

# *καί*-configurations in the greek new testament

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Philologists in their attempts to restore ancient texts or to determine the authenticity of disputed passages within a given text have not yet used the computer to the fullest extent possible in helping to resolve such problems. The purpose of this study is to suggest one possible way the computer may be of assistance in solving these textual difficulties. I shall first describe a method for obtaining a numerical text and explain its application to the study of *καὶ*-configuration in the Greek New Testament. Second, I shall illustrate how such analysis may help resolve some long-standing questions about the New Testament text. Then I shall develop an argument for solving a specific question of authenticity-- that involving the hymnic passages in the New Testament text. Finally I shall suggest some ways this kind of computer analysis of texts may be applied in the future.

### I. *A Numerical Text of the Greek New Testament*

The basic text used throughout this study is a text of the Greek New Testament prepared originally in machine-readable form by Professor A.Q. Morton. Morton described his initial difficulties in preparing this text : "A Greek New Testament, half a million characters, ran to a mile of paper tape, and the complete concordance of it ran to seven miles". (1) Modern storage capacity has greatly simplified problems such as those initially faced by Morton and his colleagues. Nevertheless in studying textual material, immense amounts of memory-capacity are required. The Greek New Testament, for example, contains some 137,328 words, of which 8947 are *καὶ*. What is of interest in this paper is the patterning or configurations of *καὶ* within the total text.

Articles, nouns, adjectives, prepositions, and a large class of particles occur in *καὶ*-configurations. By placing each of the grammatical forms which occur before and after *καὶ* into a specific category, the text can be searched for the configurations. Each grammatical form was assigned a number. A Snobol program was written to replace the article, for example, by the number '1'. There are nearly 20,000 articles in the Greek New Testament. By replacing all the articles by '1' the amount of storage space needed for the text is reduced. Taking into account duplicate forms in the article paradigm, there are 17 different articles. If all are replaced by a single form, this reduces the complexity by a factor of 17. Actually the simplification is greater. Two Greek articles are words of one letter; seven articles are words of two letters; five, words of three letters; and three articles have four letters.

Computer representation of the article with two letters required fourteen spaces. Hence it required fourteen times less space to represent this form by '1'. Similarly greater savings were achieved by the simplification of the remaining articles.

Two procedures may be employed to replace the words of a text by numbers : alternation and tables. The difference between the Snobol program of alternation and the table method is technically the difference between the complexity of an exponential function versus the complexity of a polynomial function. The latter is the simpler, so a table method was used.

In the numerical text a sentence is represented as 3 7 3 (3 = noun phrase; 7 = verb; 3 = noun phrase). *Καί* can function between two or more sentences or within a sentence. No New Testament book begins or ends with *καί*. Therefore every occurrence of *καί* is preceded and followed by at least one character : 1-7, 9, N, D. N stands for negatives and D for the disjunctive *ἀλλά*. There are a number of configurations of the form C@C@C. The second *καί* (@) is either C@ before or after the fundamental form C@C. More complex forms do not introduce additional basic considerations. There are 100 possible configurations of the form C@C. This does not include crasis forms (CKC). "Crisis" is a mixing of vowels and is found where one word ends with a vowel and the following begins with a vowel. The maximum number of crasis forms is also 100 (See Table 1).

The information on *καί* - configurations can be conveniently exhibited in tabular form by a 10 x 10 matrix. In the matrix, @ represents *καί*; '1', the article; '2', the pronoun; '3', the noun phrase; '4', the participle; '5', the preposition; '6', the infinitive; '7', the verb; '9', the particle; 'N', the negative and 'D', the disjunctive.

The 3@3 configuration appears approximately 963 times in the New Testament. This is one of the simplest configurations. A complex configuration may be represented by the sentence of Matthew 2 : 3, 4 : *ἀκούσας δὲ ὁ βασιλεὺς Ἡρώδης ἐπαράχθη καὶ πᾶσα Ἱερουσόλυμα μετ' αὐτοῦ καὶ συναγάγων πάντας τοὺς ἀρχιερεῖς καὶ γραμματεῖς τοῦ λαοῦ ἐπυνθάνετο παρ' αὐτῶν. Καὶ* in this passage functions as a deletion transformation and has the numerical form : 4-9-1-3-7-@-3-3-5-2-@-4-7-1-3-@-3-1-3-7-5-2-9-1. *Καί* thus may join single words, phrases, clauses, or sentences. According to Denniston it is not always clear how the elements joined by *καί* are to be understood (2). Denniston refers to syntactic, semantic, and punctuation functions (3).

