A Genealogical History of the Greek Text of the New Testament

Volume 13

A Genealogical History of the Greek Text of the First Thessalonians

By

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CHAPTER 1
INTRODUCTION

This book is the thirteenth in a series of studies regarding the genealogical history of the text of the Greek New Testament. Volume 1 provided the genealogical history of the Greek text of the Gospel of Matthew; this volume does the same for the Book of 1 Thessalonians. The first volume provides an introduction to textual criticism, a review of the various textual critical theories and methodologies, a description of a genealogical theory of textual criticism along with its methodology. Readers not familiar with that volume should read at least the first four chapters of that study before going further, because this work presumes the reader has that informed background. What follows is a brief summary of those chapters.

Textual Criticism

Textual criticism is the branch of literary science which studies surviving copies of ancient literature[1] with the intent of determining the original form of a literary composition.[2] The problem is that surviving copies of a composition differ because of scribal errors accumulated during the copying history of the composition. At certain places in the text of a composition, existing copies may differ, one having this reading, another having that reading, and yet another having the reading originally written by the author. Such places are called places of variation, and such differing readings are called textual variants. Every place of variation has at least two textual variants.

Because every manuscript is a copy of some earlier copy (exemplar), intuitively one imagines the history of the manuscripts of a composition to be like a family tree. So initially textual scholars of classical literature took this approach with some measure of success. However, when it came to the text of the Greek New Testament, scholars despaired and regarded the genealogical

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[1] Literature composed before the invention of printing, copies of which exist only in handwritten documents. A handwritten copy is referred to as a manuscript.

[2] The original text of a composition, that is, the actual words written by the hand of its author, is referred to as its autographic text.

approach as much too complex because of the large number of manuscripts and large number of variants. So, various theories and methodologies were developed to work with the variants at each place of variation to decide which reading is more likely original. But with the development of high-speed computers, the complex data processing is no longer a problem; all that is needed is a viable genealogical theory together with its associated programable methodology. That's where this project came on the scene.

The present genealogical theory is based on several known facts about the relationship of manuscripts and variant readings. (1) It is a fact that the variants in a manuscript consist of all the uncorrected scribal errors of its ancestral exemplars; this collection of variants may be regarded as the genealogical history of the manuscript, and may be likened to its DNA code. In addition, the variants introduced by the parent exemplar of a manuscript may be regarded as its sibling gene. So, every manuscript has its own DNA and sibling gene, and these data are recoverable from the manuscript database. (2) Sibling manuscripts may be identified by mutual sibling genes, or by greatest quantitative affinity,[3] or by both. (3) Sibling manuscripts are daughters of the same parent exemplar the readings of which may be recovered from the consensus of its daughters' readings, except where no consensus exists. Sibling daughter manuscripts inherit all the readings of their parent exemplar except where their own scribes initiate a new one. In case of ambiguity (where no consensus exists), one variant will have been inherited and the other will have been newly initiated. Inherited variants have history and may be identified by the principle of delayed ambiguity,[4] whereas newly initiated variants have no history and fail the test of delayed ambiguity. (4) A reconstructed exemplar may stand in place of all its descendants in the database, and function as their representative in that stage of reconstructing the genealogical history. (5) Iteration of the above steps will converge genealogical stemma into a single exemplar representing the autographic text. The actual methodology as described in the first volume is more complex than the above, but the above is sufficient to describe the basic principles.

The Problem of Mixture

Mixture occurred when a scribe copied from more than one exemplar. Critics of the genealogical method assert that mixture creates an irresolvable complication. But, as it turned out, as far as the reconstructing procedure is concerned, a reading copied from a secondary exemplar is

[3] Quantitative affinity is a measure of how similar two manuscripts are to one another.

[4] The principle of delayed ambiguity says that the inherited variant will be a reading of a sibling sister exemplar when it develops.

no different than a variant newly initiated by the scribe either by mistake or intent. Both are uninherited from the primary exemplar; the only difference is that a newly initiated variant has no history, whereas a variant borrowed by mixture has a history, but a history outside the genealogical descent of the primary exemplar. So, mixture is not a problem for the reconstruction methodology described above. The sources of mixture in genealogical history may be of interest in some cases. A separate algorithm of the software finds the most likely source of every variant introduced by mixture rather than by scribal error or intent.

The Database Used

The database used in this project is derived from an expansion of the Nestle-Aland 27th edition of the *Greek New Testament*[5] hereafter referred to as NA-27. The variations of the text are listed at the bottom of each page, providing the verse number where the variation occurs, the associated symbol indicating the kind of variation, the alternate readings that occur there, and a list of witnesses[6] that contain the given alternate reading. The list of witnesses is provided in compressed form in order to avoid as much repetition as possible. This compressed form is useful for conserving paper and ink, and is relatively easy for scholars to follow. But the computer software must have every item of data explicitly recorded, that is, there must be a record of every witness to the text under study, and a record of which variant reading each witness has at every place of variation. This necessity requires the NA-27 database to be unpacked and expanded. Until recently the NA-27 database existed only in printed form, and expanding the data into the form needed by the genealogical software was a complex and time consuming task.[7] However, the database is now available in digital electronic form in the *Stuttgart Electronic Study Bible*.[8] That form of the database is capable of being expanded and unpacked electronically.

The expanded database consists of two separate files, one containing a list of every witness together with its name, date, language, and content. The second file is a list of every place of variation in the NA-27 database, the chapter and verse number where the variation occurs, the

[5] *Novum Testamentum Graece* (Stuttgart: Deutsche Bibelgesellschaft, 1997).

[6] The witnesses consist of individual manuscripts, translations, and patristic quotations.

[7] All my prior research with the genealogical software was done with data manually extracted from the already expanded database in the United Bible Society's *Greek New Testament*.

[8] Christof Hardmeier, Eep Talstra, and Bertram Salzmann, *The Stuttgart Electronic Study Bible* (Stuttgart, Germany: The German Bible Society, 2004); used with permission.

Greek text of each variant at that place of variation, along with a list of witnesses containing the given variant.

The present program, called Lachmann-10 herein, is written in the Turbo Pascal 7.0 programming language intended for IBM compatible machines with extended memory. The size of the problems it can handle is flexible and is limited only by the amount of RAM available and the speed of the machine [up to a maximum of 2,000 variation units and 2,000 manuscripts]. Large problems require a reasonable amount of time to converge on a solution. The next chapter describes the genealogical history of the extant witnesses to the Greek text of the Book of 1 Thessalonians.

CHAPTER 2
WITNESSES TO THE TEXT OF 1 THESSALONIANS

The witnesses[1] to the text of the Book of 1 Thessalonians used in this study are those derived from the electronic form of the textual apparatus of the NA-27 edition of the Greek New Testament as contained in the *Stuttgart Electronic Study Bible*[2] as edited and modified for the purposes of this project. They consist of 105 existing witness[3] of various types:

(1) Papyrus manuscripts	3
(2) Uncial manuscripts	23
(3) Minuscule manuscripts	36
(4) Lectionary manuscripts	2
(5) Latin Versions	11
(6) Egyptian Versions	4
(7) Syriac Versions	2
(8) Greek Church Fathers	7
(9) Latin Church Fathers	9
(10) Printed Editions	8[4]

The witnesses to the text of an ancient document must have several characteristics before a reasonably reliable reconstruction of its genealogical history can be made. Among these are (1) number of witnesses, (2) date, (3) completeness, (4) limited variableness, (5) commonness of text, and (6) genealogical affinity. These characteristics of the available witnesses to the text of 1 Thessalonians are discussed below and are shown to be suitable for a reasonable reconstruction of its textual history.

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[1] I use the term witness because the reconstruction of genealogical history derives evidence not only from extant manuscripts but also from ancient translations and quotations from church fathers. In addition, a few printed editions are involved although not for reconstruction purposes.

[2] Christof Hardmeier, Eep Talstra, and Bertram Salzmann, *The Stuttgart Electronic Study Bible* (Stuttgart, Germany: The German Bible Society, 2004).

[3] Appendix A lists all the extant witnesses by name, date, language, content, number of readings, and percentage of completeness.

[4] Four editions of the Latin Vulgate: vg^cl, cg^s, vg^st, and vg^ww; Scrivener's TR; Hodges-Farstad HF; Robinson-Pierpont's RP; and NA27. These do not contribute to reconstructing the stemma.

Number of Witnesses

Contrary to the number of available witnesses to the texts of ancient classical literature, there are approximately 2,328 existing Greek manuscripts of the Gospels, including about 178 fragments.[5] This does not include the witnesses of the ancient translations and church fathers. This study makes use of the 105 witnesses to the Book of 1 Thessalonians recorded in the NA-27 apparatus which includes all the ancient papyri witnesses and most of the existing manuscripts dating before the ninth century and a good sample of those from later times. This number includes the consensus witness of the many manuscripts of the text used in the Greek speaking Byzantine churches together with a number of manuscripts related to the Byzantine text. Also, it contains the consensus witness of the many manuscripts of the Latin Vulgate and the individual witness of four different printed editions of the Vulgate. The various Old Latin translations also are represented by a consensus of a number of manuscripts of each of these individual translations. Consequently, the consensus witnesses bring many additional manuscripts indirectly into the reconstruction process. There is good reason to believe that there are sufficient witnesses to the text of the Book of 1 Thessalonians to reconstruct its genealogical history.

Date

While it is possible to reconstruct the genealogical history of a text without the benefit of dates, they are very helpful for accurately locating scribal activity in real history. The dates of the witnesses to 1 Thessalonians range from the second to the twentieth centuries.[6] Table 2.1 and its associated graph display the reasonably good distribution of the witnesses by date.

Completeness

Many of the witnesses are fragmentary, not all their text having survived the passage of time. Only 44 of the 105 witnesses have 96-100% of their text complete, and only 63 have a text 80% or more complete; thus, completeness is significant for this study. Table 2.2 and its associated graph display the distribution of completeness for the witnesses used in this study.

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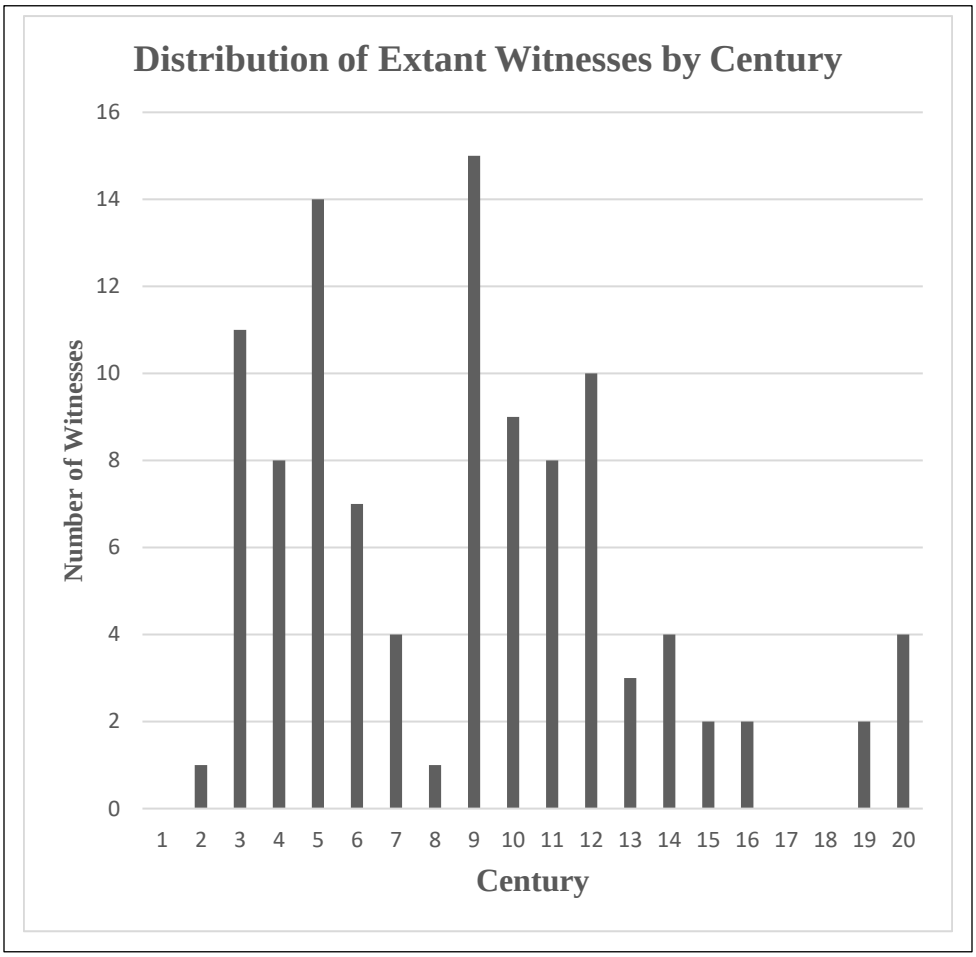
[5] Aland and Aland, p. 83.

[6] The witnesses in the 19th to the21st centuries are printed editions that do not contribute to the reconstruction of the genealogical history.

Table 2.1:
Distribution of Extant Witnesses by Century:

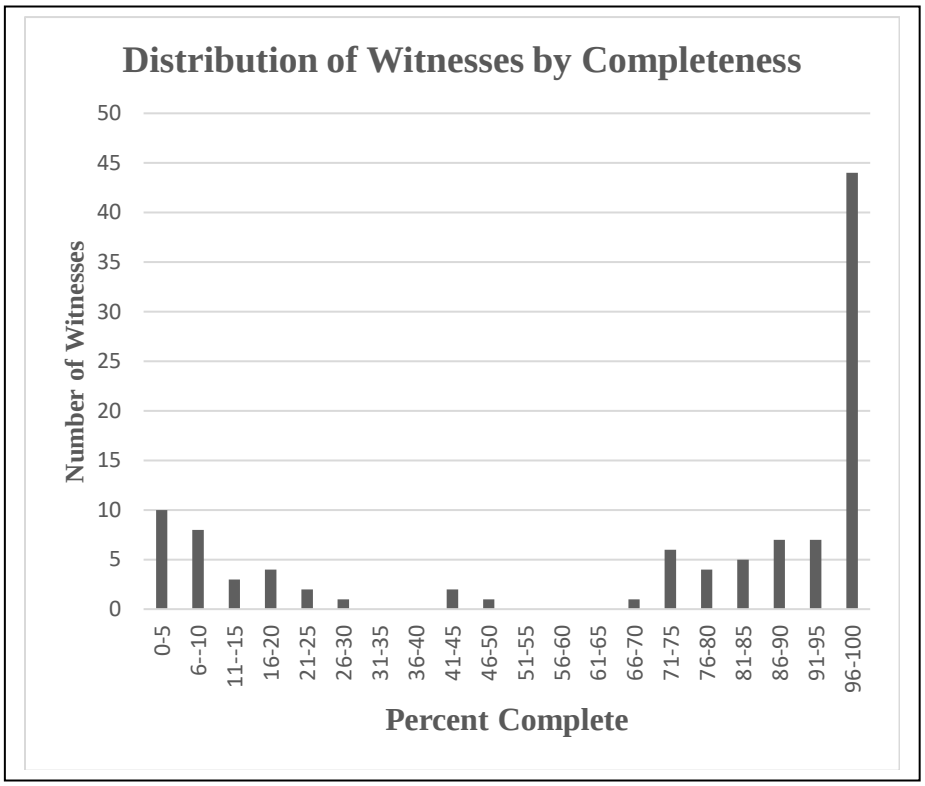
Century	Number of Witnesses
1	0
2	1
3	11
4	8
5	14
6	7
7	4
8	1
9	15
10	9
11	8
12	10
13	3
14	4
15	2
16	2
17	0
18	0
19	2
20	4
21	0



Completeness is important for the reconstruction of the textual history, because the computer depends on minimal difference between witnesses to determine quantitative affinity. Consequently, the computer reconstructed the genealogical history on the basis of witnesses having at least 80% of their text complete; the more fragmentary witnesses are added to the genealogical tree where they best fit after the tree is constructed. The fragmentary witnesses are still important and should not be excluded from the study because they contribute to establishing fixed dates in the textual history.

Table 2.2
Distribution of Witnesses by Completeness:

% Complete	Number of Witnesses
0-5	10
6-10	8
11-15	3
16-20	4
21-25	2
26-30	1
31-35	0
36-40	0
41-45	2
46-50	1
51-55	0
56-60	0
61-65	0
66-70	1
71-75	6
76-80	4
81-85	5
86-90	7
91-95	7
96-100	44



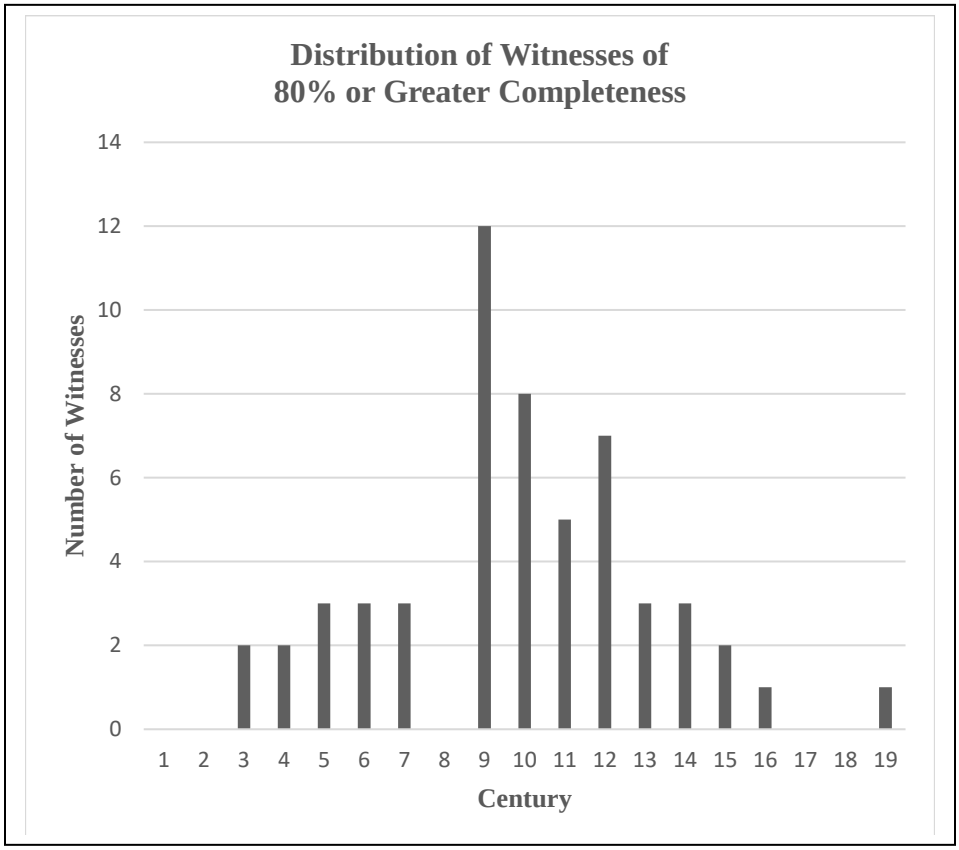
Because many of the witnesses are fragmentary, it is of interest to know the distribution of those witnesses having 80% or greater completeness. They are the ones that contribute to the re-construction of the genealogical history. Table 2.3 and its associated graph display the distribution of these witnesses. It is evident that numerous contributing witnesses are from as early as the third century, so a reasonably good reconstruction can be expected.

Limited Diversity

The more diverse the text the more difficult the reconstruction of its textual history is. In the overall picture, all witnesses to 1 Thessalonians agree in over 90% of the text. The places of variation and the number of variants at those sites provide the data for reconstruction. However, even so, the number of places of variation and the number of variants constitute a limit to what can be reconstructed because of the magnitude and complexity of the problem.

Table 2.3
Distribution of Witnesses of 80% or Greater Completeness by Century

Century	Num. of Witnesses
1	0
2	0
3	2
4	2
5	3
6	3
7	3
8	0
9	12
10	8
11	5
12	7
13	3
14	3
15	2
16	1
17	0
18	0
19	1



But modern technology has expanded that limit to where reconstruction is now possible for texts the size and diversity of 1 Thessalonians. The NA-27 apparatus records 93 places of variation[7] for the Book of 1 Thessalonians with a total of 199 variant readings distributed among them.[8] This averaged out to 2.14 variants per place of variation. In earlier decades, this amount of information would have been impossible to manually process, but not so today; my desktop computer provides complete solutions to problems this size in just a matter of minutes. Table 2.4 and its associated graph display the distribution of the number of variations per place of variation. For

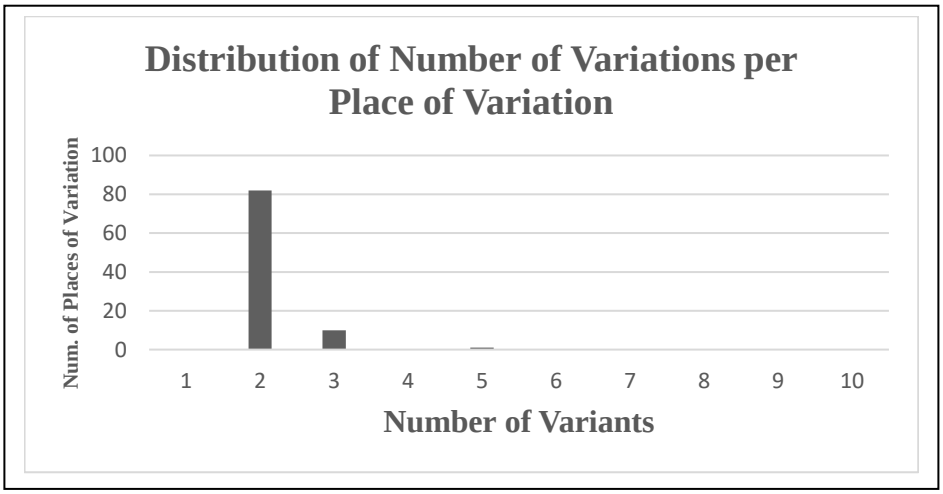
[7] Of course, there are more places of variation than this, but the editors of the NA-27 text have weeded out those that are insignificant for reconstruction and meaning.

