during dictation. The second century insertions have been the cause of much trouble and misunderstanding, but if they are removed from the text then a much earlier form of church order becomes apparent and the prime

patterns are restored. It is significant that the insertions affect the two graphs in quite different ways, yet when they are removed the prime pattern in each case is restored.

In 2 Timothy the clue to the restoration of the original form of the text lies in the text itself, at 1:15 where verses are found concerning Phygelus, Hermogenes and Onesiphorus and some advice to Timothy (up to 2:7). Such verses would sit much more comfortably near the end of the letter. Placing 1:15-2:7 after 4:5 gives a continuous text and restores the prime pattern. The block accounts for about one ninth of the letter and moving it in this way transposes it from page 3 to page 7 (or pages in that proportion). With the restoration of these typically Pauline prime patterns, the Pastorals must find their place within the last period of Paul's life. Kenny's view that the statistics show that Titus cannot be genuine is not acceptable, because much of the statistical data was obtained from the inserted second century passages, and other important statistical features are content-related.

#### Hebrews, 1 and 2 Peter and Jude

In an earlier paper (IBS 19, 1997, 17-31) I gave the graphs and the evidence which show that Hebrews and 1 and 2 Peter have scale-related prime patterns that are different from the Pauline patterns. I have scrutinised the test material mentioned above that extends to well over half a million words and have not found any convincingly similar pattern anywhere else. I have to conclude that these three works come from the same hand. The evidence of the text (1 Peter 5:12) must not be ignored, and the writing of these three works may be attributed to Silvanus. I have indicated in the previous article how the differences in the quality of the Greek might be accounted for. The close links between these three works and the Pauline epistles demand an explanation that is not satisfactorily provided by mainstream studies. The points of contact between 1 Peter/Hebrews and several of the Paulines suggest themes that are eminently

<sup>&</sup>lt;sup>5</sup> Kenny, A. A Stylometric Study of the New Testament, Oxford: Clarendon Press, 1986.

suitable for missionary outreach and that one might expect to find in the common preaching material shared by the two evangelists. Hebrews and Romans both quote three of the favourite Old Testament quotations used in their preaching. The unusual vocabulary found in the Pastorals and Hebrews/1 and 2 Peter points to words used in such preaching, and to this further consideration is given below. The correspondences in these three works, and these links with the Paulines, suggest a dating within the period of Paul's journeys.

The Epistle of Jude forms an important link. Kümmel considers that the writer of 2 Peter used Jude as a source; Luther thought that Jude depended on 2 Peter. It is frequently found that scholars who claim that two works show dependence of one upon the other cannot produce good evidence as to which is the dependent author. In a previous article (*IBS* 19, 1997, p.147-160) I examined the problem of literary dependence and concluded that there was no evidence for dependence in the case of Jude and 2 Peter. It is inconceivable that an author could sit down with one text before him and by copying arrive at the other text. The answer is that both texts reflect a common store of preaching material that was used by the apostles repeatedly. This points to another apostolic mission.

#### Apostolic missions

Acts gives an inadequate account of the missions that were undertaken during the Pauline period, and the evidence of the epistles must be given priority. Three main missions are indicated. Acts indicates that Paul and Silvanus acted in partnership for the best part of three years; this is supported by the epistles. The prime pattern in Titus (with second century insertions removed) points to Pauline core material and this indicates a failed mission to Crete, which on principle the author of Acts would not mention. This may have taken place during Paul's longer stay in Ephesus, as Crete is only two days' sailing away from that city. The third mission is suggested by the greetings in 1 Peter 1:1, a mission to the northern parts of Asia Minor involving Peter and other apostles. Silvanus's writings (1 and 2 Peter and Hebrews) are to be placed after he left Paul's mission (after Acts 18:5) to join Peter's. Jude may have been

a member of the latter. The Epistle of Jude forms an important link in bringing Jude and Silvanus into the same company of preachers. The epistle of Jude and 2 Peter reflect the preaching material that was prepared by the apostles to meet a threat posed by false teaching. The common material is evident and even follows a similar order, but each author has written it up in his own way reflecting his own perceptions.