Appealing to an author's style and usage to solve textual problems is a necessary and valuable principle for the textual critic. Establishing comparative norms for usage becomes easier with the numerical text. For example, if the number of words in each New Testament book is divided by the number of *καί*s in each book, we obtain a ratio of the measure of *καί* frequency. A ratio of 10 to 1 means that every 10th word will be *καί*. The ratio for Revelation is strikingly lower than that for any other New Testament book. Every eighth word in Revelation is *καί*. Mark, on the other hand, shows a ratio of 11 to 1 and Paul's Epistle to the Galatians has a word-*καί* ratio of 29 to 1.

## II. *The Study of the Numerical Text*

Once a numerical text has been produced, several possibilities open up for study. Analysis, for example, may reveal structural identities. These kinds of similarities may then shed light on difficult passages such as Matthew 27 : 5, 6 : 5-1-3-1-3-@-1-3-@-1-3-3. This configuration is dominated by the preposition (5) and can shed light on the structure of Matthew 28 : 19, which is structurally identical but problematic in terms of exegesis.

The Gospel of John has three configurations of the form N-@-9 which do not occur at all in the synoptic gospels as well as other unusual forms, e.g., John 17 : 20 : *ἀλλὰ καὶ περὶ*. This is a solecism and so those scholars wishing to athetize *ἀλλὰ* may very well be right and can now have further evidence for their position. The Gospels contain 83,586 words, of which 5641 are *καὶ*. Luke contains 19,404 words, of which 2055 are different. The words/*καὶ* ratio is 13.34 (see Table 4). Luke has five configurations which do not occur in Matthew or Mark (see Table 3). The Luke configurations are : 9-@-5; 9-@-6; D-@-1; D-@-3; N-@-2. Luke also has a 1-@-5 configuration which is only found once (Luke 22 : 37). This configuration is used in connection with a quotation from the Old Testament (Isaiah 53 : 12), a verbatim quotation and the *καὶ* here may be functioning either uniquely in calling attention to the quotation or serving as a punctuator. J.K. Elliot in commenting on study of the synoptic gospels wrote, "It is particularly important when evaluating the likeliest direction of change and assimilation to take all the variants into account" (4). The numerical text facilitates the process of considering possible variants in the synoptic texts.

The Epistles on the other hand display very different *καὶ* ratios. Paul's Epistle to the Romans (see Table 5) contains 7188 words of which 274 are *καὶ*. There are 47 different *καὶ* configurations from 9 families. First Corinthians has 35 different configurations in a total of 6892 words of which 277 are *καὶ*.

A different kind of study facilitated by a numerical text involves the question of the extent of modifiers. Ephesians 5 : 19 contains the modifier *πνευματικαῖς*. To demonstrate that the modifier extends to all constituents of the prepositional phrase, it is only necessary to show an unambiguous example of how the reversal of the final noun-adjective is understood. The pattern to be sought is 5-3-@-3-@-3-3.

The text can be questioned regarding the appropriate presence of a *καὶ*. In Matthew 3 : 16, for example, *καὶ* is absent in both the Alexandrian and the Western manuscripts (5). The pattern of the numerical text can be analyzed :

- Sentence A : 4-9-1-3-9-7-5-1-3  
                  @-9
- Sentence B : 7-2-1-3  
                  @
- Sentence C : 7-1-3-1-3-4-9-3  
                  (@)
- Sentence D : 4-5-2

Sentences B and C are at 3-@-7 boundaries. Sentence D is at a 3-@-4 boundary. Matthew uses just before the '3' in 3-@-4 a member of the 9 family. If Matthew 3 : 16 had the *καὶ*-configuration here (*ὡσεὶ καὶ περιστερὰν*), the text would have to be questioned.

But there is no evidence for  $\omega\sigma\epsilon\acute{\iota} \kappa\alpha\acute{\iota}$  and no similar example in the New Testament. This eliminates the possibility that  $\kappa\alpha\acute{\iota}$  is misplaced after  $\pi\epsilon\rho\acute{\iota}\sigma\tau\epsilon\rho\alpha\nu$  rather than before.