[8] Appendix B provides a map showing where the places of variation occur in the text by chapter and verse.

example, 82 places of variation have only two variations whereas only one place of variation has five variations.

Table 2.4
Distribution of Number of Variations per Place of Variation

Number of variants	Number of Places of Variation
1	0
2	82
3	10
4	0
5	1
6	0
7	0
8	0
9	0
10	0
Total =	199



However, a few maverick witnesses occur whose diversity obscures their genealogical affinity. These witnesses skew the reconstruction of the stemma and for this reason are excluded from the process but are added to the completed stemma where they best fit. For 1 Thessalonians they are A* and its correctors, vg^b, vg^cl, and vg^st; these each have an affinity with their parent exemplar of only 65-70%.

The NA-27 apparatus records seven different types of variations to the text. Table 2.5 displays the distribution of these types of variation for the Book of 1 Thessalonians. While the type of variation has no significance for the reconstruction process, the information is provided for those who are interested.

Table 2.5
Distribution of Variation Type

Omit a word	38
Omit a phrase	8
Alternate word	96
Alternate words	16
Transposed words	6
Added word or phrase	35
Other	0
Total =	199

Commonness of Text

Commonness is a measure of the percentage of text two witnesses have in common. When two witnesses both have complete texts, that is, they are not fragmentary, having readings at every place of variation, they have 100% commonness, regardless of the agreement or disagreement of their readings.

Fragmentary witnesses, however, are less than complete and may actually have no commonness of text. For example, witness A may be 40% complete, lacking the text for the last 60% of the places of variation, and witness B may be 40% complete, lacking the text for the first 60% of the places of variation; as a result, the two witnesses have no commonness of text. The greater the commonness of text two witnesses have the greater potential they have for genealogical affinity. Table 2.6 and its associated graph display the distribution of commonness each witness shares with every other witness for the Book of 1 Thessalonians.

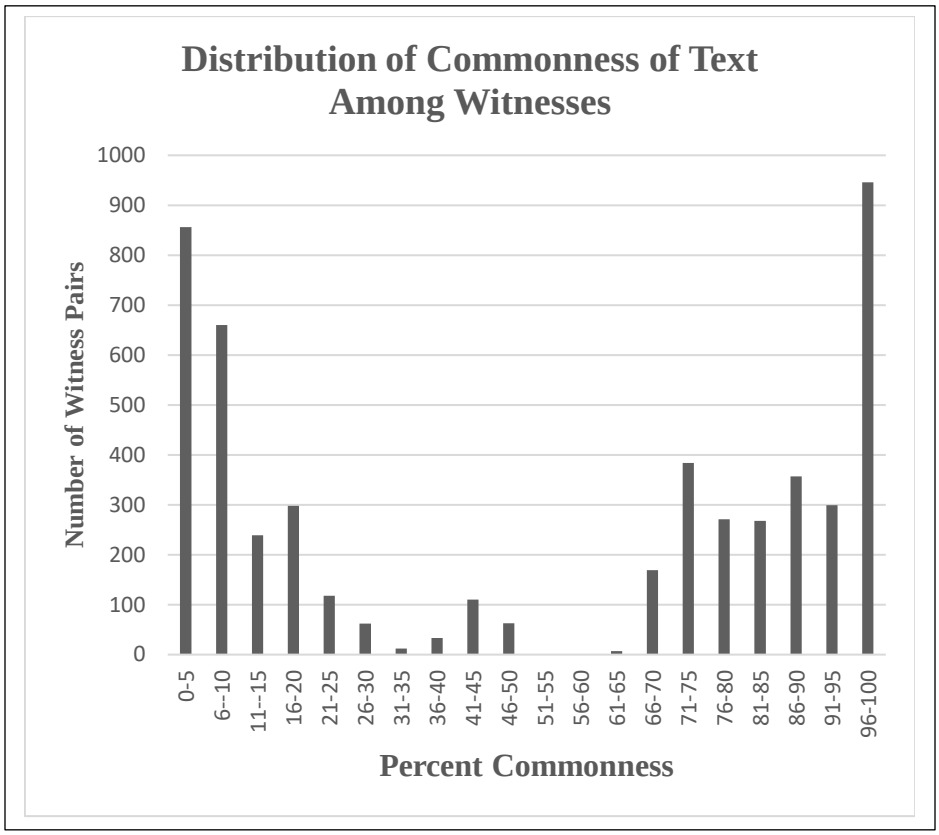
Quantitative Affinity

Quantitative affinity[9] is a measure of how strongly two witnesses are genealogically related. Witnesses are genealogically related when they have many of the same readings at their shared places of variation. Quantitative affinity is determined by the number of places of variation where the witnesses have the same reading divided by the number of places of variation the witnesses have in common. For example, if witness A and witness B have 1,000 places of variation in common, and in 952 places they have the same reading, the quantitative affinity of A to B is 952 ÷ 1,000 = 0.952 or 95.2%. Table 2.7 and its associated graph display the distribution of quantitative affinity among all the pairs of witnesses for the Book of 1 Thessalonians.

[9] Quantitative affinity is supplemented by the sibling gene to affirm sibling relationship.

Table 2.6
Distribution of Commonness of Text among Witnesses

% Commonness	Number of witness pairs
0-5	856
6-10	660
11-15	239
16-20	298
21-25	118
26-30	62
31-35	12
36-40	33
41-45	110
46-50	63
51-55	0
56-60	0
61-65	7
66-70	169
71-75	384
76-80	271
81-85	268
86-90	357
91-95	299
96-100	946



It is evident that many of the extant witnesses to 1 Thessalonians have relatively strong quantitative affinity with one another. These data are skewed because of the many fragmentary witnesses. A better picture of the significant affinity is that which is among witnesses having 80% content or greater. These witnesses are the ones used to reconstruct the genealogical history. Table 2.8 and its associated graph display the distribution of quantitative affinity among witnesses having 80% content or greater. This suggests that reconstruction of the genealogical history is reasonably feasible.

Genealogical Affinity

Genealogical affinity among witnesses occurs when they share a common sibling gene. The sibling gene of a witness consists of the variants initiated in its parent exemplar. This information is derived from the database as the variants two witnesses share that occur a minimum number of times in the database.

Conclusion

There are sufficient witnesses to the text of the Book of 1 Thessalonians with dates distributed over the historical period of interest, being sufficiently complete, having relatively limited diversity, and having ample mutual commonness and strong genealogical affinity. There is good reason to expect that the genealogical history derived from these witnesses will be a good approximation of the actual textual history of the book.

Table 2.7
Distribution of Quantitative Affinity
Among all Witnesses

% Affinity	Number of Witnesses
0-5	457
6--10	0
11--15	0
16-20	4
21-25	45
26-30	11
31-35	105
36-40	67
41-45	60
46-50	302
51-55	180
56-60	306
61-65	586
66-70	773
71-75	747
76-80	670
81-85	434
86-90	236
91-95	149
96-100	328

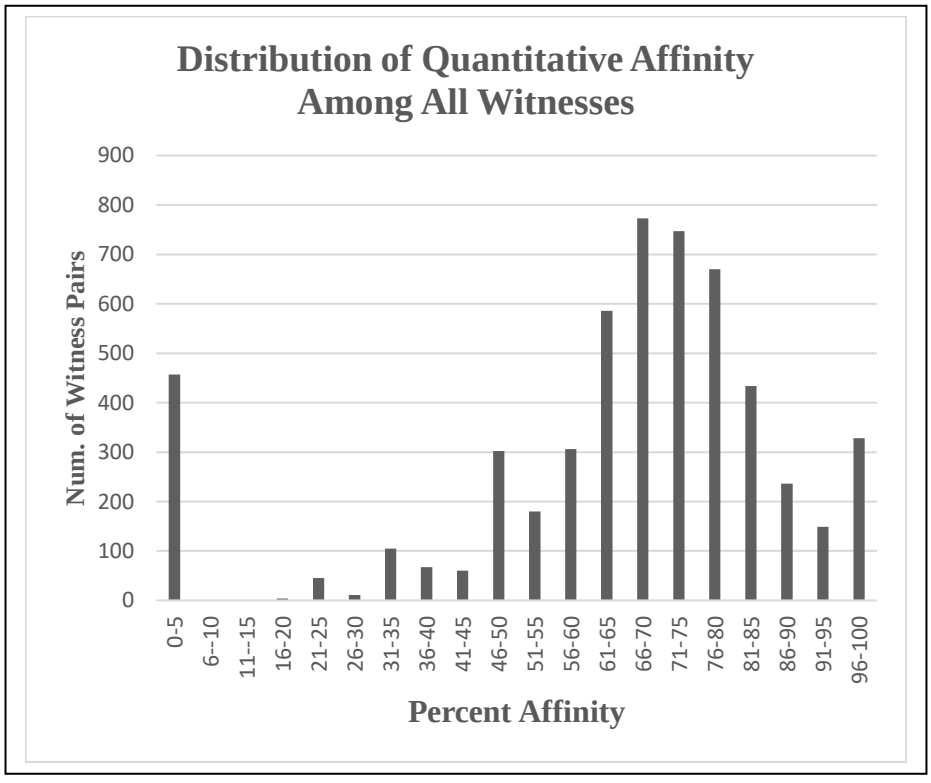
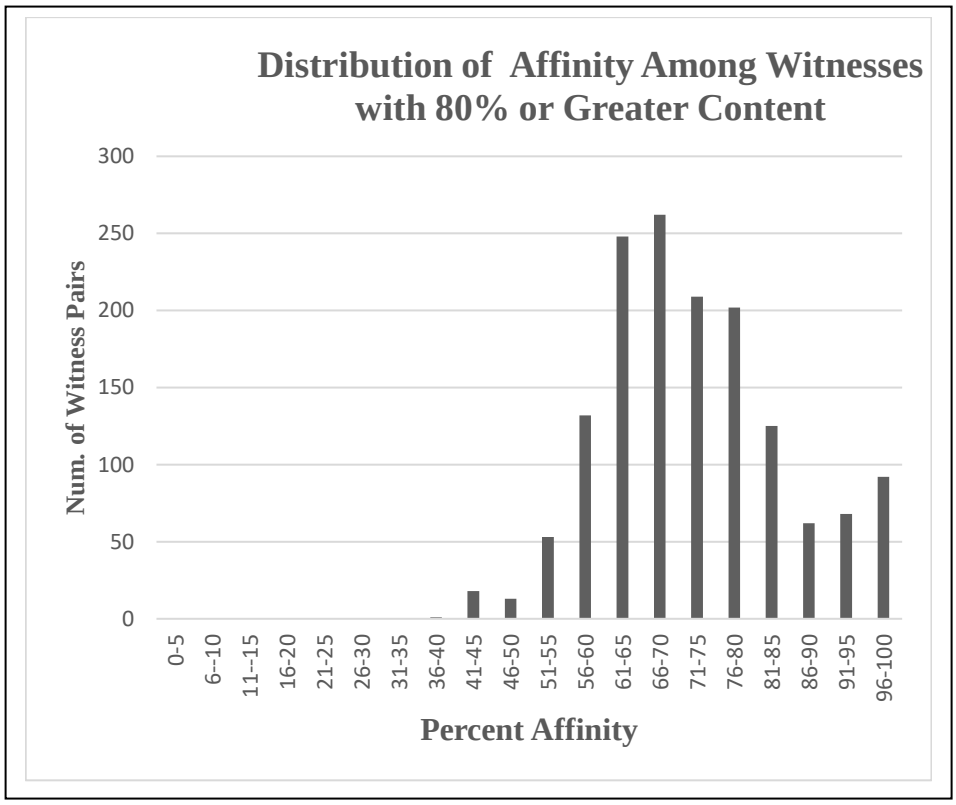


Table 2.8
Distribution of Quantitative Affinity Among Witnesses with 80% or Greater Content

% Affin-ity	Number of Wit-nesses
0-5	0
6--10	0
11--15	0
16-20	0
21-25	0
26-30	0
31-35	0
36-40	1
41-45	18
46-50	13
51-55	53
56-60	132
61-65	248
66-70	262
71-75	209
76-80	202
81-85	125
86-90	62
91-95	68
96-100	92



CHAPTER 3
GENEALOGICAL HISTORY OF THE MANUSCRIPTS OF 1 THESSALONIANS

This chapter presents the genealogical history of the manuscripts[1] of the Greek text of the Book of 1 Thessalonians as reconstructed by computer program Lachmann-10.[2] Beginning with a data base of 105 existing witnesses, 93 places of variation, and 199 variants, the program reconstructed 26 intermediate exemplars, arranging them in the genealogical stemma (tree diagram) presented in its full form in Appendix C, but in a condensed form in Figure 3.1.[3] This condensed form portrays the genealogical interrelationship of all the reconstructed exemplars of the text of 1 Thessalonians but with only one principal extant witness. Figure 3.2 displays a second tree diagram including most of the terminal witnesses. The rectangular boxes contain the information for the exemplars created by the software and the boxes with rounded corners contain the information for the extant witnesses. Witnesses in the same box are siblings. All the technical data and diagrams contained in this chapter were derived from the monitor screen of Lachmann-10 or the report it created.

The head exemplars of the three main branches of the stemma are Exemplars Ex-114#, Ex-129#, and Ex-130#; the texts of these exemplars are the ancient recensions from which the three unique text traditions developed. These branches are quite independent of one another, having mutual affinities ranging from 71% to 86%. But they have affinities with the autograph ranging from 81% to 97%. In addition, the sibling gene of each uniquely distinguishes them from one another. The following table lists the mutual differences and affinities of these exemplars.

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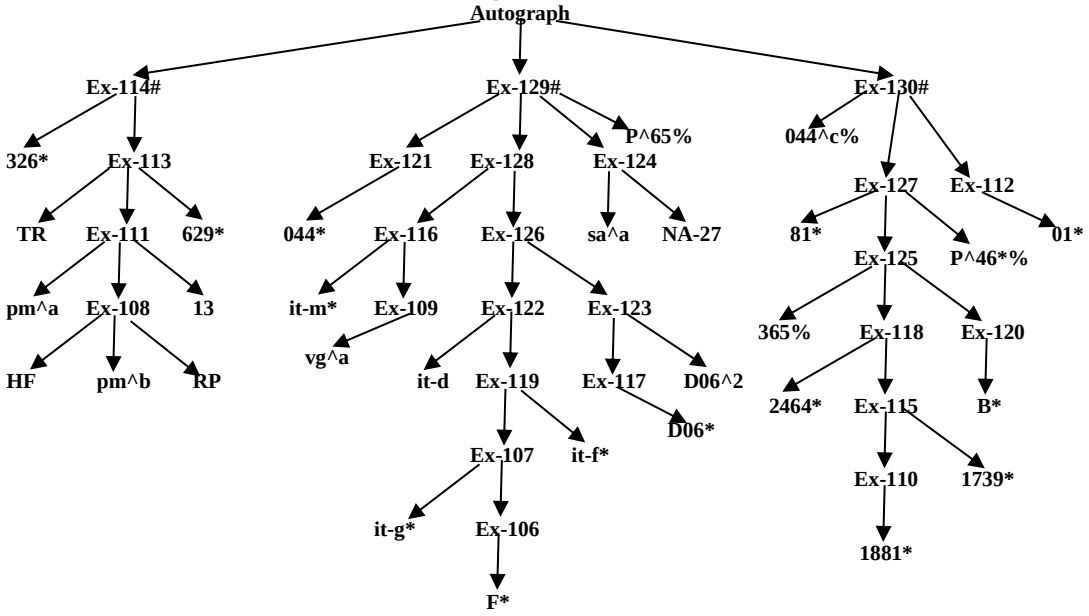
[1] The term *manuscript* is used here in its inclusive sense of manuscripts, translations, church fathers, and reconstructed exemplars—the sense I usually assign to the term *witness*.

[2] The total computing time was one minute and forty-three seconds including the time required for the software to assemble and format all the information contained in the tables, diagrams, and appendices of this book.

[3] The full diagram, displayed in Appendix C, requires six pages. The condensed form deletes all the terminal branches (extant witnesses) except one at each exemplar—the most interesting one. Likewise, it omits exemplars that only account for same-generation mixture (those with a $ sign attached to their name).

	Ex-114	Ex-129	Ex-130	Autograph
Ex-114		77%	71%	81%
Ex-129	21		86%	97%
Ex-130	27	13		89%
Autograph	18	3	10	

Figure 3.1
Condensed Tree Diagram of 1 Thessalonians

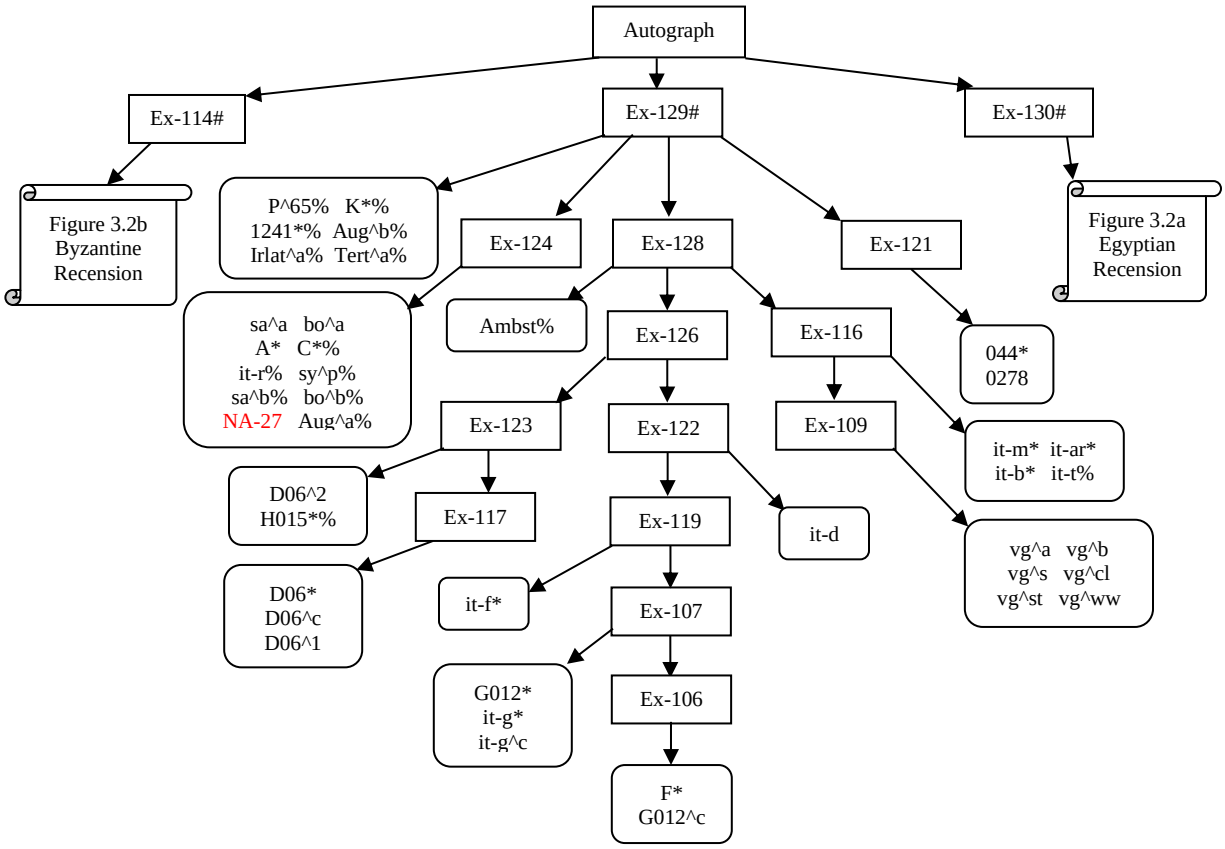


Readings of the Autographic Text

The theory expressed in the first volume of this series[4] indicates that the readings of the autographic text should be determined on the basis of the "consensus among ancient independent witnesses." The solution for 1 Thessalonians ended up with three independent recensions which were candidates for being witnesses to the text of the autograph. The guideline given in the theory recommended selecting the three most ancient recensions for use in determining the consensus; for 1 Thessalonians they are: Ex-114#, Ex-129#, and Ex-130#. The text of the autograph is presented in Appendix D.