### Conflict with false teaching

It is important to appreciate the nature of the false teaching that troubled the apostles. Modern critics require a target to hit and often look to the full-blown heresies of the second century to find that target. Silvanus was, as Acts 15:22 indicates, one of the "leading men among the brethren". As the author of Hebrews and 1 and 2 Peter, Silvanus was clearly a scholar of note. Paul and Silvanus worked and preached together for nearly three years. During that time they built up a body of preaching material that was particularly suited to evangelistic work in Greek speaking communities. On their travels, these evangelists visited towns, won converts and established house churches in very brief periods of time, and on their return to these places at a later date they found thriving congregations. That was not achieved through using the material and vocabulary found in Paul's formal epistles.

The common people who heard Paul and his colleagues did not know of these heresies that flowered in the second century. The false teaching to which they were subject consisted of a rag-bag of half-believed and half-understood philosophical and religious maxims that constituted folklore, which the apostles categorised as "old wives' tales" and "fables" involving temptation and corruption. The apostles showed that this consisted of "godless chatter, superstitions, senseless controversies, godless and silly myths" and in its place presented the themes of the *kerymga* that gave ordinary people a vision of a risen, living Lord and Saviour. That accounts for the extraordinary success of the apostles' evangelism.

The mission to the north of Asia Minor provides the location for the Petrines and Jude and possibly Hebrews. In a previous paper (IBS)

19, 1997, 147-160) I have examined the points of contact between Jude and 2 Peter. It is clear that the preachers in northern mission were faced with pressure from a group whose teaching displayed the first signs of a developing libertinism, possibly on Gnostic lines. Preaching material was prepared and used by members of the group who may have heard each other preaching repeatedly. In time, Jude and Silvanus wrote up the material each in his own way, reflecting his own perceptions. Common material appears in each version, in the same order, but the expression and the underlying perceptions are quite different.

### The language of apostolic preaching

It is a mistake to believe that Paul's thinking dominated the missions of the apostolic bands. The Christian faith was not worked out by one person; much discussion and argument took place among the apostles. In connection with the epistle of James, Kümmel allows a period of 40 years "in view of the conceptual distance" between Paul's thinking and that of James. There is, however, no reason to suppose that there was a transition from the one to the other. Belief in salvation through works goes a long way back and it is likely that lively discussion on the subject took place among the apostles and that this was reflected in their epistles. The partnership of Paul and Silvanus, however, is of particular significance. When it is realised that the Pastoral Epistles did indeed come from Paul's hand, and that the Petrine Epistles and Hebrews came from that of Silvanus, then the points of contact between the two corpora and the unusual vocabulary shared by them assume a new significance.

Here it may be noted that the place of the secretary in these two corpora was rather different. Paul's secretaries wrote down exactly what he said, including each anacoluthon. Silvanus, on the other hand, had the freedom to express himself in his own way in writing the Petrine Epistles; hence the prime pattern is that of Silvanus. That is not to say that there was no input from Peter. The Petrine Epistles are not to be regarded as pseudonymous; they may very well convey thoughts that Peter wished his friend to convey. It is perverse to insist that the memories of Jesus that are found in 1 Peter are attempts by a pseudonymous writer to introduce a degree of

verisimilitude. 1 Peter 5:1 might well be translated, "I am an old man now, old enough to remember the sufferings of Christ..." and may well echo Peter's words.

P.N. Harrison and others have held that because many of the unusual words found in the Pastorals also occur in the second century writings of the Fathers and the Apologists, the Pastorals must be pseudonymous second century productions. New thinking requires new vocabulary, and the argument might be cogent if it could be shown that the hapaxes consisted of new words coined to meet the development of theology in the second century. However, none of these unusual words show such signs. They are not theologically significant words; their outstanding characteristic is ordinariness. They are for the most part, words that could happily be used by the common people. Of Harrison's 175 A1 words (found in the Pastorals but not elsewhere in the New Testament) 114 have cognates that are found in other Pauline epistles. Of 131 A2 words (found in the Pastorals and other New Testament books) 76% are found in the Gospels and Acts, which reflect not the second century but mid-first century oral tradition.

Of the "residue" of 82 words (found in the Pastorals but not in the New Testament, the Fathers or the Apologists) 68% are compound words. Some are distinguished only by an  $\alpha$ -privative. Some have compound roots. Over 60% have roots that are found in the Paulines that Harrison accepts as genuine.