Such study of the New Testament text has been continued by Professor Morton and his associates. He wrote, "Our latest work is on rare words and the basic counting of how many words occurring once in a sample appear in a specified position such as ordinal position in a sentence or immediately after an occurrence of *and* or *the* (6)." A next step would be to progress from the simplified numerical text to a set of files of words, roots, affixes, etc.

### III. *The Authenticity of Hymnic Passages*

$\kappa\alpha\acute{\iota}$ -configurations are strings of words joined by  $\kappa\alpha\acute{\iota}$ . The uses of  $\kappa\alpha\acute{\iota}$ -configurations in a hymnic passage in the New Testament text may indicate whether the hymnic element is taken from another source or whether it is original with the author or at least adapted stylistically to conform with that author's literary habits. Analysis of the  $\kappa\alpha\acute{\iota}$ -configuration would tend to support the hypothesis that such elements are or are not interpolated.

Hymnic passages are sections within the larger text distinguished from that larger text by a change in language structure. For purposes of this analysis we can identify three basic structures within the hymnic passages :

- 1) the uses of  $\kappa\alpha\acute{\iota}$ ;
- 2) the relative clauses;
- 3) the prepositional phrases.

The uses of  $\kappa\alpha\acute{\iota}$  are helpful, because they occur in every book of the New Testament in ways that characterize the various types of texts. Mark, for instance, uses the pattern '@' -- '@' -- '@', and the Gospels, Acts and Revelation show  $\kappa\alpha\acute{\iota}$ -configurations different from those in the Epistles (8). Analysis of the numerical text cannot be used to consider all the traditional criteria (9) of hymnic passages, but certain features such as occurrence of  $\kappa\alpha\acute{\iota}$ , *hapax legomena*, clauses and structures do yield to such analysis.

Different  $\kappa\alpha\acute{\iota}$ -configurations in Matthew through Acts and Revelation are few. We find the same types over and over again. In the Epistles the number of different configurations is large, often embedded in complex linguistic structures.  $\kappa\alpha\acute{\iota}$ -configurations in Matthew through Acts and Revelation are used to bind together many single (paratactic) sentences. The sentences of the remaining books are mainly complex (hypotactic). Simple sentences do occur in the Epistles, but  $\kappa\alpha\acute{\iota}$  is used significantly less often in terms of the total words in an epistle.

The degree of complexity correlates with the type of text. New Testament scholars claim that narrative materials of Matthew through Acts and the Apocalyptic text of Revelation were composed for people who did not know the details narrated in the text. So readers of these texts relied on them for information. Epistolary texts assume that writer and recipient share a common context. This common context allows the writer to presume that certain statements will be understood in a

context-sensitive way.

Within these texts some configurations are rare; 2-@-5, for example, occurs in the hymnic passages in John. This configuration, however, is found only five times in the New Testament and all five are in John. Hence 2-@-5 is consistent with the style of Joannine authorship. There are 818 uses of *καί* in John embedded in 143 different configurations -- more different configurations than in any other New Testament book. The hymnic passage (John 17) which contains a 2@5 configuration shows the same variety as non hymnic passages in the variety of *καί*-configuration distribution. The words/*καί* ratio and *καί* per *καί* configuration ratio for John and the Joannine hymnic passages are compatible. Hence in certain New Testament texts computer analysis of *καί*-configurations shows that certain configurations are characteristic of the literary form and of the embedded hymns. The ratio of the word/*καί* and *καί*/*καί* configurations in hymnic passages (large enough for statistical comparison) is consistent with the words/*καί* and *καί*/*καί* configurations of the texts in which the hymns occur.

Certain conclusions can be drawn : *καί* is common to all hymnic elements. No single configuration is common to all hymnic elements. Thus no configuration is a generic feature of hymnic passages. The configurations in the hymnic passages of the Gospels, Acts and Revelation (10) are compatible with the *καί*-configurations in the texts in which they occur. Hence if these hymnic passages were incorporated, it was done in such a way as to make them compatible with the remaining text. Hymnic passages, because they are like their environments, are not like each other, which would be a normal feature of a common genre. Hymnic passages in the Epistles are incorporated and are compatible with the configurations characteristic of the Epistles. The hymnic passages in the Epistles, however, are incompatible structurally with the hymnic passages in the Gospels. Computer generated plots of the hymnic passages show the respective differences (see enclosures).