[4] Chapter Two of *The Genealogical History of the Greek Text of the Gospel of Matthew*.

Figure 3.2
Condensed Genealogical Stemma-1 of 1 Thessalonians
The Western Recension

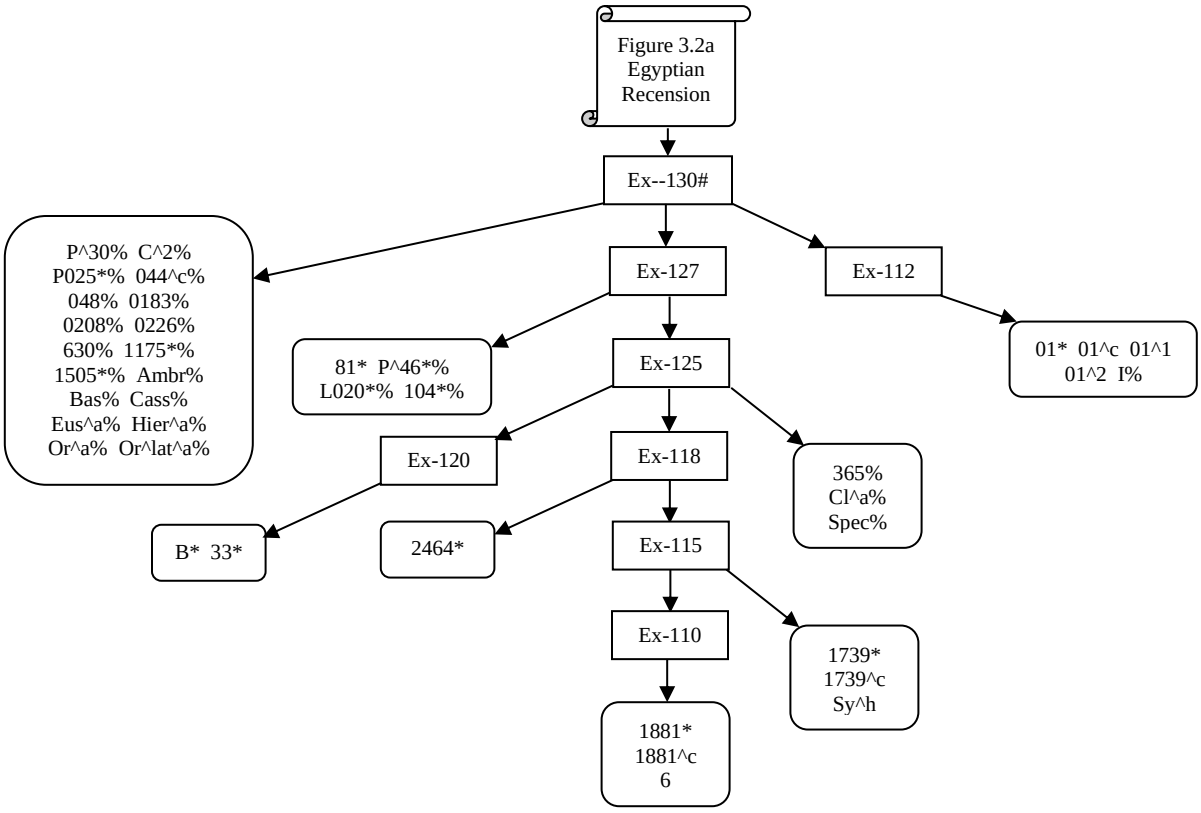


The Western Text Tradition

Figure 3.2 displays the fuller tree diagram of the genealogical history of the text of 1 Thessalonians. It displays the complete Western branch headed by Exemplar Ex-129#, but the complete branch of the Egyptian branch is displayed in Figure 3.2a, and the complete branch if the Byzantine is displayed in Figure 3.2b. Exemplar Ex-129# was the second-century recension (c. AD 150) from which the Western witnesses were derived; it has an affinity with the autograph of 97%, differing from the autograph by three variants. I refer to this branch as the Western text tradition because the Latin translations and Latin church fathers are found within its branches. It has eight generations and its date is based on that of third-generation sa^a (c. AD 250). It is interesting to note that the Egyptian translations (sa^a, sa^b%, bo^a, and bo^b%) are found in the Western text tradition.

Likewise, NA-27 and several witnesses are here that are expected to be in the Egyptian text tradition.

Figure 3.2a
The Egyptian Recension

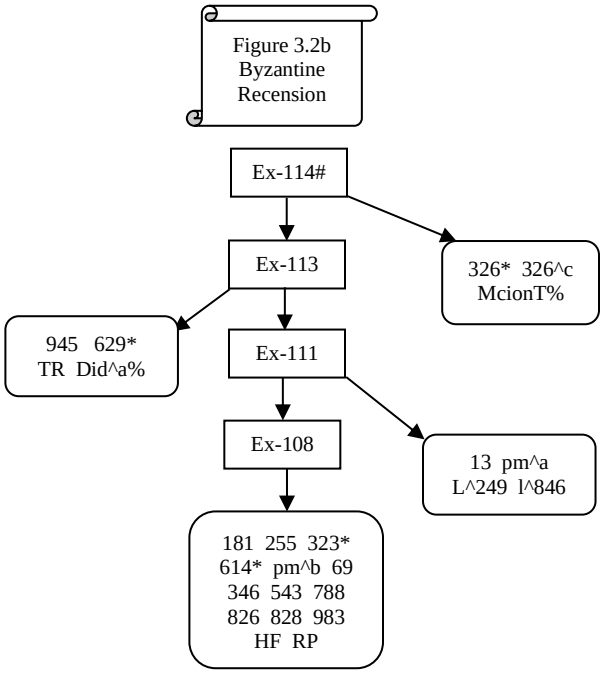


The Egyptian Text Tradition

Figure 3.2a displays the expansion of the branch of the Egyptian Recension, Exemplar Ex-130#. Exemplar Ex-130# (c. AD 95) was the first-generation recension from which the Egyptian witnesses were derived; it has an affinity with the autograph of 89%, differing from the autograph by 10 variants. It has seven generations and its date is based on that of MS Cl^a% (c. 215). I call this branch the Egyptian text tradition because MSS 01* and B* are found here although the Egyptian translations (sa^a, sa^b%, bo^a, and bo^b%) are found in the Western text tradition. The following table displays the mutual differences and quantitative affinities of the witnesses involved. For example, sa^a differs from Ex-129 by 7 readings and has an affinity with it of 91%; whereas it differs from Ex-130 by 11 readings and has an affinity with it of 86%. This explains the reason for this unexpected displacement.

	sa^a	sa^b%	bo^a	bo^b%	Ex-129	Ex-130
sa^a		92%	90%	92%	91%	86%
sa^b%	6		95%	94%	95%	86%
bo^a	8	4		92%	91%	83%
bo^b%	6	4	6		92%	84%
Ex-129	7	4	7	6		86%
Ex-130	11	10	13	12	13	

Figure 3.2b
The Byzantine Recension



The Byzantine Text Tradition

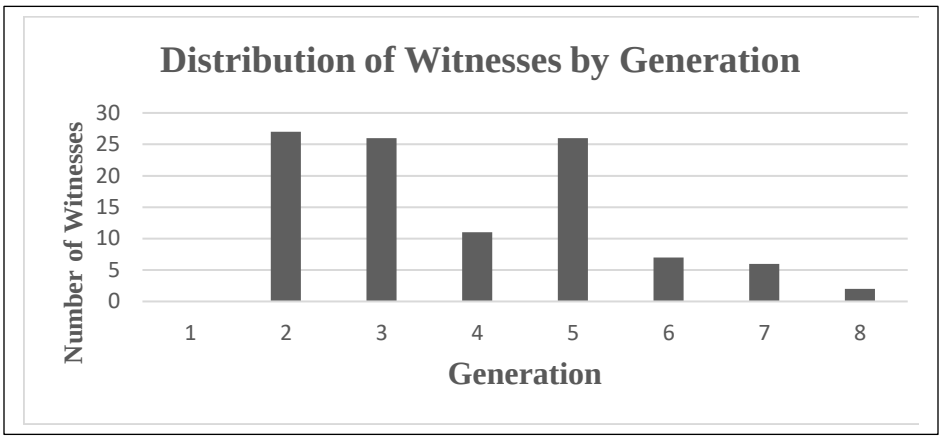
Figure 3.2b displays the branch of the Byzantine text tradition. Exemplar Ex-114# was the first-generation recension that was the ancestral text from which the Byzantine witnesses were derived. It has an affinity with the autograph of 81%, differing from the autograph by 18 variants. I refer to this branch as the Byzantine text tradition rather than Antiochan because the Syriac translations are not found among its early witnesses as expected. The branch has a depth of five generations. Its date is established by second-generation fragmentary church father Marcion (McionT% c. AD 150). TR, HF, and RP found their best fit as descendants of fourth-generation Exemplar Ex-104.

The Generations of Genealogical History

Program Lachmann-10 reconstructed the genealogical history of the text of 1 Thessalonians in eight generations of descent from the autograph. Of course, the exact number of generations cannot be known because the genealogical history before the alleged first-generation major recensions was too fuzzy for the software to accurately reconstruct. The extant witnesses are distributed throughout every generation of the genealogical history. Table 3.1 and its associated graph display the distribution of the extant witnesses of 1 Thessalonians by generation.

Table 3.1
Distribution of Extant Witnesses
By Generation

Generation	Num. of Witnesses
1	0
2	27
3	26
4	11
5	26
6	7
7	6
8	2
9	0



Mixture

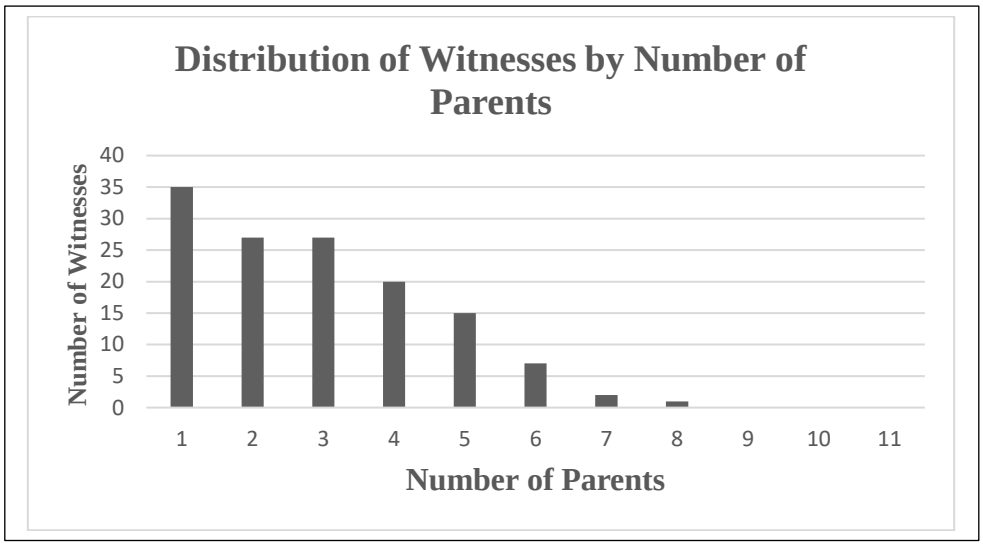
The number of parents a witness had is a measure of the mixture of its text; the more parents, the more mixture. At any place of variation, the reading of a witness may differ from that of its primary parent exemplar[5] for one of two reasons: (1) the reading is a newly initiated variant having no prior existence; or (2) the scribe selected the reading from one of the secondary exemplars he was consulting. Witnesses having only one parent experienced no mixture; every variant differing from that of the primary parent exemplar was newly initiated by the scribe either accidentally or intentionally. Table 3.2 displays the distribution of witnesses by number of parents. Those witnesses with the greatest mixture are those with the most diverse text; for example: 35 of

[5] A primary parent exemplar is the exemplar from which a witness derives its genealogical descent; secondary parent exemplars are the sources from which a witness acquires mixture. A witness has only one primary parent, but it may have any number of secondary parent exemplars.

the witnesses had only one parent, having no mixture at all; MSS D06^2 and it-f* have 7 parents. The sources of mixture are not displayed in the tree diagrams.

Table 3.2
Distribution of Witnesses
by Number of Parents

Num. of Parents	Num. of Witnesses
1	35
2	27
3	27
4	20
5	15
6	7
7	2
8	1
9	0
10	0
11	0



Primary Daughters

When an exemplar is the primary parent of one of its daughter manuscripts, then that daughter in turn is a primary descendant of the exemplar. Except for exemplars created to account for same-generation mixture (those marked with $), an exemplar has at least two primary descendants, but it may have as many as needed for grouping multiple sibling daughters. The number of primary daughters of an exemplar is a measure of how well the software was able to find groups of sibling sisters. Table 3.3 displays the distribution of primary daughters by number of exemplars. For example, 13 exemplars have only 2 primary daughters, whereas only one exemplar (Ex-108) has 12 primary daughters.

Critics of the genealogical theory protest that the genealogical trees it develops are almost exclusively binary, that is, nodes in the tree have only two branches—in other words, reconstructed exemplars have only two primary daughter descendants. Table 3.3 indicates that is mostly true for 1 Thessalonians, but it was not so for the Gospels. Nevertheless, the principle of delayed ambiguity has rendered the criticism invalid. Exemplars with no primary descendants are those created to account for same-generation mixture; they rightly have no primary descendants.

Table 3.3
Distribution of Exemplars by Number of Primary Daughters

Num. of Primary Daughters	Num. of Exemplars
2	13
3	7
4	4
5	1
12	1
Total	74

Table 3.4
Distribution of Exemplars by Number of Secondary Daughters

Num. of Secondary Daughters	Num. of Exemplars	Num. of Secondary Daughters	Num. of Exemplars
0	9	10	1
1	4	15	1
2	3	19	1
3	2	20	1
6	2	27	1
7	1	31	1
8	1	79	1
9	1	Total =	253

Secondary Daughters

When an exemplar is the source of mixture (a secondary parent) for one of its daughter descendants, then that daughter is a secondary descendant of the exemplar. An exemplar does not need to have any secondary descendants, but it may have as many as needed for resolving mixture within its associated branch. The number of secondary descendants of an exemplar is a measure of its value as a source of mixture, suggesting that scribes regarded the exemplar as having some measure of authority. Table 3.4 displays the distribution of secondary daughters by number of exemplars. For example, nine exemplars have no secondary daughters, whereas only one exemplar (Ex-132$, a virtual source of mixture) had 79 secondary daughters; one exemplar (Ex-114#, the Byzantine recension) had 27 secondary daughters; and one exemplars (Ex-130#, the Egyptian recension) had 20 secondary daughters. Obviously, the ancient scribes regarded these texts as having textual authority. The evidence indicates that there was considerable mixture among the witnesses to the text of 1 Thessalonians.

Resolution of Mixture

The optimizing procedures of the software resolve all mixture in a genealogical tree, leaving every instance of a variant accounted for either by genealogical descent, by mixture, or by

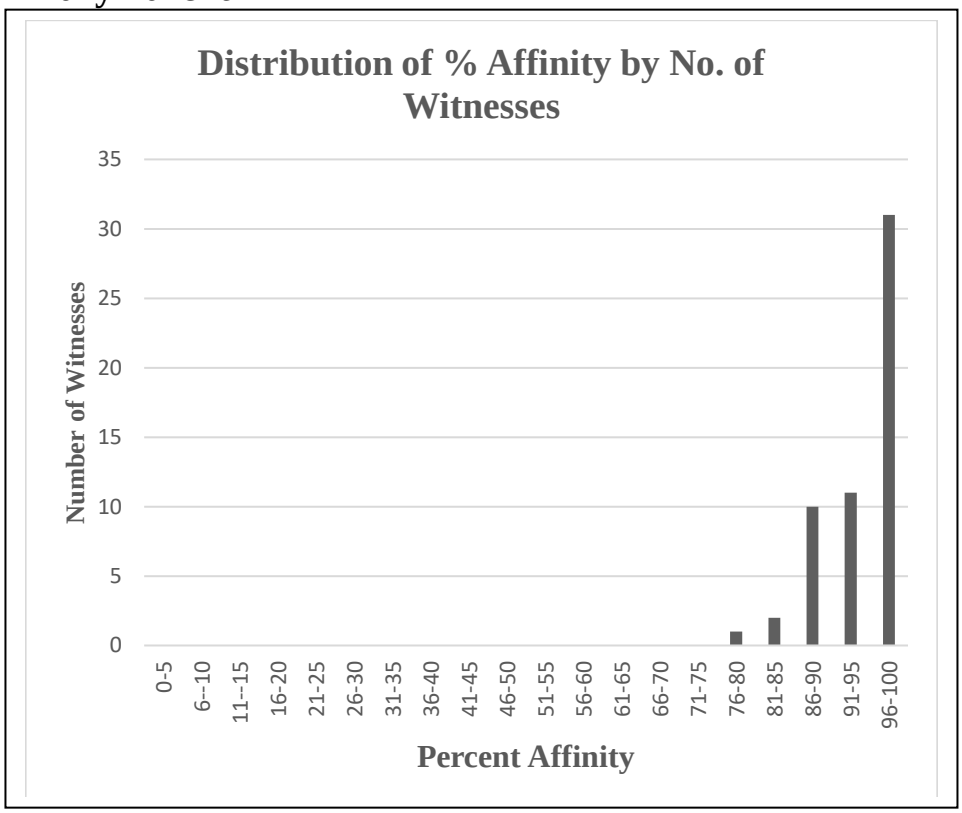
initiation. That is, the software locates the exemplar where every variant originated in the genealogical history of the witnesses.[6] This feature is treated further in Chapter Four where the genealogical history of the variants is discussed.

Distribution of Affinity

Another measure of the success of the software in reconstructing the genealogical history of the text of 1 Thessalonians is the distribution of the affinity of the witnesses to their primary parent exemplars. If this affinity is consistently high, the success may be regarded as high.

Table 3.5
Distribution of Affinity of Extant Witnesses with Primary Parent

% Affinity	No. of Witnesses
0-5	0
6-10	0
11-15	0
16-20	0
21-25	0
26-30	0
31-35	0
36-40	0
41-45	0
46-50	0
51-55	0
56-60	0
61-65	0
66-70	0
71-75	0
76-80	1
81-85	2
86-90	10
91-95	11
96-100	31
Total	55

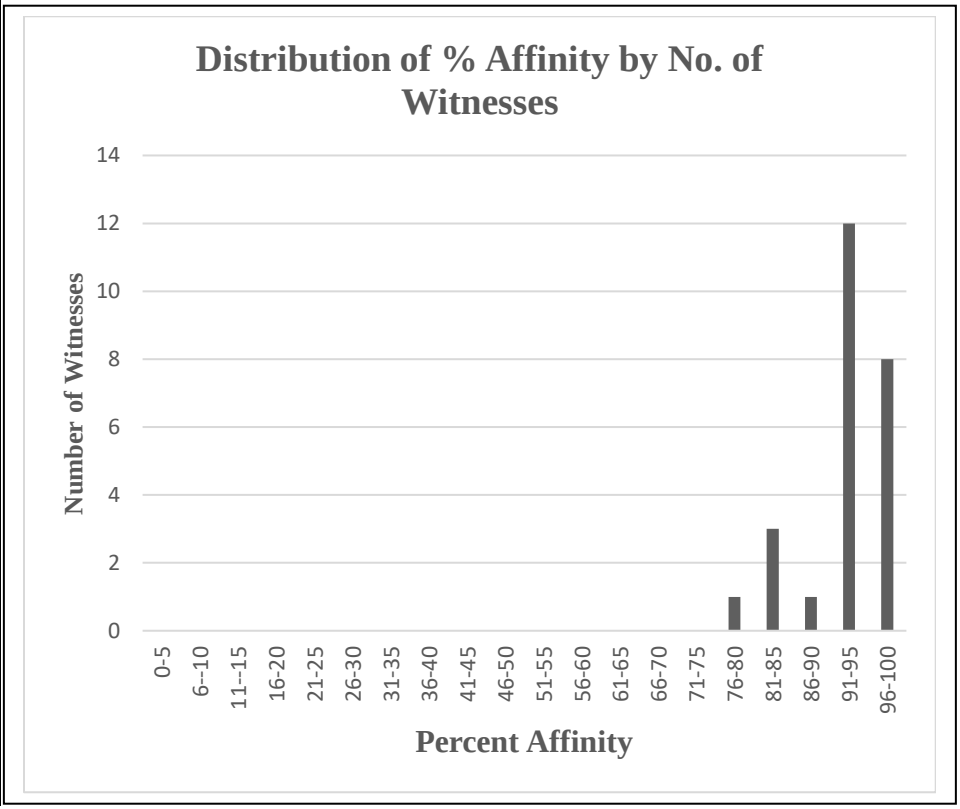


[6] While this is true for the book of 1 Thessalonians, for some of the other books the software may fail to uniquely identify the place of origin for a small percentage of variants.