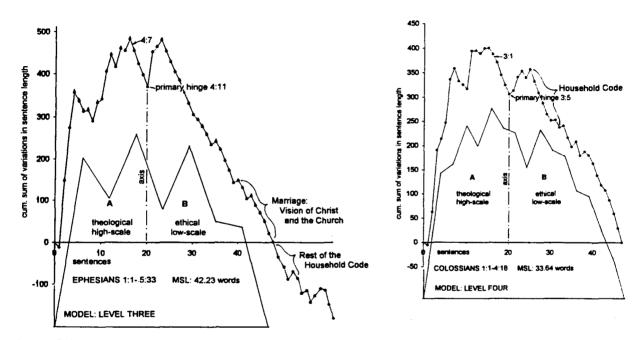
These data do not point to new second century vocabulary; they point rather to the use of dialect. Κοινή Greek could be used carefully and formally with literary intent, and in its more vulgar forms served the needs of uneducated people. Emphatic affixes, found in the hapaxes, are more often found in the colloquial use of words than in formal use that favours the simple verb. Compound words like "man-enslaver" (ἀνδραποδιστής) and "father-smiter" (πατραλφας) are more often found in dialect than in formal writing – compare the modern "lady-killer" and "baby-snatcher". The use of the α-privative does not necessarily point to literary sophistication; rather it may suggest colloquial use. In modern dialects a similar device may be found; a negative is coupled with an adjective rather

than use the antonym. In rural Aberdeenshire a lady would not be called ugly, but it might be said that she was "nae bonny" – the equivalent of an  $\alpha$ -privative. These indications, together with the occurrence of Grecisms, point to elements of dialect being used when Paul, Silvanus, Timothy and Titus conversed with each other and preached to common people. It is natural that such expressions would be found in Paul's pastoral letters to his close colleagues, but not found in his formal epistles to congregations. It may also explain Paul's astonishing success as an evangelist going into Greek-speaking territory. He met the common people and used the vulgar tongue they understood.

It is of great significance that these unusal words are found in the Pastorals and also in Sylvanus's works (1 and 2 Peter and Hebrews). The language that Paul and Silvanus used day by day in conversation and in preaching is reflected in their pastoral letters, but not in Paul's formal epistles. Sylvanus, however, did not make the distinction between formal and informal writing and a surprising number of them are found in Hebrews. This language developed into a pastoral genre that continued as a living voice and reappeared in the writings of the Fathers, who on the whole were pastors rather than academic authors.

### Telescoping time

To understand what really happened during the years of Paul's journeys, time has to be telescoped. Kümmel allows up to forty years to accommodate the change in conception from Paul's views on faith to James's views on works. That is perhaps an appropriate time to allow for such a change of thought in some modern academic settings, but it is a shot in the dark that is far from the mark with regard to Paul's time. Paul did not live in a modern academic environment; he lived in a very tough world where events moved very fast indeed. The list of Paul's sufferings in 2 Corinthians 11 is not a "literary device" as some critics would have it, but a reflection of the very dangerous life Paul lived. Perhaps critics need a stoning or two to appreciate this.



#### COMPARISON OF GRAPHS OF EPHESIANS AND COLOSSIANS AND MATHEMATICAL MODEL

Fig. 1 The first five chapters of Ephesians provide the prime pattern. Chapter 6 appears below the base line as an "afterthought" pattern. Note the extended section on marriage, which provides the culmination to the first session of dictation. The whole of Colossians provides a prime pattern. Note that the Household Code in Colossians is entirely in its short form and lies within the prime pattern. The material in Colossians has been completely recast.

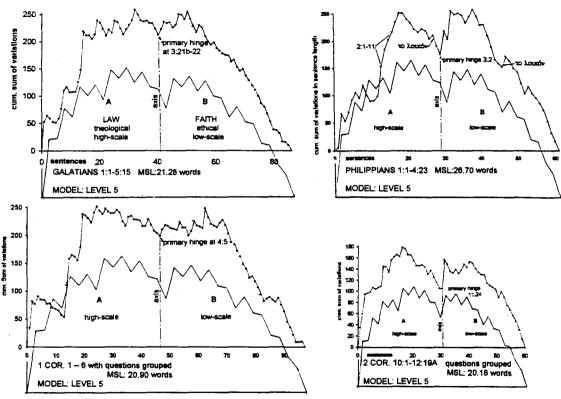


Fig. 2 These four prime patterns are all compared with Level 5 of the Model. They show the characteristic stepped pattern due to alternating groups of longer and shorter sentences, and also the division into high-scale (A) and low-scale (B) sections. Romans 1-14 provides a prime pattern which is a scaled-up version of Galatians. Romans 15 and 16 provide "afterthought" type patterns.