Let us now examine in greater detail a famous example of a New Testament hymnic passage, Phillipians 2 : 5-11 (see Table 6). The text in question reads :

- 5 6 Τοῦτο φρονεῖτε ἐν ὑμῖν ὃ καὶ ἐν Χριστῷ Ἰησοῦ, ὃς ἐν μορφῇ Θεοῦ  
7 ὑπάρχων οὐχ ἄρπαγμόν ἠγήσατο τὸ εἶναι ἴσα Θεῷ, ἀλλὰ ἑαυτὸν  
8 ἐκένωσεν μορφὴν δούλου λαβών. ἐν ὁμοιώματι ἀνθρώπων γενόμενος,  
9 καὶ σχήματι εὐρεθεὶς ὡς ἄνθρωπος, ἐταπείνωσεν ἑαυτὸν γενόμενος  
10 ὑπήκοος μέχρι θανάτου, θανάτου δὲ σταυροῦ. διὸ καὶ ὁ Θεὸς αὐτὸν  
11 ὑπερέψωσεν καὶ ἐχαρίσατο αὐτῷ τὸ ὄνομα τὸ ὑπὲρ πάντων ὀνομα, ἵνα ἐν  
τῷ ὀνόματι Ἰησοῦ [πάν γόνυ κάμψη] ἐπουρανίων καὶ ἐπιγείων καὶ  
καταχθονίων, [καὶ πάντα γλῶσσα ἐξομολογήσεται]<sup>a</sup> ὅτι Κύριος Ἰησοῦς  
Χριστὸς εἰς δόξαν Θεοῦ Πατρὸς.

Scholars who argue that this passage is a hymn affirm that this segment can be removed from its pericope without difficulty. (11). The configuration  $\delta\ \kappa\alpha\iota$  (relative plus  $\kappa\alpha\iota$ ) is a sign indicating that the writer is inserting a parenthetical thought or a non-restrictive relative clause. The identical configuration occurs in Mark 3 : 19; Matthew 1 ; 4; Acts 11 : 30; 26 : 10; Galatians 2 : 10; John 21 : 20; Matthew 27 : 57; I corinthians 11 : 26; II Corinthians 3 : 4.

In addition  $\delta\iota\omega$  and  $\kappa\alpha\iota$  are both conjunctions. The former appears with and without  $\kappa\alpha\iota$  as a conjunction. Here, as with  $\delta\ \kappa\alpha\iota$  above, we have either a case of redundancy or the  $\kappa\alpha\iota$  is performing as a literary punctuator. The former is unlikely in a careful author. Hence the configuration indicates that the clause is both an explanation and a transition to another event in the mind of the writer. The  $\kappa\alpha\iota$ , therefore, adds the feature of transition or movement between two concepts connected by  $\delta\omega$ . Additional examples would illustrate the difference between  $\delta\omega\ \kappa\alpha\iota$  and  $\kappa\alpha\iota$  and  $\delta\omega$  (12).

Barbara Eckman has argued that only four phrases fail to fit neatly into the five metrical patterns she identified within the hymn (13). One of these phrases involves a short series of  $\kappa\alpha\iota$ -configurations ( $\epsilon\pi\omicron\upsilon\rho\alpha\nu\acute{\iota}\omega\nu\ \kappa\alpha\iota\ \epsilon\pi\iota\gamma\epsilon\acute{\iota}\omega\nu\ \kappa\alpha\iota\ \kappa\alpha\tau\alpha\chi\theta\omicron\nu\acute{\iota}\omega\nu$ ). This pattern introduces a metrical anomaly. But computer analysis shows that this pattern is compatible with Pauline style (14). The compatibility would argue that Pauline usage accounts for the irregularity in what probably was the original hymn form and that there is no need for the elaborate metrical device proposed by Eckman (15). In the Eckman metrical arrangement every conjunction except  $\acute{\iota}\nu\alpha$  is located at the beginning of a line. The instances involving  $\kappa\alpha\iota$  conform to normal Pauline use as demonstrated by the configuration analysis.