Table 3.5 and its associated graph display the distribution of the affinity of the extant witnesses[7] to their corresponding primary parent exemplar. The evidence from Table 3.5 indicates that all but 13 extant witness had a strong affinity (> 90%) with their primary parent exemplar, and all but three had an affinity greater than 85%. This demonstrates that considerable close grouping exists among the extant witnesses. Table 3.6 and its associated graph display the distribution of the affinity of the reconstructed exemplars to their corresponding primary parent exemplar, not including those functioning only to resolve same-generation mixture.[8]

Table 3.6
Distribution of Affinity of Exemplars with Primary Parent

% Affinity	No. of Witnesses
0-5	0
6-10	0
11-15	0
16-20	0
21-25	0
26-30	0
31-35	0
36-40	0
41-45	0
46-50	0
51-55	0
56-60	0
61-65	0
66-70	0
71-75	0
76-80	1
81-85	3
86-90	1
91-95	12
96-100	8
Total	25



[7] Witnesses with less than 80% content are excluded because they do not contribute to the reconstruction of the genealogical history but are attached at the most appropriate place after the tree is complete.

[8] Such exemplars do not contribute to the reconstruction of the tree diagram of the genealogical history of the witnesses, their affinity with their parent exemplar having no significance to the reconstruction process.

The evidence from Table 3.6 indicates that 20 (80%) of the 25 reconstructed exemplars[9] have a strong affinity (> 90%) with their primary parent exemplar, and all but one have an affinity greater than 80% with their parent. The presence of weak affinities is troubling because it questions the reality of any actual genealogical relationships. But the corresponding presence of sizeable sibling genes confirms that the given witness has a common ancestry with its alleged sisters, even though the relationship may be one of distant cousins; whatever the actual relationship may have been, within the collection of witnesses the relationship is the closest possible.

Global Inheritance Persistence

Another measure of the success of the software in reconstructing the genealogical history of the text of 1 Thessalonians is the persistence of the variants once they are initiated in the stemma of genealogical history. Ideally, once a variant is initiated, it will persist in all the descendants of the exemplar in which it was initiated. Table 3.7 presents the global statistics for inheritance persistence for the reconstructed stemma of 1 Thessalonians. The information is the accumulated sum of every witness' hereditary persistence. For each witness, the total number of variants it could inherit from all its ancestors was counted, also the number of those inheritable variants it actually inherited.[10]

Table 3.7
Global Inheritance Persistence

Global Total Number of Inheritable Variants:[11]	2,327
Global Number of Actually Inherited Variants:[12]	1,931
Global Number of Changed Variants:[13]	14
Global Number of Corrected Variants:[14]	382

[9] The exemplars constructed just to account for same-generation mixture were not included in the study because they do not contribute to the construction of the genealogical tree.

[10] The hereditary persistence of a witness is the ratio of the number of inheritable variants to the number of actually inherited ones. The number of inheritable variants of a witness is the sum of the number of new variants initiated in all of its ancestor exemplars.

[11] An inheritable variant of a witness is one of its readings that was initiated in one of its ancestral exemplars.

[12] An inherited variant of a witness is one of its inheritable readings that persisted unaltered from its point of initiation through its intervening ancestors to the given witness itself.

[13] An inheritable variant of a witness is counted as changed if it was altered in an intervening ancestral exemplar, disrupting its hereditary persistence.

[14] An inheritable variant of a witness is counted as corrected if after being altered it is restored again to its initial reading.

This information indicates that for the 2,327 variants (the inheritable ones) initiated in all the ancestor exemplars in the stemma, 1,931 were persistent, being actually inherited by all their respective descendants (82.98%), and 14 were changed (0.60%) somewhere in intervening ancestors. Interestingly, 382 of them (16.41%) were changed and corrected back to the reading of the exemplar in which the variant originated. This information indicates the solution may be regarded as reasonably successful. The persistence of variant readings may be observed in the stemmas that trace the genealogical history of specific variants found in Chapter four.

Date of the Autograph

The date of the autograph and that of all other reconstructed exemplars are relative, not exact, being created by the date algorithm of the software which states that a parent exemplar is 50 years older than that of its oldest sibling daughter. When the dates diminish to below AD 150, the generation gap is reduced to 20 years, giving more room for activity in the first half of the second century and earlier. When the dates diminish below AD 100, the generation gap is reduced to five years. When the date diminishes below AD 50, the generation gap is reduced to one year. The date of the autograph (c. AD 90) is traced down through the Byzantine recension to the second-generation church father Clement (Cl^a% c. AD 215) through the following exemplars:

Autograph[0.00]<0>{AD 90}/0/0/0
|-Ex-130#[0.89]<1>{AD 95}/10/10/2
|-Ex-127[0.96]<2>{AD 115}/4/10/3
|-Ex-125[0.92]<3>{AD 165}/7/4/3
|-Cl^a%[0.73]<4>{AD 215}/3/7/3

The witness of Clement is weak, having readings in only 11 places of variation, but having 73% agreement with the autograph. So, the date of the autograph is acceptable based on that witness.

Summary

Beginning with 105 extant witnesses, 63 of which were 80% or more complete, Lachmann-10 reconstructed 26 exemplars to account for the genealogical relationships among them. It constructed a stemma that mapped the genealogical history of the text of 1 Thessalonians consisting of three main branches corresponding to the three traditional text types. Table 3.8 summarizes the following data for each branch:

(1) The name of the first-generation recension
(2) The date of the recension
(3) The date of the latest witness in the branch, a measure of the text tradition's longevity
(4) The affinity of the recension with the autographic text
(5) The number of variants the recension differs from the autographic text
(6) The number of exemplars created for the branch
(7) The number of generations occurring in the branch

Table 3.8
Summary of Data

	Egyptian	Byzantine	Western
Recension	Ex-130#	Ex-114#	Ex-129#
Date	AD 95	AD 100	AD 150
Latest	AD 1400	AD 1450	AD 1150
Affinity	89%	81%	97%
Difference	10	18	3
Exemplars	8	4	13
Generations	7	5	8

The Egyptian text tradition has the earliest origin (AD 95), the second longest duration (AD 95 to 1400), and the second best affinity with the autograph (89%).

Conclusions

The software does indeed reconstruct a genealogical history of the manuscripts of the Book of 1 Thessalonians, and of the other books of the New Testament as well. However, the results are not what was anticipated, based on earlier experiments with smaller books, smaller databases, and less sophisticated programs. I anticipated that the commonly accepted text traditions would emerge as independent witnesses to the autograph. Those text traditions did emerge, but they turned out to be not exactly Western, Alexandrian, Caesarean, and Byzantine, but rather Western, Egyptian, and Byzantine.

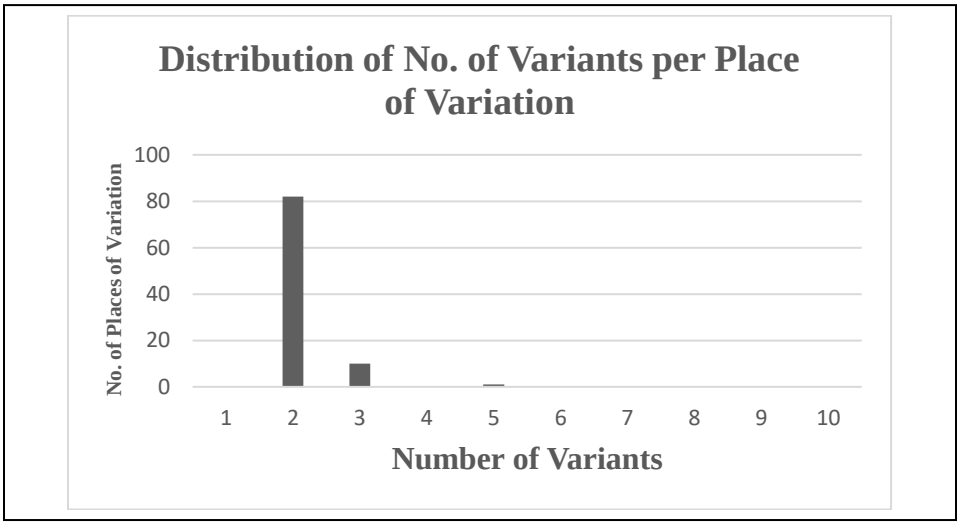
This concludes the discussion of the genealogical history of the witnesses to 1 Thessalonians. While the reconstruction of the genealogical history of witnesses depends on the quantitative affinity (consensus), genetic affinity (sibling genes), and the date of the witnesses, the genealogical history of variant readings depends on the consensus and inheritance of variants. The history of the variant readings of the text of 1 Thessalonians is discussed in Chapter Four.

CHAPTER 4
THE HISTORY OF THE TEXTUAL VARIANTS IN 1 THESSALONIANS

Chapter Three presents the genealogical history of the manuscripts[1] of the Greek text of the Book of 1 Thessalonians. That history is necessary before the genealogical history of an individual variant may be intelligently discussed, because the history of a textual variant is totally dependent upon the history of the manuscripts in which it occurs. The NA-27 Greek New Testament records 93 places of textual variation in the book of 1 Thessalonians and 199 variant readings. This averages out to a variableness index of 2.14 variants per place of variation—a relatively low value. Table 4.1 and its associated graph display the distribution of the number of variants per place of variation. It indicates that at 82 places of variation there were only two variant readings, at only one place there was five (3:2,1).

Table 4.1
Distribution of Number of Variants per Place of Variation

Number of variants	Number of Places of Variation
1	0
2	82
3	10
4	0
5	1
6	0
7	0
8	0
9	0
10	0
Total=	199



[1] Again, the term *manuscript* is used in its broader sense to include manuscripts, translations, quotations from church fathers, and reconstructed exemplars.

Initially the number 199 seems large when considering textual variations in a book of the Bible, but this number must be considered with respect to the total number of places where variation could occur. If the number of words in the Greek text of 1 Thessalonians (c. 1,492) is regarded as the number of places where variation could occur, and each variation is regarded as the equivalent of one word, then the text of 1 Thessalonians is 93% pure[2] before variations are even considered. Thus, variation occurs in only 7% of the text. In that small portion of the text 199 variants are recorded, but 93 of them are original readings, so only 106 are real variants. While this still seems like a large number, the genealogical software clearly identified all of them as non-original.

Types of Variants

Four basic types of textual variations occur in the text of 1 Thessalonians: (1) omissions, (2) alterations, (3) transpositions, and (4) additions. Table 4.2 lists the distribution of these types of variants in the 93 places of variation in the autographic text of the Book of 1 Thessalonians, and Table 4.3 lists their distribution with respect to all variations.

Table 4.2
Distribution of Variants by Type

Variation type	Number of Variants
omit a word	19
omit a phrase	4
Alternate word	45
Alternate words	5
Transposed words	3
Added word or phrase	17
Total	93

Table 4.3
Distribution of All Variants by Type

Variation Type	Number of Variants
omit a word	38
omit a phrase	8
Alternate word	96
Alternate words	16
Transposed words	6
Added word or phrase	35
Total	199

[2] ((1,492 – 93) ÷ 1,492) x 100 = 93.76%.

Determining Exemplar Readings

Whenever the genealogical software creates a new exemplar as the parent of a group of sibling sister witnesses, at each place of variation, the reading of the exemplar is decided on the basis of four ordered rules:

(1) Majority consensus among all the immediate sibling children;
(2) if no majority, then postpone the decision until a sibling emerges for the exemplar currently being reconstructed, that sibling will have the inherited reading;[3]
(3) if, in the case of deciding the readings of the autograph, majority consensus fails, then accept the first variant (the NA-27 reading) if it is an option;
(4) if the first variant is not an option, then by default arbitrarily select the smallest variant number that is an option;[4]
(5) if witnesses are of different languages, then select the Greek reading.

Table 4.4 lists the number of times each of the above rules was used in the process of constructing the genealogical history of the text of 1 Thessalonians.

Table 4.4
Frequency of Exemplar Reading Rules

(1) by greatest probability	2,174
(2) by deferred ambiguity	131
(4) by default to NA-27	32
(5) by arbitrary choice	0
(6) by language deference	50
Total	2,387

The evidence indicates that the vast majority of exemplar readings (91.19%) were determined by "consensus among independent witnesses," and nearly all the remainder (5.48%) were determined by deferred ambiguity, while only 1.34% were deferred to the NA-27 reading, and 2.09% were determined by language deference.

[3] I call this practice *deferred ambiguity*. Since sibling witnesses rarely have scribal errors at the same place of variation, where the reading of one sibling is ambiguous—that is, it is uncertain which of two readings is the inherited reading and which is a newly initiated error—the other siblings will have the inherited reading..

[4] Next to the first variant—the NA-27 choice—the reading with the smaller variant number is usually supported by more witnesses than those with larger variant numbers. While this option is purely arbitrary, it turns out to be rarely significant for determining the readings of the autograph. For determining the readings of the autograph, the algorithm treats the exemplars of the last three branches to be constructed as siblings constituting the ancient independent witnesses.

Autographic Readings

The readings of the autographic text of 1 Thessalonians were determined on the basis of consensus among the three most ancient independent witnesses. For the Book of 1 Thessalonians, the exemplars of the three most ancient independent recensions were: (1) Exemplar Ex-129#, the recension from which the Western text tradition was derived; (2) Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived; and (3) Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived. Appendix D lists each of the 93 readings of the autograph together with its place of variation, the chapter and verse where it occurs, the reading of the text at that place, and the probability that the reading is original. Those readings lacking consensus were determined by default to the decision of the NA-27 editors' evaluation of internal evidence if that reading was among the available alternatives; otherwise, the next lowest variant number was selected by arbitrary choice. Table 4.5 lists the number of times each of the above rules was used in the process of determining the autographic readings of the text of 1 Thessalonians. The evidence indicates that 100% of the readings were determined by "consensus among ancient independent witnesses."

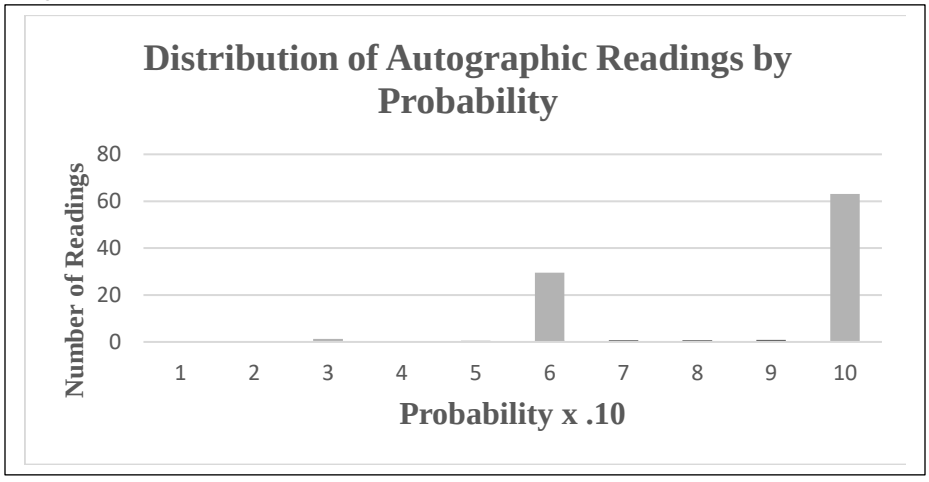
Table 4.5
Frequency of Exemplar Reading Rules

Number of Autographic variants decided by greatest probability	93	100%
Number of Autographic variants decided by Choice of NA27	0	0%
Number of Autographic variants decided by arbitrary choice	0	0%
Number of Autographic variants decided by Language deference	0	0%
Total	93	

Table 4.6 and its associated graph displays the distribution of the probability of the reconstructed autographic readings. Of the 93 readings, 63 had a probability of 1.0 (100%), 29 had a probability of 0.67 (67%), and one had a probability of 0.33 (33%).

Table 4.6
Distribution of Autographic Readings by Probability

Probability	Number of Readings
0.1	0
0.2	0
0.33	1
0.4	0
0.5	0
0.67	29
0.7	0
0.8	0
0.9	0
1.00	63



Agreement with NA-27

In the database used in this work, the first variant at any place of variation is the reading of the NA-27 text. The second and subsequent variants are the alternate readings listed in the database. Table 4.7 lists how often the various alternate readings were found to be original. The evidence indicates that the autographic text reconstructed by the genealogical software agrees with the text of NA-27 83 times or 89.25% of the time and differs from the NA-27 text 10 times or 10.75% of the time. Appendix E lists the 10 places where the Lachmann-10 text differs from that of NA-27.

Table 4.7
Frequency of Variants

Variant 1	83
Variant 2	9
Variant 3	1
Variant 4	0
Variant 5	0
Variant 6	0
Total	93

The Origin of the Variants

The software identifies the place of origin of every variant in the genealogical tree, accounting for every instance of a variant as being the result of genealogical descent, mixture, or

initiation—that is, the software finds the one and only exemplar or extant witness in the genealogical history where each variant originated.[5] Often, after the first initiation of a reading, it may have been introduced again in a later exemplar by means of mixture.

Exemplars Ex-132$ through Ex-135$ are children of the Autograph created by the software as sources for resolving same-generation mixture between the branches headed by the first-generation recensions, that is, for non-autographic readings that occur in more than one primary branch of the genealogical tree. These exemplars serve as virtual exemplars lost in the unrecoverable genealogical history between the Autograph and the assumed first-generation recensions. Of the 106 non-autographic variants, 93 are listed as originating in one of these virtual exemplars. Two possibilities exist for each of these variants: either it really originated only once in the earliest decades of unrecoverable history, or it originated independently in two or more major branches of the tree diagram of genealogical history; the latter case can be true for commonly occurring scribal errors, but not for the uncommon ones. Variants of the first kind are weakly distributed among the branches of the first-generation recensions and are of little genealogical significance individually; their distribution among the three most ancient recensions is weaker than that of their corresponding autographic reading.

Egyptian Recension

First generation Exemplar Ex-130# was the ancestral forefather of the Egyptian text tradition. This recension differs from the autograph by 10 secondary variants[6] among which it uniquely originated the following 4 variants peculiar to this entire text tradition:

29.1	2:13,1.1	°Λαι
60.2	4:11,1.2	° ομιτ
72.2	5:3,1.2	δϵ
86.2	5:13,3.2	αυτοις

[5] The place a variant reading was initially introduced in genealogical history is determined by locating the witness containing the variant reading where the reading differs from that of its parent exemplar and the reading is not accounted for by mixture. Mixture fails when the reading does not occur in any witness in preceding generations.

[6] In this and other lists of variants herein, an exemplar enclosed in square brackets [] is the source of mixture for the associated variant. Variants are listed only by their reference: 1:2,1.1[Ex-134$]; 1:5,4.2[Ex-134$]; 2:13,1.1; 3:13,3.1[Ex-134$]; 4:8,2.1[Ex-134$]; 4:11,1.2; 53,1.2; 5:6,1.1[Ex-134$]; 5:13,3.2; 5:15,1.2[Ex-134$]; Count = 10.

Western Recension

First-generation Exemplar Ex-129# was the Western recension, being the text from which most of the Latin translations were made. It differs from the autographic text by 3 secondary variants,[7] among which it uniquely originated the following variant peculiar to this entire text tradition:

90.2	5:25,1.2	° ομιτ

Byzantine Recension

Exemplar Ex-114# was the Byzantine recension. It differs from the autographic text by 18 secondary variants,[8] among which it uniquely originated the following 9 variants peculiar to this entire text tradition:

2.2	1:1,2.2	απο θεου πατρος ημων και κυριου Ιησου Χριστου
4.2	1:4,1.2	° ομιτ
16.2	1:10,3.2	απο
24.2	2:8,4.2	γεγενησθε
28.2	2:12,2.2	καλεσαντος
50.2	4:1,2.2	° ομιτ
71.2	5:2,1.2	η
72.3	5:3,1.3	γαρ
93.2	5:28,1.2	αμην

Tracing Variant History

For various reasons, it may be of interest to trace the history of the genealogical heritage of the alternate readings at particular places of variation. For each variant at the desired place, one may want to see where it originated in genealogical history and how it was subsequently distributed by genetic inheritance. Upon request, software program Lachmann-10 displays the genealogical history of the variants at any selected place of variation. It constructs the historical tree diagram (like the one in Appendix C) and displays on the monitor screen the generation and index number of the variant contained in each and every witness. The following section presents typical examples of possible studies of interest, using the tree diagram displayed in Figure 3.1 in Chapter Three.

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[7] 2:7,1.1[Ex-134$]; 4:9,1.2[Ex-134$]; 5:25,1.2; Count = 3.

[8] 1:1,2.2; 1:4,1.2; 1:8,2.2[Ex-134$]; 1:10,3.2; 2:5,1.2[Ex-134$]; 2:8,4.2; 2:12,2.2; 2:13,2.2[Ex-134$]; 2:15,1.2[Ex-134$]; 3:2,1.4[Ex-134$]; 3:2,3.2[Ex-134$]; 3:9,2.2[Ex-134$]; 4:1,2.2; 5:2,1.2; 5:3,1.3; 5:13,1.2[Ex-134$]; 5:27,2.2[Ex-134$]; 5:28,1.2; Count = 18.

Colors are used to mark the genealogical descent of the alternate readings: green marks the genealogical descent of the autographic reading, and other colors mark that of the alternate readings there.