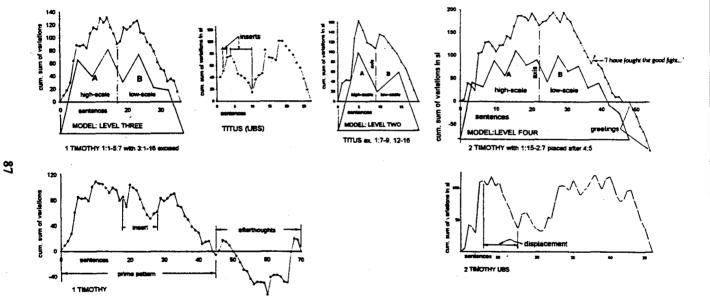


Fig. 3 Both 1 Timothy and Titus contain advice concerning church leaders. When the insertions are removed, the prime pattern of 1 Timothy (upper left) corresponds to Level 3 of the model, and Titus (lower right) corresponds to Level 2. The prime pattern of 2 Timothy (upper right) is restored when 1:15-2:7 is placed after 4:5. The greetings in 2 Timothy do not form part of the prime pattern and appear below the base line. Note the characteristic stepped pattern and high-scale and low-scale sections in these prime patterns.

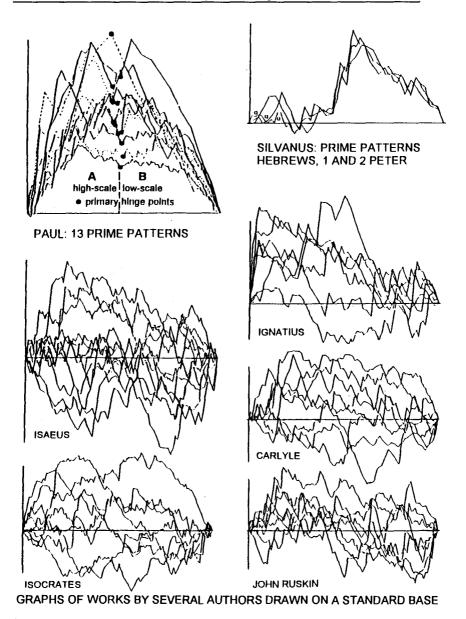


Fig. 4 Of these seven authors Paul and Silvanus show well-formed prime patterns of different types. These are scale-related and persist despite differences in the lengths of the works. Several of the epistles of Ignatius consistently show other features. The other authors show little consistency in their patterns.

Even in a protected academic environment the development of a student's thought can be astonishingly rapid; a student can mature considerably during a three-year course. But perhaps a better parallel to Paul's life may be found in the case of a young and immature schoolboy who joined the forces in 1939, and after seeing much violent death at close quarters emerged in 1945 a much older man, mature beyond his years.

There is no time to systematise Paul's thought, though systematic theologians love to try. Things moved too quickly; Paul dealt with so many changing situations, responding to each one as it arose. Pauline theologies are modern inventions, constructed for the most part on a limited selection of Pauline epistles by which "Paul" is defined, and within the conventions of modern academic study. The process is circular and usually fails to reveal the Paul who could speak gutter Greek to the common people and who tackled their half-understood folklore, holding up in its place a vision of the living Lord.

The scalometric evidence will not now allow such a narrow base to be selected for our understanding of Paul. In fig. 4 the comparison between the prime patterns of Paul and Silvanus and the graphs of other authors' works demonstrates the distinctiveness of the prime patterns. Of the others only Ignatius shows the kind of consistency in some of his works that constitutes a prime pattern, which in his case is quite different from those of Paul and Silvanus.

The scalometric evidence is strong. If this is disputed, then alternative explanations for these patterns must be given. It shows that there is a Pauline prime pattern in each one of the thirteen epistles. Only the passages in 1 Timothy and Titus concerning church leaders can be accepted as second century marginal notes that have been incorporated in the text. These insertions excepted, all the Pauline texts have to be fitted into the period of his travels and his last days in Rome. Likewise, the Petrines and Hebrews are tied by their patterns, and Jude is tied to 2 Peter, giving an insight into another apostolic mission in Asia Minor and a dating within the same period, between 56 and 60 AD.

I realise that this scenario is very much at odds with mainstream New Testament scholarship. It does not arise from any extreme fundamentalist disposition on my part, but this is the direction in which the scalometric evidence points. I shall be glad to receive criticism from others who have investigated scale in literature, and have done original research to substantiate their view.

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