#### IV. Future Applications

As noted, a next step is to develop files for closer analysis. A continued refinement of the use of graphic material promises to be a continuing help in solving disputed textual passages. The significant computer analysis of the Old Testament Book of Genesis carried out by Radday and associates at the Teknion in Haifa points to yet another kind of stylistic analysis of text for which the computer is uniquely adapted (16). This work on Genesis, like that on the Greek New Testament, provides data to help scholars solve long-standing problems. The work also indicates the limits of the computer as a tool in such textual study.

A next step in New Testament text studies would be to include the collection of manuscript fragments in the numerical text for additional possible insights into text reconstruction. The computer has already assisted in identification of a number of fragments previously unable to be placed (17).

## NOTES

- (1) A.O. Morton, "The Annals of Computing : The Greek New Testament", *Computers and the Humanities*, 14 (1980), 197.
- (2) J.D. Denniston, *The Greek Particles* (London : Oxford University Press, 1937), pp. 108-9. Denniston also notes the 'responsive' use of *καί* : "Under the heading "Responsive" I group a number of clearly marked uses of *καί* in which the particle has a structural function. . . it denotes the addition of the context of a subordinate clause . . . to that of the main clause (*ibid.* p. 294).
- (3) The punctuation function is noted, for example, by Robertson, who in commenting on Revelation chapters 12 ff., states that "every paragraph and most of the sentences begin with *καί*. In fact it is true of much of the Apocalypse". A. Robertson, ed. W.H. David, *A New Short Grammar of the Greek New Testament* (New York : Harper, 1931), p. 1182. This accords with the ratio our analysis found for this book.
- (4) J. K. Elliot, "Textual Criticism and the Synoptic Gospels", *New Testament Studies*, 26 (1980), 235.
- (5) See Bruce Metzger, *A Textual Commentary on the Greek New Testament* (United Bible Societies, 1971), p. 11.
- (6) Morton, *loc. cit.*, 199. He added, "What now lies before us is chronometry. We have always argued that a proper test of relative chronology is not a test of authorship which as failed because it changed with time but a quite different kind of occurrence which measures the separation of texts on first principles".
- (7) A list of hymnic passages in the New Testament usually includes the following : Matt 11 : 25-30; Luke 1 : 35; 46-55; 68-79; John 1 : 1-18; 17 : 20-23; Acts 4 : 24-30; Rom. 3 : 24-26; 11 : 33-36; I Cor. 13; Eph. 1 : 3-14; 2 : 19-22; 5 : 14; Phil. 2 : 5-11; Col. 1 : 12-20; I Tim. 3 : 16; II Tim. 1 : 9-10; 2 : 11-13; Tit. 2 : 11-14; 3 : 4-7; Heb. 1 : 1-4; I Peter 1 : 3-4; 2 : 22-24; 3 : 22; Rev. 1 : 6; 4 : 8-11; 5 : 9-13; 7 : 10-12.
- (8) I am indebted to Dr. Edward Robson for much of this analysis and indeed the work on the paper, although his conclusions on hymnic passages are different from my own.
- (9) Traditionally criteria for hymnic passages include (1) introductory terms such as 'believe' or 'confess'; (2) contextual dislocation of material; (3) the use of special grammatical structure; (4) syntactic disturbances within a narrative or epistle; (5) hapax legomena; (6) artistic structure and rhythmic style; (7) liturgical style; (8) participial clauses; (9) metre; (10) grammatical inconcinnity; (11) use of relative pronouns; (12) repetition of certain words and phrases; (13) number of stresses in a strophe; (14) repetition of *καί*.