Variants of Textual Interest

The genealogical history of some variants is more interesting than that of others because of their significance for translation. For example, significant words are missing in some witnesses (2:16,1; 4:1,3). Also some places of variation have multiple options widely distributed among the witnesses (3:2,1); some autographic readings differ from the text of NA-27, and lack superior consensus. The genealogical history may help to decide which option is more likely original.

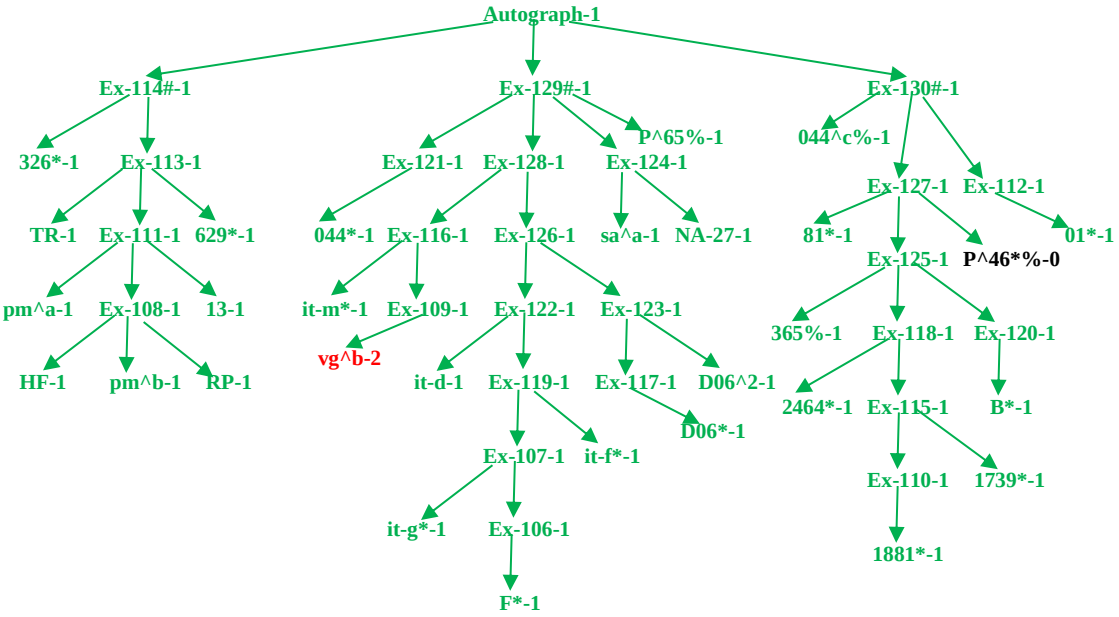
Missing Words in 2:16,1

1 Thessalonians 2:16 reads: "forbidding us to speak to the Gentiles that they may be saved, so as always to fill up *the measure of* their sins; but wrath has come upon them to the uttermost." Some witnesses lack the final sentence. The variants are:

(1) εφθασεν δε ἐπ' αὐτους η ὀργη εἰς τελος—wrath has come upon them to the uttermost
(2) ομιτ—omit

Figure 4.1 displays the distribution of the variants throughout genealogical history.

Figure 4.1
Distribution of 2:16,1



Variant 1 (wrath has come upon them to the uttermost) has the consensus of all three first-generation recensions: Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived, and Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived; it was selected as the autographic reading on this basis with a probability of 100%. It has the support of all the witnesses in all three text traditions except for MS vg^b, one of the Latin Vulgate witnesses. It has the greatest antiquity,[9] the broadest distribution,[10] and good persistence.

Variant 2 (omit the sentence) occurs only in MS vg^b, one of the Latin Vulgate witnesses. It has no possibility of being the autographic reading.

Missing Words in 4:1,3

1 Thessalonians 4:1 reads: "Finally then, brethren, we urge and exhort in the Lord Jesus that you should abound more and more, just as you received from us how you ought to walk and to please God." Some witnesses have the phrase "as also you walk" and some do not. The variants are:

(1) καθως και περιπατειτε—as also you walk

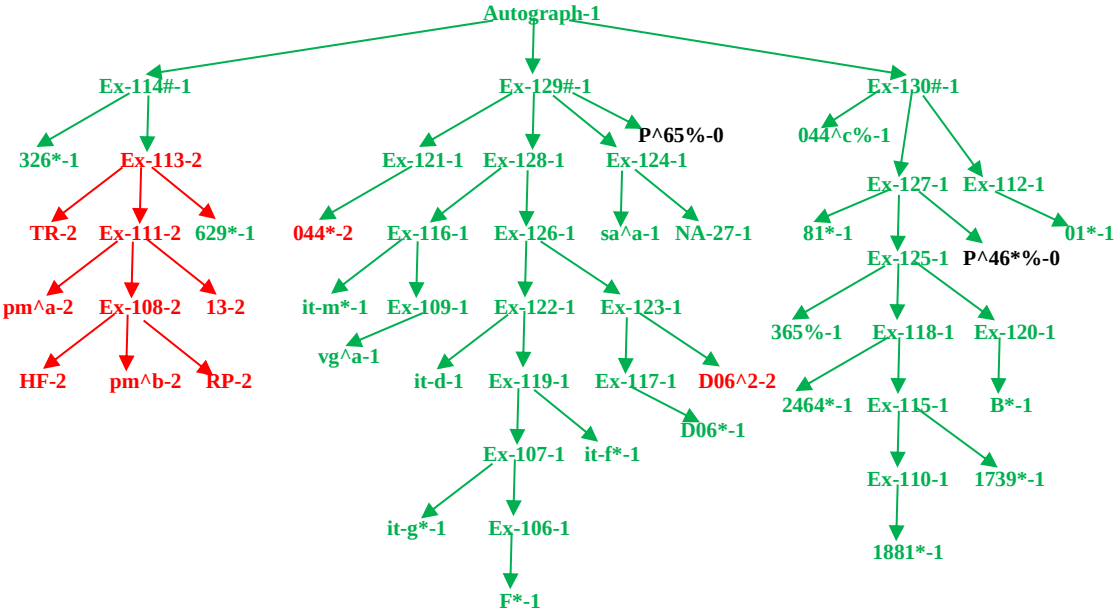
(2) omit—omit

Figure 4.2 displays the distribution of the variants throughout genealogical history. Variant 1 (as also you walk) has the consensus of all three of the first-generation recensions: Exemplar Ex-129#, the source of the Western text tradition, Exemplar Ex-130#, the source of the Egyptian text tradition, and Exemplar Ex-114#, the source of the Byzantine text tradition. It was selected as the autographic reading on this basis with a probability of 1.00 (100%). It has the support of all the witnesses in the Western text tradition except MSS D06^2, 044*, and sy^p% (not shown); also all the witnesses of the Egyptian tradition. It also has the support of first-generation witnesses of the Byzantine text tradition, including MS 629*. It has the greatest antiquity, broadest distribution, and excellent persistence.

[9] Antiquity is the characteristic of a reading being older than the witness in which it occurs. See the glossary of terms.

[10] Distribution is the characteristic of a reading occurring in more than one text tradition. An original reading occurs in more than one first-generation exemplar. See the glossary of terms.

Figure 4.2
Distribution of 4:1,3



Variant 2 (omit the clause) was first initiated in second-generation Exemplar Ex-113 in the Byzantine text tradition. Afterward it persisted in that tradition throughout its genealogical history except for MS 629*. It also occurs independently in MSS D06^2, 044*, and sy^% (not shown). It lacks antiquity and distribution.

Multiple Variants in 3:2,1

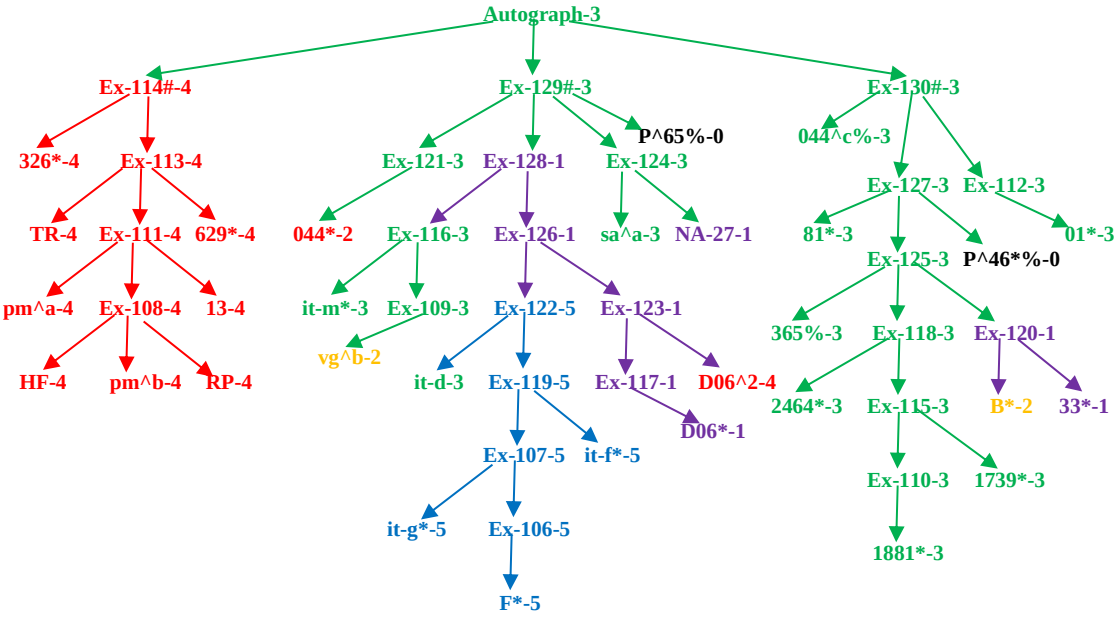
1 Thessalonians 3:2 reads: “and sent Timothy, our brother and minister of God, and our fellow laborer in the gospel of Christ, to establish you and encourage you concerning your faith.” The words of the phrase “and minister of God” have five different ordered arrangements among the various witnesses. They are:

(1) ʽκαι συνεργον του θεου—and fellow worker of God
(2) ʽκαι συνεργον—and fellow worker
(3) και διακονον του θεου—and minister of God
(4) και διακονον του θεου και συνεργον ημων—and a minister of God and our fellow worker
(5) διακονον και συνεργον του θεου—minister and fellow worker of God

Figure 4.3 displays the genealogical distribution of these variants. This is an instance where the autographic reading selected by Lachmann-10 differs from that of NA-27. Variant 3 (and minister of God) has the consensus of two of the first-generation recensions: Exemplar Ex-130#, the

recension from which the Egyptian text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived. it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Egyptian text tradition except those in the sub-branch headed by fourth-generation Exemplar Ex-120. It has the support of the first- and second-generation witnesses of the Western text tradition except those in the sub-branch headed by second-generation Exemplar Ex-128. It also has the support of the witnesses in the sub-branch headed by third-generation Exemplar Ex-116 and MSS 629* and it-d. It has the greatest antiquity, the broadest distribution.

Figure 4.3
Distribution of 3:2,1



Variant 1 (and fellow worker of God) was first initiated in second-generation Exemplar Ex-128 of the Western text tradition, after which it persisted in the history of that branch except for the witnesses in the sub-branch headed by third-generation Exemplar Ex-116. It was also initiated by mixture into the Egyptian text tradition in fourth-generation Exemplar Ex-120. It also occurs by mixture in MSS I% and it-b* (not shown). Although it was the choice of the NA-27 editors, it lacks antiquity and significant distribution.

Variant 4 (and a minister of God and our fellow worker) was first initiated in first-generation Exemplar Ex-114# of the Byzantine text tradition, after which it persisted in the history of that branch. It occurs by mixture in MSS D06^2 and sy^p (not shown). It lacks antiquity and significant distribution.

Variant 5 (minister and fellow worker of God) was first initiated in fourth-generation Exemplar Ex-122 of the Western text tradition, after which it persisted in the history of that branch. Variant 2 (and fellow worker) occurs only in genealogically unrelated MSS B* and vg^b. These readings have no genealogical possibility of being original.

Ambiguity at 5:3,1

Of the 93 places of variation in the Book of 1 Thessalonians, Lachmann-10 found no autographic readings with a probability of 0.5 (50%). However, one instance occurs in 5:3,1 where the probability is 0.33 (33%). 1 Thessalonians 5:3 reads: "For when they say, 'Peace and safety!' then sudden destruction comes upon them, as labor pains upon a pregnant woman. And they shall not escape." There are three variant readings here for the word translated "for." They are:

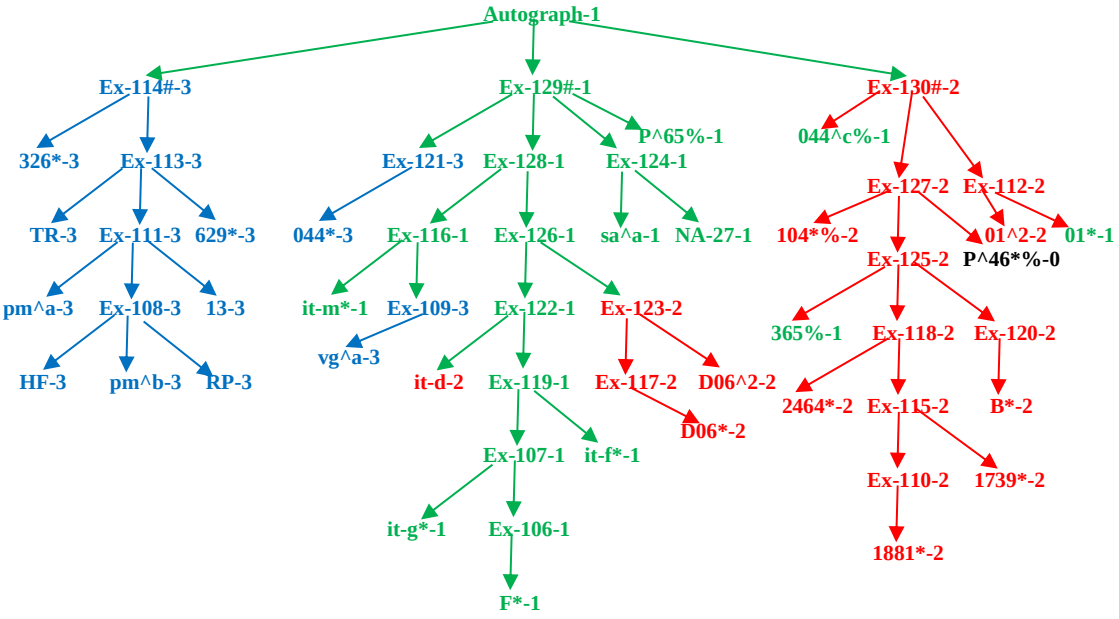
(1) ομιτ: omit

(2) δε: but

(3) γαρ: for

Figure 4.4 displays the distribution of these variants throughout genealogical history.

Figure 4.4
Distribution of 5:3,1



In this case no consensus exists among the first-generation exemplars. Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived, supports variant 2; Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, supports variant 3; and Exemplar Ex-129#, the recension from which the Western text tradition was derived, supports

variant 1. In the case of such ambiguity, Lachmann-10 assigns the reading of NA-27 (variant 1) to the autograph by default, with a probability of 33%, on the assumption that it has the best internal evidence in the judgment of the NA-27 editors.

Variant 1 has the support of all the witnesses in the Western text tradition headed by Exemplar Ex-129#, except for the witnesses in sub-branches headed by second-generation Exemplar Ex-121, fourth-generation Exemplar Ex-109, and fourth-generation Exemplar Ex-123, also except MS it-d. It occurs also independently in MSS P^30%, 01*, L020*%, 044*, 33*, 365%, and 630%.

Variant 2 has the support of all the witnesses in the Egyptian text tradition headed by Exemplar Ex-130#, except for MSS P^30%, 01*, L020*%, 044*, 33*, 365%, and 630%. It occurs by mixture in the sub-branch of the Western text tradition headed by fourth-generation Exemplar Ex-123. It occurs independently as well in MS it-d.

Variant 3 has the support of all the witnesses in the Byzantine text tradition headed by Exemplar Ex-114# It occurs also in the witnesses in the sub-branches of the Western text tradition headed by second-generation Exemplar Ex-121 and fourth-generation Exemplar Ex-109. It occurs independently in MS it-ar (not shown). While the genealogical evidence determines the autographic reading with only 33% probability, the alternatives affect translation rather insignificantly.

Variants of Theological Interest

Although most textual variations have little or no practical theological significance, a number are found in theological discussions. Bart D. Ehrman argued that the earliest form of the Greek New Testament was less "orthodox" than the canonical form that emerged at the end of the "proto-orthodox" debates that culminated in the dominance of the "orthodox" parties in the fourth century. However, he provided no passages in 1 Thessalonians to support his thesis.

Other Variants of Theological Interest

The following is a discussion of some other passages in 1 Thessalonians where doctrinal issues may seem significant to some readers.

Omit Amen 3:13,3

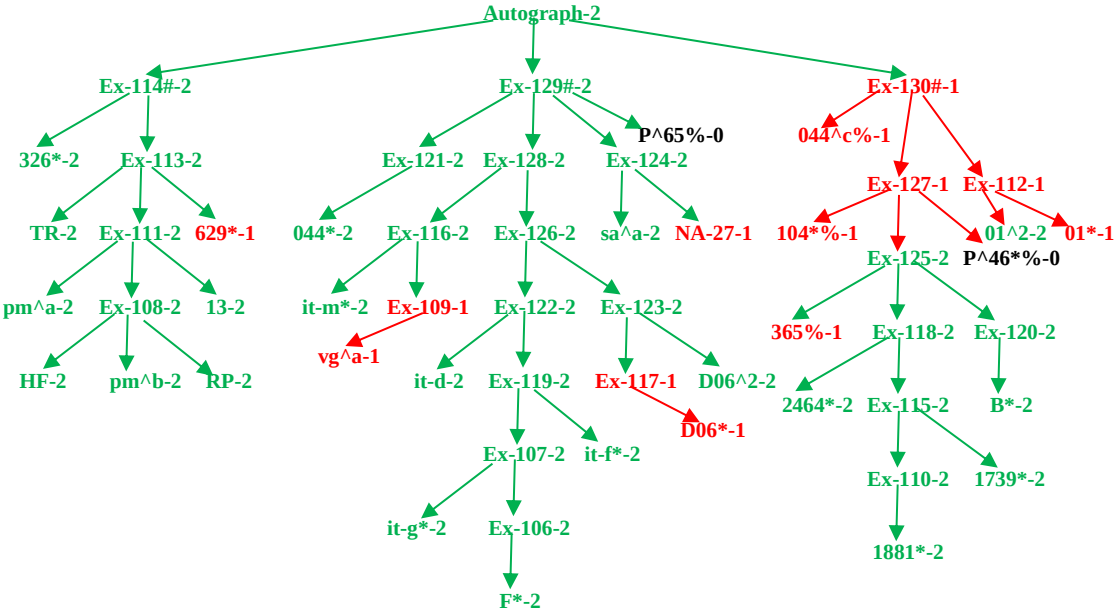
1 Thessalonians 3:13 reads: "so that He may establish your hearts blameless in holiness before our God and Father at the coming of our Lord Jesus Christ with all His saints." Some witnesses have the word "Amen" at the end of the verse, and some do not. The variants are:

(1) ἀμην—Amen

(2) ομιτ—omit

Figure 4.5 displays the distribution of the variants throughout genealogical history.

Figure 4.5
Distribution of 3:13,3



This is another instance where the Lachmann-10 autographic reading differs from that of NA-27. Variant 2 (omit "Amen") has the consensus of two of the three first-generation recensions: Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Byzantine text tradition except MS 629*. It has the support of all the witnesses in the Western text tradition except for those in the sub-branches headed by fourth-generation Exemplar Ex-109, and fifth-generation Exemplar Ex-117. It also has the support of the witnesses in the branch of the Egyptian text tradition headed by third-generation Exemplar Ex-125. It also has the support of MSS 01^2 and vg^b (not shown). It has the greatest antiquity, the broadest distribution, and good persistence.

Variant 1 (Amen) was first initiated in first-generation recension Exemplar Ex-130#, the source of the Egyptian text tradition, after which it persisted for two generations. It was then corrected to variant 2 in third-generation Exemplar Ex-125, after which variant 2 persisted throughout the remaining history of that branch. It also occurs in MSS 01^2 and vg^b (not shown). This variant

lacks antiquity, sufficient distribution, and persistence. Although "Amen" is in the text of NA-27 in brackets, most modern translations do not contain it.

Us or You 4:8,3

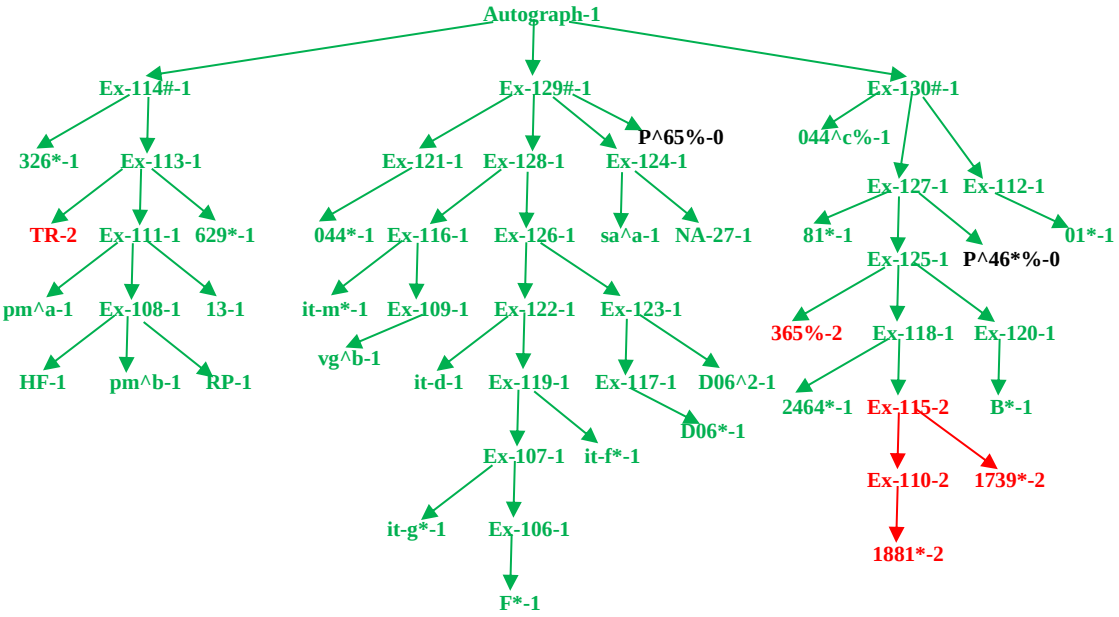
1 Thessalonians 4:8 reads: "Therefore he who rejects *this* does not reject man, but God, who has also given us His Holy Spirit." In this passage some witnesses contain the word "us" and some have the word "you." There are two variant readings here:

(1) υμας—you

(2) ημας—us

Figure 4.6 displays the distribution of these variants throughout genealogical history.

Figure 4.6
Distribution of 4:8,3



Variant 1 (you) has the consensus of all three first-generation recensions: Exemplar Ex-130#, the recension from which the Egyptian text was derived, Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived; so, it was assigned to the autograph, with a probability of 1.00 (100%). This variant is supported by all the witnesses in the Byzantine text tradition, except for the TR, the text underlying the King James Version, which stands alone against all its siblings. It is also supported by all the witnesses in the Western text tradition except for MSS it-ar*, it-t%, it-f*, and vg^cl (not shown); in addition, it is supported all the witnesses in the Egyptian text tradition except for those in the sub-branch headed by fifth-generation Exemplar Ex-115, and

MSS 365% 1505%, and Spec% (some not shown). It has the greatest antiquity, distribution, and distribution.

Variant 2 (us) is supported by the witnesses in the sub-branch of the Egyptian text tradition headed by fifth-generation Exemplar Ex-115; in addition, it is supported independently by MSS A*, 365%, 1505*%, vg^cl, it-ar*, it-f*, it-t%, Ambr%, and Spec% (some not shown). The genealogical evidence indicates that the word *us* is not original. It lacks antiquity and distribution.

One's Own 4:11,1

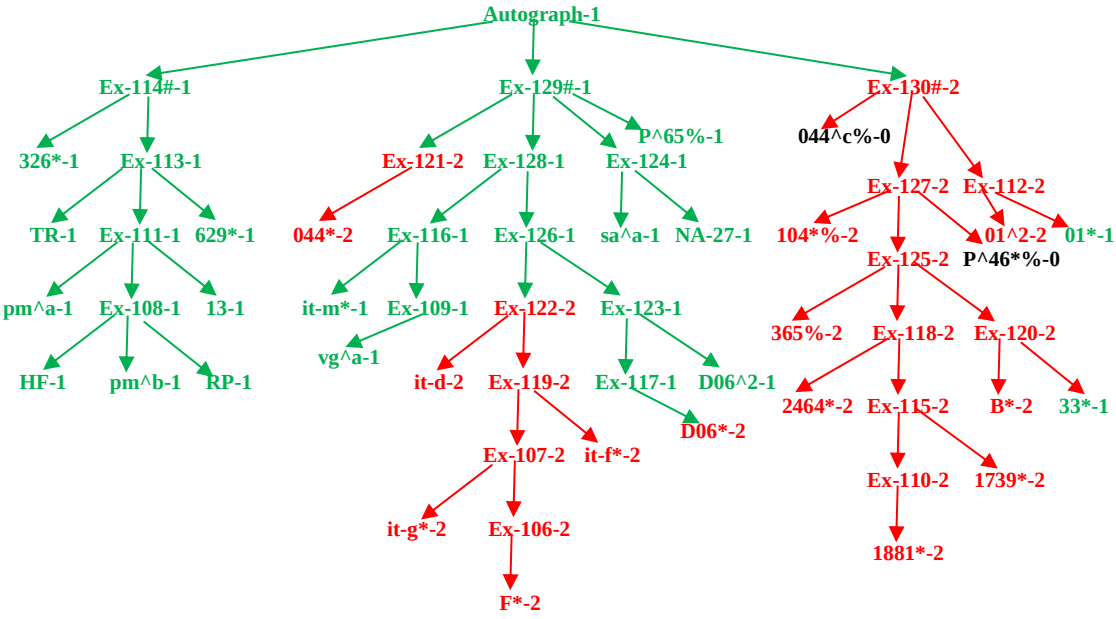
1 Thessalonians 4:11 reads: "that you also aspire to lead a quiet life, to mind your own business, and to work with your own hands, as we commanded you." In this passage some witnesses contain the word "own" before the word "hands" and some do not. There are two variant readings here:

(1) ἰδιαις—own

(2) ομιτ—omit

Figure 4.7 displays the distribution of these variants throughout genealogical history.

Figure 4.7
Distribution of 4:11,1



Variant 1 (own) has the consensus of two of the three first-generation recensions: Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in

the Byzantine text tradition, the support of all the witnesses of the Western text tradition, except for those in the sub-branches headed by second-generation Exemplar Ex-121 and fourth-generation Exemplar Ex-122, and for MS D06*. It also occurs independently in MSS 01* and 33*. It has the greatest antiquity, the broadest distribution, and persistence.

Variant 2 (omit "own") occurs in the Egyptian text tradition headed by first-generation Exemplar Ex-130#, except for MSS 01* and 33*. It also occurs by mixture in sub-branches of the Western text tradition headed by second-generation Exemplar Ex-121 and by fourth-generation Exemplar Ex-122, and also in MS D06*. This variant lack antiquity, sufficient distribution, but it has persistence once initiated.

As Also 5:6,1

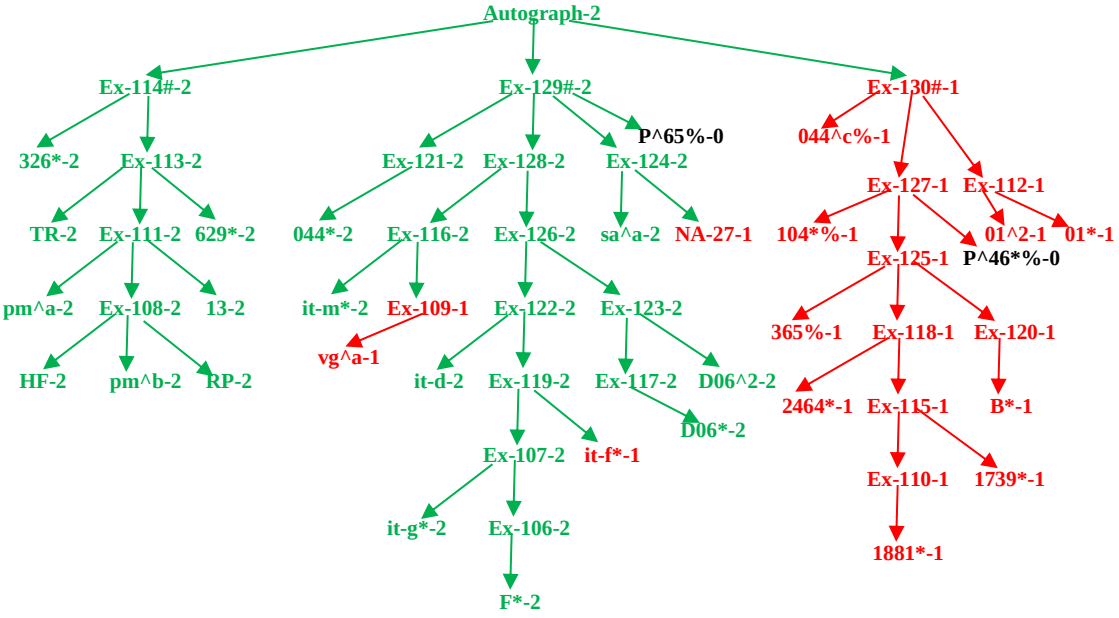
1 Thessalonians 5:6 reads: "Therefore let us not sleep, as others *do*, but let us watch and be sober." In this passage some witnesses contain the word "and (= also)" after the word "as" and some do not. There are two variant readings here:

(1) ομιτ—omit

(2) καιι—and

Figure 4.8 displays the distribution of these variants throughout genealogical history.

Figure 4.8
Distribution of 5:6,1



Variant 2 (“and”) has the consensus of two of the three first-generation recensions: Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-129#, the recension from which the Western text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Byzantine text tradition, and the support of all the witnesses of the Western text tradition, except for those in the sub-branch headed by fourth-generation Exemplar Ex-109, and for MSS A*, it-b*, it-f*, sy^p, and NA-27 (some not shown). It also occurs independently in MSS 01^2, 6, vg^cl and sy^h. It has the greatest antiquity, the broadest distribution, and persistence.

Variant 1 (omit “and”) occurs in the Egyptian text tradition headed by first-generation Exemplar Ex-130#. It also occurs by mixture in the sub-branch of the Western text tradition headed by fourth-generation Exemplar Ex-109, and also in MSS A*, it-b*, it-f*, sy^p, and NA-27 (some not shown). This variant lack antiquity, sufficient distribution, but it has persistence once initiated.

As Also 5:25,1

1 Thessalonians 5:25 reads: “Brethren, pray for us.” In this passage some witnesses contain the word “and (= also)” after the word “pray” and some do not. There are two variant readings here:

(1) και—and

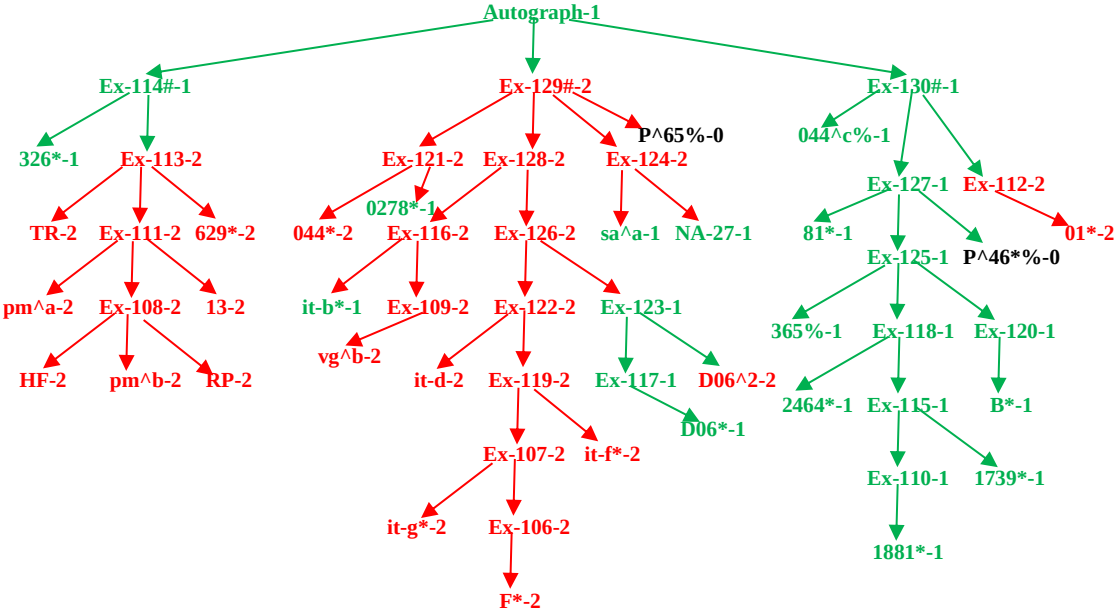
(2) ομιτ—omit

Figure 4.9 displays the distribution of these variants throughout genealogical history. Variant 1 (“and”) has the consensus of two of the three first-generation recensions: Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Egyptian text tradition, except those in the sub-branch headed by second-generation Exemplar Ex112, and the support of the first-generation witnesses of the Byzantine text tradition, except for those in the branch headed by second-generation Exemplar Ex-113. It occurs also in the sub-branch of the Western text tradition headed by fourth-generation Exemplar Ex-123 except for MS D06^2. It occurs independently in and MSS 0278*, it-b*, sa^a, Ambst%, and NA-27. It has the greatest antiquity, the broadest distribution, and persistence.

Variant 2 (omit “and”) occurs in the Western text tradition headed by first-generation Exemplar Ex-129#, except for those in the sub-branch headed by fourth-generation Exemplar Ex-123, and MSS 0278*, it-b*, sa^a, Ambst%, and NA-27. It also occurs by mixture in the sub-branch

of the Byzantine text tradition headed by second-generation Exemplar Ex-113. This variant lacks antiquity, sufficient distribution, but it has persistence once initiated.

Figure 4.9
Distribution of 5:25,1



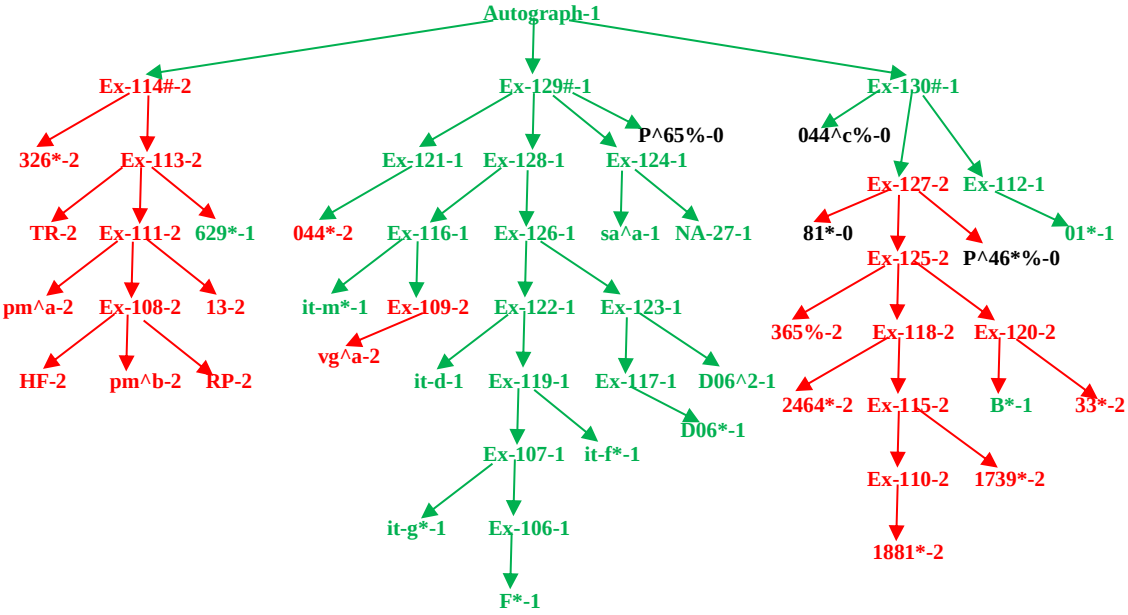
Holy ? 5:27,2

1 Thessalonians 5:27 reads: "I charge you by the Lord that this epistle be read to all the holy brethren." In this passage some witnesses contain the word "holy" before the word "brethren" and some do not. There are two variant readings here:

(1) ομιτ—omit
(2) αγιοις—holy

Figure 4.10 displays the distribution of these variants throughout genealogical history. Variant 1 (omit "holy") has the consensus of two of the three first-generation recensions: Exemplar Ex-129#, the recension from which the Western text tradition was derived, and Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Western text tradition, except those in the sub-branch headed by fourth-generation Exemplar Ex-109, and MSS 044*, bo^a, it-ar (some not shown); it has the support of the first-generation witnesses of the Egyptian text tradition, except for those in the branch headed by second-generation Exemplar Ex-127, and MSS 01^2 and B*. It has the greatest antiquity, the broadest distribution, and persistence.

Figure 4.10
Distribution of 5:27,2



Variant 2 (omit "and") occurs in all the witnesses in the Byzantine text tradition headed by first-generation Exemplar Ex-114#. It also occurs by mixture in the sub-branch of the Egyptian text tradition headed by second-generation Exemplar Ex-127, except for MSS 02^2 and B*. This variant lacks antiquity, sufficient distribution, but it has persistence once initiated.

Omit Amen 5:28,1

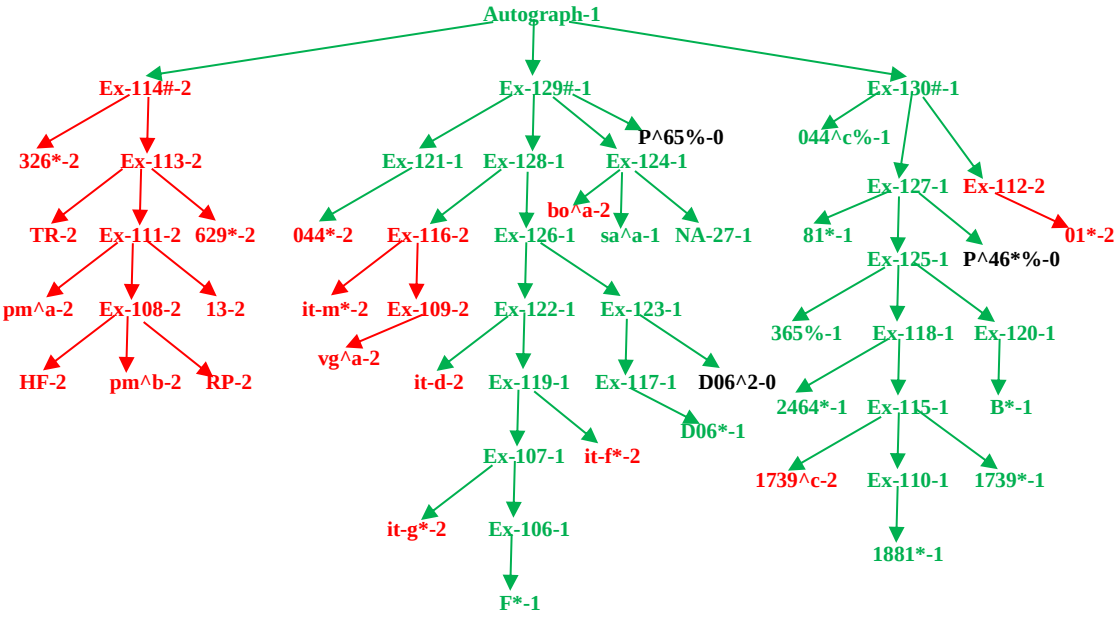
1 Thessalonians 5:28 reads: "The grace of our Lord Jesus Christ *be* with you. Amen." In this passage some witnesses contain the word "Amen" at the end of the verse and some do not. There are two variant readings here:

(1) ομιτ—omit
(2) αμην—Amen

Figure 4.11 displays the distribution of these variants throughout genealogical history. Variant 1 (omit "Amen") has the consensus of two of the three first-generation recensions: Exemplar Ex-129#, the recension from which the Western text tradition was derived, and Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Western text tradition, except those in the sub-branch headed by third-generation Exemplar Ex-116, and MSS D06^1, 044*, bo^a, it-d, it-f, it-g, and it-h (some not shown); it has the support of all the

witnesses of the Egyptian text tradition, except for those in the branch headed by second-generation Exemplar Ex-112, and MSS A* and 1739^c. It has the greatest antiquity, the broadest distribution, and persistence.

Figure 4.11
Distribution of 5:28,1



Variant 2 (“Amen”) occurs in all the witnesses in the Byzantine text tradition headed by first-generation Exemplar Ex-114#. It also occurs by mixture in the sub-branch of the Egyptian text tradition headed by second-generation Exemplar Ex-112, and in MSS A* and 1739^c. It also occurs by mixture in the sub-branch of the Western text tradition headed by third-generation Exemplar Ex-116, and in MSS D06^1, 044*, bo^a, it-d, it-f, it-g, and it-h (some not shown). This variant lacks antiquity, sufficient distribution, but it has persistence once initiated.

Tracing Any Variant

The above studies trace the history of variants of particular interest using the computer program Lachmann-10. But one may trace the history of any other desired variant using the information in Appendices D, F, and H. Take for example the variants at variation unit 56 at reference 4:9,1:

1 Thessalonians 4:9 reads: “But concerning brotherly love you have no need that I should write to you, for you yourselves are taught by God to love one another.” There are three alternate

inflections of the verb "you have" in this verse. To trace the genealogical distribution of these variants, walk through the following steps:

Step 1: Using Appendices D and F, find the variant readings.