- (10) The passages are Matt. 11 : 25-30; Luke 1 : 35, 46-55; 68-79; John 1 : 1-18; 17 : 20-23; Acts 4 : 24-30.
- (11) For a thorough study of the history of this controversy see R.P. Martin, *Carmen Christi : Philippians ii 5-11* (Cambridge : University Press, 1967). The argument in a nutshell states that linguistic and stylistic evidence demonstrates that the passage is both Pre-Pauline and a product of a Jewish-Christian community. There are features which make it likely that it was composed first in a Semitic tongue. Traits of style are found which are supposed to be unusual in Greek. Also phrases are identified which appear to be 'translation equivalents'.
- (12) For  $\delta\iota\delta\ \kappa\alpha\iota$  see Luke 1 : 35; Acts 10 : 29; Acts 24 : 26; Rom. 4 : 22; 15 : 22; II Cor. I; 20, 22; Heb. 11 : 12; 13 : 12. For  $\delta\iota\omicron$  see Matt. 27 : 8; Luke 7 : 7.
- (13) Barbara Eckman, "Metrical Analysis of the Philippians Hymn", *New Testament Studies*, 26, 260.
- (14) For instance, Eph. 1 : 20-22; Rom. 8 : 22.
- (15) Eckman also seems unaware of other metrical studies of the passage. See, for example, Otfried Hofius, "Der Christushymnus Philipper 2, 6-11, *Wissenschaftliche Untersuchungen zum Neuen Testament* (Tübingen : Mohr-Siebeck) 17 (1976).
- (16) See the report in the *New York Times*, November 8, 1981, p. 7.
- (17) "Denn mit Hilfe des Computers ist es gelungen, Fragmente von P 66, die bisher für unidentifizierbar galten, eindeutig festzulegen, obwohl sie z.T. nur wenige Buchstabenreste boten ... Von ihnen konnten unter Zuhilfenahme der geschilderten Methoden und Kontrollinstanzen bisher nicht weniger als sechs identifiziert werden ... "Kurt Aland, "Über die Möglichkeit der Identifikation kleiner Fragmente neutestamentlicher Handschriften mit Hilfe des Computers", *Studies in New Testament Language and Text* (Leiden : E.J. Brill, 1976), 33; cp. Klaus Junack, "Eine Fragmentensammlung mit Teilen aus I Tim (6241)", *ibid.*, 262-263.

TABLE 1

TABLE OF THE KAI-cnfs IN : (place book name here)

1-a-1	1-a-2	1-a-3	1-a-4	1-a-5	1-a-6	1-a-7	1-a-9	1-a-N	1-a-D
2-a-1	2-a-2	2-a-3	2-a-4	2-a-5	2-a-6	2-a-7	2-a-9	2-a-N	2-a-D
3-a-1	3-a-2	3-a-3	3-a-4	3-a-5	3-a-6	3-a-7	3-a-9	3-a-N	3-a-D
4-a-1	4-a-2	4-a-3	4-a-4	4-a-5	4-a-6	4-a-7	4-a-9	4-a-N	4-a-D
5-a-1	5-a-2	5-a-3	5-a-4	5-a-5	5-a-6	5-a-7	5-a-9	5-a-N	5-a-D
6-a-1	6-a-2	6-a-3	6-a-4	6-a-5	6-a-6	6-a-7	6-a-9	6-a-N	6-a-D
7-a-1	7-a-2	7-a-3	7-a-4	7-a-5	7-a-6	7-a-7	7-a-9	7-a-N	7-a-D
9-a-1	9-a-2	9-a-3	9-a-4	9-a-5	9-a-6	9-a-7	9-a-9	9-a-N	9-a-D
N-a-1	N-a-2	N-a-3	N-a-4	N-a-5	N-a-6	N-a-7	N-a-9	N-a-N	N-a-D
D-a-1	D-a-2	D-a-3	D-a-4	D-a-5	D-a-6	D-a-7	D-a-9	D-a-N	D-a-D

Crisis forms will also have a tabular form like the above.

TABLE OF THE CRASIS-cnfs IN :

1-K-1	1-K-2	1-K-3	1-K-4	1-K-5	1-K-6	1-K-7	1-K-9	1-K-N	1-K-D
2-K-1	2-K-2	2-K-3	2-K-4	2-K-5	2-K-6	2-K-7	2-K-9	2-K-N	2-K-D
3-K-1	3-K-2	3-K-3	3-K-4	3-K-5	3-K-6	3-K-7	3-K-9	3-K-N	3-K-D
4-K-1	4-K-2	4-K-3	4-K-4	4-K-5	4-K-6	4-K-7	4-K-9	4-K-N	4-K-D
5-K-1	5-K-2	5-K-3	5-K-4	5-K-5	5-K-6	5-K-7	5-K-9	5-K-N	5-K-D
6-K-1	6-K-2	6-K-3	6-K-4	6-K-5	6-K-6	6-K-7	6-K-9	6-K-N	6-K-D
7-K-1	7-K-2	7-K-3	7-K-4	7-K-5	7-K-6	7-K-7	7-K-9	7-K-N	7-K-D
9-K-1	9-K-2	9-K-3	9-K-4	9-K-5	9-K-6	9-K-7	9-K-9	9-K-N	9-K-D
N-K-1	N-K-2	N-K-3	N-K-4	N-K-5	N-K-6	N-K-7	N-K-9	N-K-N	N-K-D
D-K-1	D-K-2	D-K-3	D-K-4	D-K-5	D-K-6	D-K-7	D-K-9	D-K-N	D-K-D