Appendix D reads:

56.1	4:9,1.1	⌜εχετε	0.67

That is, the autographic reading is the first variant (56.1), εχετε "you have" and that its probability is 0.67 (67%).

Appendix F reads:

56.2	4:9,1.2	Ex-134$	εχομεν
56.3	4:9,1.3	Ex-133$	ειχομεν

Variant 2 is εχομεν "we have," initiated in virtual Exemplar Ex-134$.
Variant 3 is ειχομεν "we have" initiated in virtual Exemplar Ex-133$.

Step 2: Using Appendix H, find where these variants were initiated in the history of the text.

Appendix H reads:

56.1	4:9,1.1	[K*%]<2>; [1241*%]<2>; [Ex-123]<4>; [Ex-124]<2>; Autograph;
56.2	4:9,1.2	[01^2]<3>; [D06*]<6>; [104*%]<3>; [365%]<4>; [1505*%]<2>; [Ex-118]<4>; [Ex-129#]<1>; [Ex-132$]<1>; Ex-134$<1>;
56.3	4:9,1.3	[B*]<5>; [I%]<3>; [vg^b]<5>; [it-t%]<4>; Ex-133$<1>;

That is, the first variant was initiated in the Autograph, and by mixture it was subsequently introduced in [K*%]<2>; [1241*%]<2>; [Ex-123]<4>; [Ex-124]<2>. The second variant was initiated in the Exemplar Ex-134$, and by mixture it was subsequently introduced in [[01^2]<3>; [D06*]<6>; [104*%]<3>; [365%]<4>; [1505*%]<2>; [Ex-118]<4>; [Ex-129#]<1>; [Ex-132$]<1>. The third variant was initiated in Exemplar Ex-133$, and by mixture it was subsequently introduced in[B*]<5>; [I%]<3>; [vg^b]<5>; [it-t%]<4>.

Step 3: copy figure 3.1 from chapter 3 on a separate sheet of paper, as on the next page, and write the variant numbers at the places on diagram where each variant was initiated; use green for the autographic reading (1), red for the first variant (2), blue for the second variant (3), as illustrated in figure 4.12.

Step 4: Using its designated color, let each initiated variant extend by inheritance to all its descendants down to its extant terminal witnesses, or until changed by a new initiation, as shown

in figure 4.13. Witnesses marked with % are fragmentary; their readings are often lacking; they may be ignored in this step.

Figure 4.12
Illustrating Marking Places of Initiation
At 1 Thessalonians 4:9,1

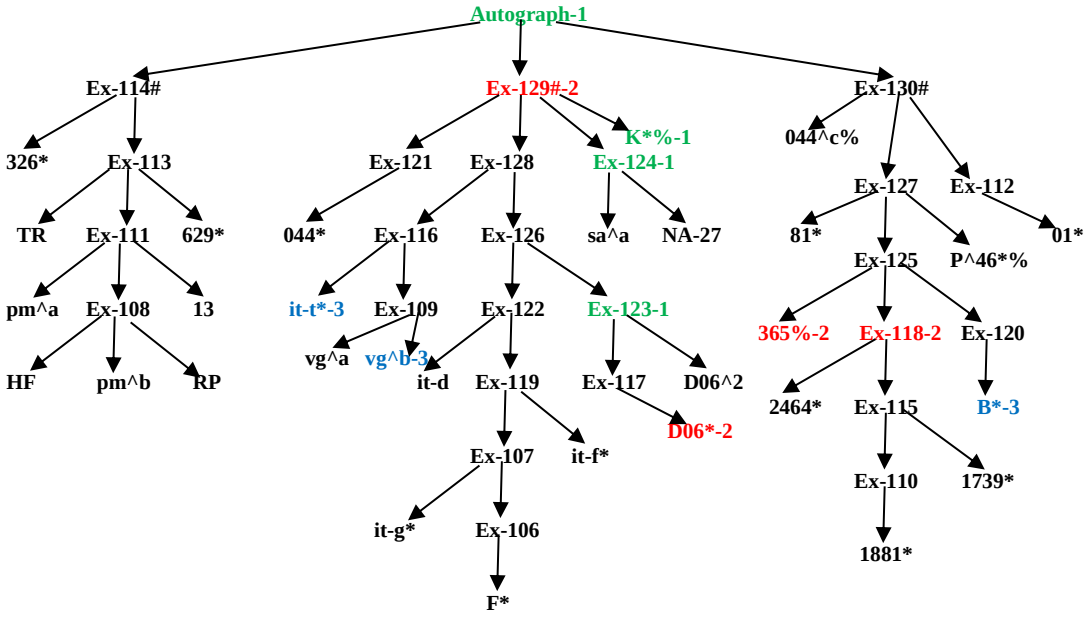


Figure 4.13
Distribution of 1 Thessalonians 4:9,1

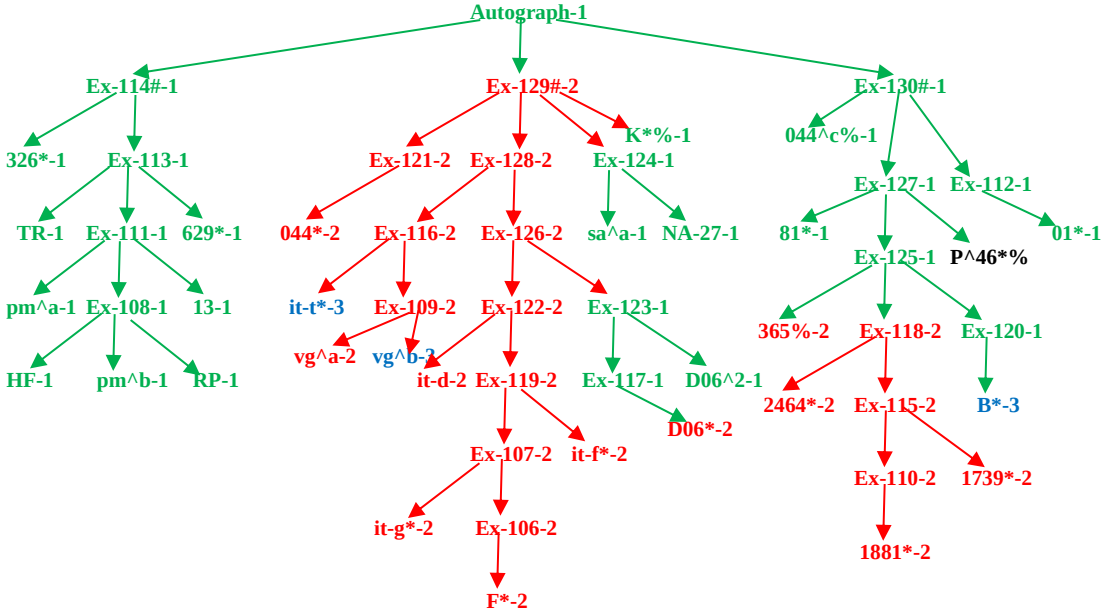


Figure 4.13 displays the distribution of these variants throughout genealogical history. Variant 1 (“you have”) has the consensus of two of the three first-generation recensions: Exemplar Ex-114#, the recension from which the Byzantine text tradition was derived, and Exemplar Ex-130#, the recension from which the Egyptian text tradition was derived; it was selected as the autographic reading on this basis with a probability of 67%. It has the support of all the witnesses in the Byzantine text tradition; it has the support of all the witnesses of the Egyptian text tradition, except for those in the branch headed by fourth-generation Exemplar Ex-118, and MSS B* and 365%. It is supported by the witnesses in the sub-branches of the Western text tradition headed by second-generation Exemplar Ex-124 and by third-generation Exemplar Ex-123, together with MSS K*% and 1241*% (not shown). It has the greatest antiquity, the broadest distribution, and persistence.

Variant 2 (“we have”) is supported by all the witnesses in the Western text tradition headed by Exemplar Ex-129#, except for those in sub-branches headed by second-generation Exemplar Ex-124 and fourth-generation Exemplar Ex-123, and MSS K*%, 1241*% (not shown), it-t*, and vg^b. Variant-3 is supported only by B*, I, vg^b, and it-t*. These readings lack antiquity and distribution.

Conclusion

This chapter identifies the autographic readings of the Greek text of the Book of 1 Thessalonians and how they were determined. It provides the genealogical history of each variant reading, locating where each reading originated, and describing how each reading was distributed by inheritance throughout that history. It discusses the principal recensions, locating their origin in history, and identifying their characteristic readings.

CHAPTER 5
SUMMARY AND CONCLUSIONS

The genealogical software and the theory it emulates were successful in reconstructing a genealogical history of the Greek text of the Bool of 1 Thessalonians. The software made use of a modified version of the textual apparatus in the 27th edition of the Nestle-Aland Greek New Testament. Using index numbers to represent the variant readings in the witnesses to the text, the computer constructed a kind of genetic code for each witness based on its unique combination of variant readings. Then employing the basic principles of heredity, a relatively simple tree diagram was constructed representing the genealogical history of the text.

Heredity is the underlying principle of genealogical relationships. Because manuscripts of a text were copied from exemplars of earlier generations of the text, of necessity they have genealogical relationships. For manuscripts, quantitative affinity (consensus of variant readings) and a sibling gene, coupled with historical directionality constitute the variables for computing genealogical heredity. For variant readings, on the other hand, the domain of heredity is limited to their place of variation. There, heredity is determined by consensus among sibling sister witnesses and by what I call evidence of variant inheritance.[1] The software uses the heredity of manuscripts and the heredity of variant readings to guide the reconstruction of a historical genealogical tree diagram.

Mixture occurred when a scribe copied from more than one exemplar—a primary parent exemplar and one or more secondary exemplars. The readings of a manuscript were inherited from its primary parent exemplar or borrowed by mixture from its secondary parent exemplars; otherwise a variant was newly introduced by scribal error (either accidentally or intentionally) thus initiating a new line of heredity. A good number of witnesses had no mixture, but considerable mixture occurred in others. As it turned out, the presence of mixture does not affect the reconstruction of the genealogical tree, but it is very useful in identifying the places in genealogical history

[1] At any place in the genealogical history of a text, the evidence of a variant's inheritance is its presence in other witnesses of the same or earlier generations.

where variants were initiated, in tracing the genealogical history of variants, and in identifying recensions.

The Effect of Recensions

The genealogical theory and associated software were designed to reconstruct the genealogical history of texts where the copying process was simple, without any radical discontinuities. It was anticipated that the initiation and transmission of textual variants would be gradual and that the tree would develop three or four main branches corresponding to the commonly accepted text types. However, the theory and software also made provision for radical dislocations if they perchance had occurred. As it turned out radical dislocations did occur in the form of some major and minor recensions.[2] Furthermore, the most radical recensions took place in the earliest generation that genealogical relationships could be reasonably determined. This information indicates that in the earliest days of New Testament history its text was in flux and its genealogical history for that time period cannot be confidently reconstructed. These details could have resulted in disappointment except that the earliest recensions, though diverse from one another, nevertheless had sufficient consensus to identify the autographic readings.

Binary Branches

The genealogical tree diagram reconstructed by the software is often binary, that is, there are only two branches where the tree divides. Table 3.3 in Chapter 3 indicates that 13 out of 74 branches were binary. Critics of the genealogical theory claim that the methodology fails whenever there are only two branches, because no consensus can exist where there are only two alternatives. That would be true except for the principle of deferred ambiguity. In such cases, where ambiguity exists in one witness, its sister has the inherited reading.

A reading has evidence of variant inheritance when it is also found in witnesses of earlier generations. A reading will not be found in any witness dating in a generation prior to the one in which the reading first originated. Autographic readings have continual evidence of variant inheritance; all others acquire that evidence in the generation of their origin subsequent to the autograph. The evidence of variant inheritance usually decides between two equally probable readings; but

[2] A recension is recognized by the introduction of a larger number of variants than normal in a witness, usually also accompanied by a larger number of secondary parent exemplars—mixture.

where even that fails, a final appeal can be made indirectly to internal evidence. So, a binary construction does not turn out to be a crucial weakness. Still, some may be concerned that the earliest history of the text is determined by such diverse witnesses. However, Table 4.4 of Chapter 4 indicates that 96.56% of the textual decisions made in the reconstruction of the historical tree diagram were made on the basis of consensus and deferred ambiguity; so, diversity was not a significant deterrent. Furthermore, Table 4.5 of Chapter 4 indicates that 100% of the autographic readings were decided on the basis of consensus.

So What!

Someone may ask: "After all those painstaking computations, what is now known that was not already known by means of traditional textual critical methodology?" The answer should be self-evident, but for the sake of review, here is a list of the more prominent bits of knowledge the computations provide:

(1) A rigorous construction of the genealogical history of the witnesses to the text, something that did not previously exist.

(2) A precise account of the genealogical history of each variant reading, including its place of origin and subsequent distribution, something that did not previously exist.

(3) The identity of the autographic readings based on an unbiased implementation of the laws of heredity, together with the mathematical probability of each one, instead of educated estimates.

(4) An accurate description of the content and structure of the traditional text types, and their internal and external genealogical relationships, instead of educated estimates.

(5) Hopefully a better understanding of the laws of heredity as they apply to manuscripts.

The laws of heredity have been applied to the factual evidence derived from the existing witnesses to the text of 1 Thessalonians. They have been applied with mathematical precision apart for human intervention and bias. Hopefully the results provide a better understanding of the history of the text. In either case, no claim is made that the derived history and the text identified as autographic are free from uncertainty. The results are dependent on the validity of the underlying theory and its software implementation. Undoubtedly the future will bring forth improved theory and implementation.

James D. Price
February, 2021

APPENDIX A

List of Extant Witnesses to the Greek Text of the Book of 1 Thessalonians

This appendix contains a list of the extant witnesses to the Greek text of the Book of 1 Thessalonians. For each witness it lists its name, date, language (0 = Greek; 1 = other), content (references where readings exist), number of readings, and percentage of completeness. In the content column, a verse is counted as long as it has at least one extant reading.

Name	Date	Language	Content	Number	Percent
P^30%	250	0	413-; 416-417; 53-; 59-510; 513-515; 525-	19	20.43%
P^46*%	200	0	1:1-11; 19-110; 55-; 57-59; 523-; 527-	12	12.90%
P^65%	250	0	15-16; 19-110; 27-28; 210-212	17	18.28%
01*	350	0	1:1-528	93	100.00%
01^c	1150	0	1:1-11; 14-23; 25-; 28-41; 48-410; 413-513; 521-528	84	90.32%
01^1	550	0	1:1-11; 14-23; 25-; 28-41; 48-410; 413-513; 521-528	84	90.32%
01^2	650	0	1:1-528	92	98.92%
A*	450	0	1:1-528	93	100.00%
B*	350	0	1:1-528	93	100.00%
C*%	450	0	28-Dec	22	23.66%
C^2%	550	0	15-16; 19-110; 25-28	15	16.13%
D06*	550	0	1:1-528	93	100.00%
D06^c	900	0	1:1-110; 25-; 28-; 210-213; 216-31; 33-523; 527-	77	82.80%
D06^1	600	0	1:1-16; 18-110; 25-; 28-; 210-31; 33-528	78	83.87%
D06^2	850	0	1:1-523; 527-	89	95.70%
F*	850	0	1:1-528	93	100.00%
G012*	850	0	1:1-528	93	100.00%
G012^c	900	0	1:1-528	93	100.00%
H015*%	550	0	29-213; 48-410	13	13.98%
I%	450	0	1:1-12; 19-110; 27-28; 215-216; 32-35; 313-; 48-410; 416-418; 59-510; 523-525	42	45.16%
K*%	850	0	1:1-11; 14-16; 18-110; 25-; 28-; 210-212; 216-41; 48-410; 413-418; 53-55; 57-510; 513-; 521-523	69	74.19%
L020*%	850	0	1:1-11; 15-16; 19-110; 25-; 28-; 210-212; 216-31; 33-41; 48-410; 413-418; 53-55; 57-510; 513-; 521-523	67	72.04%
P025*%	850	0	1:1-11; 14-16; 18-33; 418-	39	41.94%
044*	1000	0	1:1-528	92	98.92%
044^c%	1050	0	1:1-11; 15-16; 19-110; 25-28; 210-212; 216-31; 33-41; 48-410; 413-418; 53-55; 57-510; 513-; 521-523	69	74.19%
48%	450	0	1:1-11; 15-16	7	7.53%
183%	650	0	37-39; 41-43	8	8.60%
208%	550	0	25-; 212-216	9	9.68%
226%	450	0	416-418; 53-55	10	10.75%
0278*	850	0	1:1-528	93	100.00%
6	1250	0	1:1-528	93	100.00%
33*	850	0	1:1-528	92	98.92%
81*	1044	0	1:1-23; 25-; 28-41; 48-410; 413-510; 513-; 521-525	81	87.10%

104*%	1087	0	1:1-11; 14-17; 19-110; 25-28; 210-212; 216-418; 53-55; 57-510; 513-; 521-525	69	74.19%
181	950	0	1:1-528	93	100.00%
255	1350	0	1:1-528	93	100.00%
323*	1150	0	1:1-528	93	100.00%
326*	950	0	1:1-528	93	100.00%
326^c	1000	0	1:1-528	93	100.00%
365%	1150	0	1:1-11; 15-16; 18-110; 25-; 28-212; 216-31; 33-418; 53-55; 57-510; 513-; 521-523	70	75.27%
614*	1250	0	1:1-528	93	100.00%
629*	1350	0	1:1-528	93	100.00%
630%	1300	0	1:1-12; 15-16; 18-110; 25-; 28-; 210-212; 216-31; 33-41; 48-410; 413-418; 53-55; 57-510; 513-; 521-523	70	75.27%
945	1050	0	1:1-528	93	100.00%
1175*%	950	0	33-41; 48-418; 53-55; 57-510; 513-; 521-523	45	48.39%
1241*%	1150	0	1:1-11; 15-16; 19-110; 25-; 28-; 210-212; 216-41; 48-410; 413-418; 53-55; 57-510; 513-; 521-523	66	70.97%
1505*%	1150	0	1:1-11; 14-16; 18-110; 25-; 28-212; 216-41; 48-418; 53-55; 57-510; 513-; 521-525	74	79.57%
1739*	900	0	1:1-528	93	100.00%
1739^c	950	0	1:1-528	93	100.00%
1881*	1350	0	1:1-528	93	100.00%
1881^c	1400	0	1:1-528	93	100.00%
2464*	850	0	1:1-11; 15-16; 18-23; 25-; 28-212; 216-41; 48-410; 413-510; 513-525	76	81.72%
pm^a	850	0	1:1-528	93	100.00%
pm^b	850	0	1:1-528	93	100.00%
TR	1892	0	1:1-528	93	100.00%
HF	1982	0	1:1-528	93	100.00%
RP	1995	0	1:1-528	93	100.00%
l^249	850	0	1:1-528	93	100.00%
l^846	850	0	1:1-528	93	100.00%
vg^a	400	1	1:1-11; 15-110; 25-; 28-418; 53-55; 57-510; 513-; 521-528	80	86.02%
vg^b	400	1	1:1-11; 15-110; 25-; 28-418; 53-55; 57-510; 513-; 521-528	80	86.02%
vg^cl	1592	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%
vg^s	1590	1	1:1-11; 15-110; 25-; 28-418; 53-55; 57-510; 513-; 521-528	80	86.02%
vg^st	1994	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%
vg^ww	1889	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%
it-ar*	950	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%

it-b*	450	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%
it-d	450	1	1:1-528	92	98.92%
it-f*	550	1	1:1-528	93	100.00%
it-g*	800	1	1:1-528	93	100.00%
it-g^c	800	1	1:1-528	93	100.00%
it-m*	950	1	1:1-12; 15-110; 25-418; 53-510; 513-528	85	91.40%
it-r%	700	1	1:1-12; 15-110	15	16.13%
it-t%	1000	1	43-49; 413-416; 53-510; 515-523	26	27.96%
sy^h	616	1	1:1-12; 15-110; 25-418; 53-510; 513-528	84	90.32%
sy^p%	425	1	1:1-11; 15-17; 19-110; 25-; 28-; 210-213; 216-41; 48-410; 413-418; 53-510; 513-525	73	78.49%
sa^a	250	1	1:1-11; 15-16; 19-110; 25-212; 215-418; 53-510; 513-; 521-528	78	83.87%
sa^b%	250	1	1:1-11; 15-16; 19-110; 25-212; 215-418; 53-510; 513-; 521-523	74	79.57%
bo^a	250	1	1:1-11; 15-16; 19-110; 25-212; 215-418; 53-510; 513-; 521-528	78	83.87%
bo^b%	250	1	1:1-11; 15-16; 19-110; 25-; 28-212; 215-418; 53-510; 513-; 521-523	73	78.49%
13	1250	0	1:1-528	93	100.00%
69	1450	0	1:1-528	93	100.00%
346	1150	0	1:1-528	93	100.00%
543	1150	0	1:1-528	93	100.00%
788	1050	0	1:1-528	93	100.00%
826	1150	0	1:1-528	93	100.00%
828	1150	0	1:1-528	93	100.00%
983	1150	0	1:1-528	93	100.00%
NA-27	1979	0	1:1-528	93	100.00%
Ambr%	397	1	48-	3	3.23%
Ambst%	366	1	12-; 18-; 213-; 32-; 39-; 48-; 417-; 55-56; 515-; 525-528	22	23.66%
Aug^a%	430	1	212-; 49-	4	4.30%
Aug^b%	430	1	413-; 53-	6	6.45%
Bas%	379	0	32-	3	3.23%
Cass%	580	1	513-	3	3.23%
Cl^a%	215	0	24-27; 43-48; 56-; 513-	11	11.83%
Did^a%	398	0	521-	1	1.08%
Eus^a%	339	0	110-; 28-; 416-	8	8.60%
Hier^a%	420	1	28-	4	4.30%
Irlat^a%	395	1	53-; 523-	4	4.30%
McionT%	150	0	215-	1	1.08%
Or^a%	254	0	215-; 413-	4	4.30%

Or^lat^a%	254	1	28-	4	4.30%
Spec%	450	0	212-; 48-; 417-; 515-	9	9.68%
Tert^a%	220	1	219-; 43-; 416-417; 53-	9	9.68%

APPENDIX B

List of the References Associated

with Each Place of Variation

This appendix contains a list of the references associated with each place of variation. The number to the left of the hyphen is the index number of the place of variation, and the numbers to the right constitute the reference. The reference indicates the chapter, verse, and ordered rank of the place of variation in that verse. For example, 23-2:8,3 indicates that the 23rd place of variation occurs in chapter 2, verse 8, and is the 3rd place of variation in that verse.