TABLE 2

TABLE OF THE KAI-CONFIGURATIONS FOUND IN MATTHEW'S GOSPEL

(// /-C, indicates the configuration is not found)

///-1	///-2	///-3	1-a-4	///-5	///-6	///-7	///-9	///-N	///-D
2-a-1	2-a-2	2-a-3	2-a-4	2-a-5	2-a-6	2-a-7	2-a-9	2-a-N	///-D
3-a-1	3-a-2	3-a-3	3-a-4	3-a-5	3-a-6	3-a-7	3-a-9	3-a-N	///-D
4-a-1	4-a-2	4-a-3	4-a-4	///-5	///-6	4-a-7	4-a-9	4-a-N	///-D
///-1	///-2	///-3	///-4	///-5	///-6	///-7	///-9	///-N	///-D
6-a-1	6-a-2	6-a-3	6-a-4	///-5	6-a-6	6-a-7	6-a-9	///-N	///-D
7-a-1	7-a-2	7-a-3	7-a-4	///-5	7-a-6	7-a-7	7-a-9	7-a-N	7-a-D
9-a-1	9-a-2	9-a-3	9-a-4	///-5	///-6	9-a-7	///-9	///-N	///-D
N-a-1	///-2	///-3	///-4	///-5	///-6	///-7	///-9	///-N	///-D
D-a-1	D-a-2	D-a-3	D-a-4	D-a-5	D-a-6	D-a-7	D-a-9	D-a-N	D-a-D

- 1 = the definite article 6 = infinitives
- 2 = pronouns 7 = verbs
- 3 = nouns 9 = particles
- 4 = participles N = negatives
- 5 = prepositions D = disjunctive

TABLE 3

KAI-DISTRIBUTION IN MARK'S GOSPEL

total words in Mark = 11229  
 total different words == 1345  
 crasis forms = = 5  
 total prepositions = 735  
 words/kai ratio = 10.42  
 word/kai ratio = 1.25  
 word/prep ratio = 15.28  
 .page

TABLE OF THE KAI-CONFIGURATIONS IN MARK'S GOSPEL

(// /-C, indicates the configuration does not appear)

```

///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D
2-a-1 2-a-2 2-a-3 2-a-4 2-a-5 2-a-6 2-a-7 2-a-9 2-a-N ///-D
3-a-1 3-a-2 3-a-3 3-a-4 3-a-5 3-a-6 3-a-7 3-a-9 3-a-N ///-D
4-a-1 ///-2 4-a-3 4-a-4 4-a-5 ///-6 4-a-7 4-a-9 4-a-N ///-D
///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D
6-a-1 6-a-2 6-a-3 6-a-4 6-a-5 6-a-6 6-a-7 6-a-9 6-a-N ///-D
7-a-1 7-a-2 7-a-3 7-a-4 7-a-5 ///-6 7-a-7 7-a-9 7-a-N ///-D
9-a-1 9-a-2 9-a-3 9-a-4 ///-5 ///-6 9-a-7 9-a-9///-N ///-D
///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D
///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D
    
```

TABLE 4

THE KAI-CONFIGURATIONS IN LUKE'S GOSPEL

total words in Luke = 19404  
 total different words = 2055  
 crasis forms = 12  
 total prepositions = 1420  
 words/kai ratio = 13.34  
 word/kai ratio = 1.41  
 word/prep ratio = 13.66

TABLE OF THE KAI-CONFIGURATIONS IN LUKE'S GOSPEL

(//-/C, indicates the configuration does not appear)

///-1 ///-2 ///-3 ///-4 1-a-5 ///-6 ///-7 ///-9 ///-N ///-D  
 2-a-1 2-a-2 2-a-3 2-a-4 2-a-5 2-a-6 2-a-7 2-a-9 2-a-N ///-D  
 3-a-1 3-a-2 3-a-3 3-a-4 3-a-5 3-a-6 3-a-7 3-a-9 3-a-N ///-D  
 4-a-1 4-a-2 4-a-3 4-a-4 4-a-5 ///-6 4-a-7 4-a-9 4-a-N ///-D  
 ///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 6-a-1 ///-2 6-a-3 6-a-4 6-a-5 6-a-6 6-a-7 6-a-9 6-a-N ///-D  
 7-a-1 7-a-2 7-a-3 7-a-4 7-a-5 7-a-6 7-a-7 7-a-9 7-a-N ///-D  
 9-a-1 9-a-2 9-a-3 ///-4 9-a-5 9-a-6 9-a-7 9-a-9 9-a-N ///-D  
 N-a-1 N-a-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 D-a-1 ///-2 D-a-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D

1 = the definite article 6 = infinitives

TABLE 5

total words in Romans = 7094  
 total different words = 1068  
 total 'kai's = 274  
 crasis forms = 3  
 total prepositions = 627  
 words/kai ratio = 25.89  
 word/kai ratio = 3.90  
 word/prep ratio = 11.31

TABLE OF THE KAI-CONFIGURATIONS IN THE EPISTLE TO THE ROMANS

(// /-C, indicates the configuration does not appear)

///-1 ///-2 ///-3 ///-4 1-a-5 ///-6 ///-7 ///-9 ///-N ///-D  
 2-a-1 2-a-2 2-a-3 2-a-4 2-a-5 ///-6 2-a-7 2-a-9 2-a-N ///-D  
 3-a-1 3-a-2 3-a-3 3-a-4 3-a-5 3-a-6 3-a-7 3-a-9 ///-N ///-D  
 4-a-1 ///-2 4-a-3 4-a-4 ///-5 ///-6 4-a-7 4-a-9 ///-N ///-D  
 ///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 6-a-1 ///-2 6-a-3 ///-4 ///-5 ///-6 ///-7 ///-9 6-a-N ///-D  
 7-a-1 7-a-2 7-a-3 ///-4 7-a-5 7-a-6 7-a-7 7-a-9 7-a-N ///-D  
 9-a-1 9-a-2 9-a-3 9-a-4 9-a-5 ///-6 9-a-7 ///-9 ///-N ///-D  
 ///-1 ///-2 N-a-3 ///-4 N-a-5 ///-6 ///-7 ///-9 ///-N ///-D  
 D-a-1 D-a-2 D-a-3 D-a-4 D-a-5 ///-6 D-a-7 ///-9 ///-N ///-D

TABLE 6

total words in Philippians = 1624  
 total different words = 448  
 crasis forms = 4  
 total prepositions = 162  
 total 'kai's = 107  
 words/kai ratio = 15.18  
 word/kai ratio = 4.19  
 word/prep ratio = 2.77

TABLE OF THE KAI-CONFIGURATIONS IN PHILIPPIANS

(// /-C, indicates the configuration does not appear)

///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 2-a-1 2-a-2 2-a-3 2-a-4 2-a-5 2-a-6 2-a-7 2-a-9///-N ///-D  
 3-a-1 3-a-2 3-a-3 3-a-4 3-a-5 ///-6 3-a-7 3-a-9 3-a-N ///-D  
 ///-1 ///-2 4-a-3 4-a-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 ///-1 ///-2 5-a-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 6-a-1 ///-2 ///-3 ///-4 6-a-5 ///-6 ///-7 ///-9 ///-N ///-D  
 7-a-1 7-a-2 7-a-3 ///-4 7-a-5 7-a-6 7-a-7 7-a-9 ///-N ///-D  
 9-a-1 9-a-2 ///-3 9-a-4 9-a-5 ///-6 9-a-7 9-a-9 ///-N ///-D  
 ///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D  
 ///-1 ///-2 ///-3 ///-4 ///-5 ///-6 ///-7 ///-9 ///-N ///-D