Reference at Each Place of Variation

1-1:1,1	2-1:1,2	3-1:2,1	4-1:4,1	5-1:5,1	6-1:5,2	7-1:5,3
8-1:5,4	9-1:6,1	10-1:7,1	11-1:8,1	12-1:8,2	13-1:9,1	14-1:10,1
15-1:10,2	16-1:10,3	17-2:3,1	18-2:4,1	19-2:5,1	20-2:7,1	21-2:8,1
22-2:8,2	23-2:8,3	24-2:8,4	25-2:9,1	26-2:10,1	27-2:12,1	28-2:12,2
29-2:13,1	30-2:13,2	31-2:15,1	32-2:16,1	33-2:16,2	34-2:16,3	35-2:19,1
36-3:1,1	37-3:2,1	38-3:2,2	39-3:2,3	40-3:3,1	41-3:5,1	42-3:7,1
43-3:8,1	44-3:9,1	45-3:9,2	46-3:13,1	47-3:13,2	48-3:13,3	49-4:1,1
50-4:1,2	51-4:1,3	52-4:3,1	53-4:8,1	54-4:8,2	55-4:8,3	56-4:9,1
57-4:9,2	58-4:10,1	59-4:10,2	60-4:11,1	61-4:13,1	62-4:13,2	63-4:13,3
64-4:14,1	65-4:15,1	66-4:16,1	67-4:17,1	68-4:17,2	69-4:17,3	70-4:18,1
71-5:2,1	72-5:3,1	73-5:3,2	74-5:3,3	75-5:4,1	76-5:5,1	77-5:6,1
78-5:7,1	79-5:9,1	80-5:9,2	81-5:10,1	82-5:10,2	83-5:12,1	84-5:13,1
85-5:13,2	86-5:13,3	87-5:15,1	88-5:21,1	89-5:23,1	90-5:25,1	91-5:27,1
92-5:27,2	93-5:28,1					

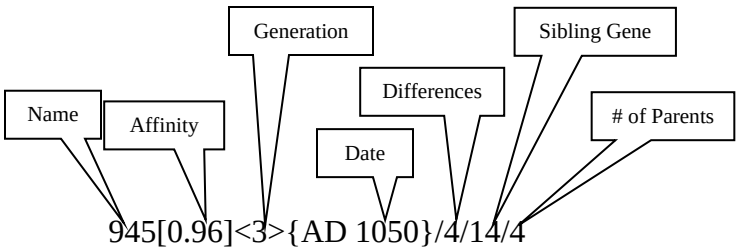
Appendix C

The Genealogical Tree Diagram of

The Textual History of the Book of 1 Thessalonians

This appendix contains the tree diagram of the genealogical history of the Greek text of the Book of 1 Thessalonians. The tree is displayed vertically rather than horizontally. That is, the autograph in the upper left corner with succeeding generations indented from the left progressively downward. Sibling daughter descendants are linked by vertical lines. For example, the first-generation descendants of the autograph are Ex-114#,[44] Ex-129#, and Ex-130#. Only the primary exemplars are displayed, so no mixture connections are shown. The diagram spills over onto succeeding pages, but the lower-case letters at the page breaks show where the lines from one page connect to those of the next.

The format of the information on each line is as follows: (1) the name of the witness; (2) the genealogical affinity of the witness with its primary parent exemplar, enclosed in square brackets []; (3) generation from the autograph, enclosed in angular brackets <>; (4) date, enclosed in curly brackets {}; (5) the number of variants the witness differs from its primary parent, enclosed in slant marks //; (6) The number of variants in the sibling gene; and (7) the number of parents the witness has.



[44] The names of exemplars created by the software have the prefix "Ex-" followed by a number; extant witnesses have the names provided in NA-27 as modified for compatibility with the software (discussed in Chapter Two of Volume 1).

Genealogical Tree of 1 Thessalonians

Autograph[0.00]<0>{AD 90}/0/0/0
|-Ex-114#[0.81]<1>{AD 100}/18/18/2
| |-326^c[0.99]<2>{AD 1000}/1/18/2
| |-326*[0.99]<2>{AD 950}/1/18/2
| |-McionT%[1.00]<2>{AD 150}/0/18/1
| |-Ex-113[0.85]<2>{AD 348}/14/18/3
| |-945[0.96]<3>{AD 1050}/4/14/4
| |-629*[0.87]<3>{AD 1350}/12/14/5
| |-TR[0.95]<3>{AD 1892}/5/14/4
| |-Did^a%[1.00]<3>{AD 398}/0/14/1
| |-Ex-111[0.94]<3>{AD 750}/6/14/3
| |-13[1.00]<4>{AD 1250}/0/6/1
| |-pm^a[0.99]<4>{AD 850}/1/6/2
| |-l^249[1.00]<4>{AD 850}/0/6/1
| |-l^846[0.98]<4>{AD 850}/2/6/3
| |-Ex-108[0.98]<4>{AD 800}/2/6/3
| |-181[1.00]<5>{AD 950}/0/2/1
| |-255[0.99]<5>{AD 1350}/1/2/2
| |-323*[0.95]<5>{AD 1150}/5/2/5
| |-614*[0.95]<5>{AD 1250}/5/2/5
| |-pm^b[0.99]<5>{AD 850}/1/2/2
| |-69[1.00]<5>{AD 1450}/0/2/1
| |-346[1.00]<5>{AD 1150}/0/2/1
| |-543[1.00]<5>{AD 1150}/0/2/1
| |-788[1.00]<5>{AD 1050}/0/2/1
| |-826[1.00]<5>{AD 1150}/0/2/1
| |-828[1.00]<5>{AD 1150}/0/2/1
| |-983[1.00]<5>{AD 1150}/0/2/1
| |-HF[1.00]<5>{AD 1982}/0/2/1
| |-RP[1.00]<5>{AD 1995}/0/2/1
|-Ex-130#[0.89]<1>{AD 95}/10/10/2
| |-P^30%[0.74]<2>{AD 250}/5/10/3
| |-C^2%[0.87]<2>{AD 550}/2/10/3
| |-P025*%[0.92]<2>{AD 850}/3/10/3
| |-044^c%[0.96]<2>{AD 1050}/3/10/3
| |-048%[1.00]<2>{AD 450}/0/10/1
| |-0183%[1.00]<2>{AD 650}/0/10/1
| |-0208%[1.00]<2>{AD 550}/0/10/1
| |-0226%[0.90]<2>{AD 450}/1/10/2
| |-630%[0.87]<2>{AD 1300}/9/10/4
a b

```
a  b
|  |-1175*%[0.93]<2>{AD 950}/3/10/2
|  |-1505*%[0.89]<2>{AD 1150}/8/10/5
|  |-Ambr%[0.67]<2>{AD 397}/1/10/2
|  |-Bas%[1.00]<2>{AD 379}/0/10/1
|  |-Cass%[1.00]<2>{AD 580}/0/10/1
|  |-Eus^a%[0.63]<2>{AD 339}/3/10/2
|  |-Hier^a%[0.75]<2>{AD 420}/1/10/2
|  |-Or^a%[1.00]<2>{AD 254}/0/10/1
|  |-Or^lat^a%[0.75]<2>{AD 254}/1/10/2
|  |-Ex-112[0.91]<2>{AD 300}/8/10/4
|  |  |-01^c[1.00]<3>{AD 1150}/0/8/1
|  |  |-01*[0.87]<3>{AD 350}/12/8/3
|  |  |-01^1[0.99]<3>{AD 550}/1/8/2
|  |  |-01^2[0.90]<3>{AD 650}/9/8/3
|  |  |-I%[0.90]<3>{AD 450}/4/8/5
|  |-Ex-127[0.96]<2>{AD 115}/4/10/3
|     |-81*[0.93]<3>{AD 1044}/6/4/4
|     |-P^46*%[0.83]<3>{AD 200}/2/4/2
|     |-L020*%[0.96]<3>{AD 850}/3/4/3
|     |-104*%[0.88]<3>{AD 1087}/8/4/6
|     |-Ex-125[0.92]<3>{AD 165}/7/4/3
|        |-365%[0.91]<4>{AD 1150}/6/7/4
|        |-Cl^a%[0.73]<4>{AD 215}/3/7/3
|        |-Spec%[0.67]<4>{AD 450}/3/7/3
|        |-Ex-120[0.95]<4>{AD 300}/5/7/4
|        |  |-B*[0.76]<5>{AD 350}/22/5/4
|        |  |-33*[0.91]<5>{AD 850}/8/5/6
|        |-Ex-118[0.98]<4>{AD 516}/2/7/2
|           |-2464*[0.95]<5>{AD 850}/4/2/5
|           |-Ex-115[0.92]<5>{AD 566}/7/2/4
|              |-1739^c[0.97]<6>{AD 950}/3/7/3
|              |-1739*[0.97]<6>{AD 900}/3/7/4
|              |-sy^h[0.87]<6>{AD 616}/11/7/6
|              |-Ex-110[0.96]<6>{AD 1200}/4/7/2
|                 |-1881^c[1.00]<7>{AD 1400}/0/4/1
|                 |-6[0.87]<7>{AD 1250}/12/4/6
|                 |-1881*[0.98]<7>{AD 1350}/2/4/3
|-Ex-129#[0.97]<1>{AD 150}/3/3/2
   |-P^65%[0.94]<2>{AD 250}/1/3/2
   |-K*%[0.94]<2>{AD 850}/4/3/4
   a
```

```
a
 |-1241*%[0.95]<2>{AD 1150}/3/3/3
 |-Aug^b%[0.67]<2>{AD 430}/2/3/3
 |-Irlat^a%[0.75]<2>{AD 395}/1/3/1
 |-Tert^a%[0.67]<2>{AD 220}/3/3/2
 |-Ex-121[0.96]<2>{AD 800}/4/3/4
 |   |-044*[0.87]<3>{AD 1000}/12/4/5
 |   |-0278*[0.89]<3>{AD 850}/10/4/5
 |-Ex-124[0.96]<2>{AD 200}/3/3/3
 |   |-sa^a[0.95]<3>{AD 250}/4/3/3
 |   |-bo^a[0.95]<3>{AD 250}/4/3/3
 |   |-A*[0.76]<3>{AD 450}/19/3/6
 |   |-C*%[0.73]<3>{AD 450}/4/3/3
 |   |-it-r%[0.73]<3>{AD 700}/3/3/4
 |   |-sy^p%[0.88]<3>{AD 425}/8/3/6
 |   |-sa^b%[0.96]<3>{AD 250}/3/3/3
 |   |-bo^b%[0.95]<3>{AD 250}/4/3/3
 |   |-NA-27[0.91]<3>{AD 1979}/7/3/5
 |   |-Aug^a%[0.75]<3>{AD 430}/1/3/2
 |-Ex-128[0.85]<2>{AD 250}/14/3/5
     |-Ambst%[0.77]<3>{AD 366}/5/14/5
     |-Ex-116[0.86]<3>{AD 300}/12/14/5
     |   |-it-m*[0.99]<4>{AD 950}/1/12/2
     |   |-it-ar*[0.91]<4>{AD 950}/8/12/4
     |   |-it-b*[0.89]<4>{AD 450}/9/12/6
     |   |-it-t%[0.88]<4>{AD 1000}/3/12/4
     |   |-Ex-109[0.92]<4>{AD 350}/7/12/4
     |       |-vg^ww[1.00]<5>{AD 1889}/0/7/1
     |       |-vg^a[1.00]<5>{AD 400}/0/7/1
     |       |-vg^s[0.99]<5>{AD 1590}/1/7/2
     |       |-vg^b[0.76]<5>{AD 400}/19/7/8
     |       |-vg^cl[0.95]<5>{AD 1592}/4/7/3
     |       |-vg^st[0.96]<5>{AD 1994}/3/7/4
     |-Ex-126[1.00]<3>{AD 350}/0/14/1
         |-Ex-123[0.91]<4>{AD 450}/8/0/5
         |   |-D06^2[0.85]<5>{AD 850}/13/8/7
         |   |-H015*%[0.92]<5>{AD 550}/1/8/2
         |   |-Ex-117[0.95]<5>{AD 500}/5/8/4
         |       |-D06^c[1.00]<6>{AD 900}/0/5/1
         |       |-D06*[0.91]<6>{AD 550}/8/5/5
         |       |-D06^1[0.95]<6>{AD 600}/4/5/4
         a     b
```

```
a  b
|-Ex-122[0.91]<4>{AD 400}/8/0/4
   |-it-d[0.82]<5>{AD 450}/17/8/5
   |-Ex-119[1.00]<5>{AD 500}/0/8/1
      |-it-f*[0.90]<6>{AD 550}/9/0/7
      |-Ex-107[1.00]<6>{AD 750}/0/0/1
         |-G012*[1.00]<7>{AD 850}/0/0/1
         |-it-g*[0.96]<7>{AD 800}/4/0/3
         |-it-g^c[1.00]<7>{AD 800}/0/0/1
         |-Ex-106[0.99]<7>{AD 800}/1/0/2
            |-F*[1.00]<8>{AD 850}/0/1/1
            |-G012^c[1.00]<8>{AD 900}/0/1/1
```

Appendix D

List of Autographic Readings

The Book of 1 Thessalonians

This appendix contains the list of autographic readings for the Greek text of the Book of 2 Corinthians as determined by the genealogical method described in this book. The list contains the index of each place of variation (variation unit), the associated reference, the Greek reading at that place, and the probability that the reading is autographic.

Var Unit	Reference	Reading	Prob.
1.1	1:1,1.1	⊤ ομιτ	1.00
2.1	1:1,2.1	⊤ ομιτ	0.67
3.2	1:2,1.2	υμων	0.67
4.1	1:4,1.1	○του	0.67
5.1	1:5,1.1	⌜ημων	1.00
6.1	1:5,2.1	⌜εἰς	1.00
7.1	1:5,3.1	○ἐν	1.00
8.1	1:5,4.1	○ἐν	0.67
9.1	1:6,1.1	⊤ ομιτ	1.00
10.2	1:7,1.2	τυπους	1.00
11.1	1:8,1.1	□ἐν τη	1.00
12.1	1:8,2.1	⌜ἀλλ’	0.67
13.1	1:9,1.1	⌜ημων	1.00
14.1	1:10,1.1	⌜ἀναμενειν	1.00
15.1	1:10,2.1	○των	1.00
16.1	1:10,3.1	⌜ἐκ	0.67
17.1	2:3,1.1	⌜οὐδε	1.00
18.2	2:4,1.2	τω	1.00
19.1	2:5,1.1	○ἐν	0.67
20.2	2:7,1.2	⸗ ηπιοι	0.67
21.1	2:8,1.1	⌜ομειρομενοι	1.00
22.1	2:8,2.1	⌜εὐδοκουμεν	1.00
23.1	2:8,3.1	⌜του θεου	1.00
24.1	2:8,4.1	⌜ἐγενηθητε	0.67
25.1	2:9,1.1	⊤ ομιτ	1.00
26.1	2:10,1.1	⌜πιστευουσιν	1.00
27.1	2:12,1.1	○υμας	1.00
28.1	2:12,2.1	⌜καλουντος	0.67
29.2	2:13,1.2	○ ομιτ	0.67
30.1	2:13,2.1	⌜ἐστιν ἀληθως	0.67
31.1	2:15,1.1	⊤ ομιτ	0.67
32.1	2:16,1.1	□⌜εφθασεν δε ἐπ’ αὐτους η ὀργη ⊤ εἰς τελος	1.00
33.1	2:16,2.1	⌜εφθασεν	1.00
34.1	2:16,3.1	⊤ ομιτ	1.00
35.1	2:19,1.1	⌜καυχησεως	1.00
36.1	3:1,1.1	⌜Διο	1.00
37.3	3:2,1.3	κ. διακονον του θεου	0.67
38.1	3:2,2.1	⊤ ομιτ	1.00
39.1	3:2,3.1	⌜υπερ	0.67
40.1	3:3,1.1	⌜μηδενα σαινεσθαι	1.00

41.1	3:5,1.1	ˢπιστιν υμων˃˒	1.00
42.1	3:7,1.1	˂ ομιτ	1.00
43.1	3:8,1.1	⌜στηκετε	1.00
44.1	3:9,1.1	⌜θεω	1.00
45.1	3:9,2.1	⌜θεου	0.67
46.1	3:13,1.1	⌜ἀμεμπτους	1.00
47.1	3:13,2.1	⌜αγιωσυνη	1.00
48.2	3:13,3.2	° ομιτ	0.67
49.1	4:1,1.1	°ουν	1.00
50.1	4:1,2.1	°ινα	0.67
51.1	4:1,3.1	□καθως και περιπατειτε	1.00
52.1	4:3,1.1	⌜της	1.00
53.1	4:8,1.1	°και	1.00
54.2	4:8,2.2	δοντα	0.67
55.1	4:8,3.1	⌜υμας	1.00
56.1	4:9,1.1	⌜εχετε	0.67
57.1	4:9,2.1	⌜γραφειν	1.00
58.1	4:10,1.1	˂ ομιτ	1.00
59.1	4:10,2.1	°τους	1.00
60.1	4:11,1.1	°ἰδιαις	0.67
61.1	4:13,1.1	⌜θελομεν	1.00
62.1	4:13,2.1	⌜κοιμωμενων	1.00
63.1	4:13,3.1	°οι	1.00
64.1	4:14,1.1	ˢκαι ο θεος˃˒	1.00
65.1	4:15,1.1	⌜κυριου	1.00
66.1	4:16,1.1	⌜πρωτον	1.00
67.1	4:17,1.1	□οι περιλειπομενοι	1.00
68.1	4:17,2.1	⌜ἀπαντησιν	1.00
69.1	4:17,3.1	⌜συν	1.00
70.1	4:18,1.1	˂ ομιτ	1.00
71.1	5:2,1.1	˂ ομιτ	0.67
72.1	5:3,1.1	˂ ομιτ	0.33
73.1	5:3,2.1	⌜αὐτοις ἐφισταται	1.00
74.1	5:3,3.1	⌜ἐκφυγωσιν	1.00
75.1	5:4,1.1	⌜κλεπτης	1.00
76.1	5:5,1.1	⌜ἐσμεν	1.00
77.2	5:6,1.2	και	0.67
78.1	5:7,1.1	⌜μεθυσκομενοι	1.00
79.1	5:9,1.1	ˢημας ο θεος˃˒	1.00
80.1	5:9,2.1	°Χριστου	1.00
81.1	5:10,1.1	⌜υπερ	1.00

82.1	5:10,2.1	⌜ζησωμεν	1.00
83.1	5:12,1.1	⌜προισταμενους	1.00
84.1	5:13,1.1	⌜ηγεισθαι	0.67
85.1	5:13,2.1	⌜υπερεκπερισσου	1.00
86.1	5:13,3.1	⌜εαυτοις	0.67
87.1	5:15,1.1	○και	0.67
88.1	5:21,1.1	○δε	1.00
89.1	5:23,1.1	○ημων	1.00
90.1	5:25,1.1	○και	0.67
91.2	5:27,1.2	ορκ—	1.00
92.1	5:27,2.1	⊤ ομιτ	0.67
93.1	5:28,1.1	⊤ ομιτ	0.67

Appendix E

List of the Places the Lachmann-10 Text

Differs from the NA-27 Text

for the Book of 1 Thessalonians

1:2,1.2	At NA-27 =>	⊤ ομιτ	insert =>	υμων	[0.67]
1:7,1.2	Replace NA-27 =>	⌜τυπον	with =>	τυπους	[1.00]
2:4,1.2	At NA-27 =>	⊤ ομιτ	insert =>	τω	[1.00]
2:7,1.2	Replace NA-27 =>	⌜νηπιοι	with =>	⌢ ηπιοι	[0.67]
2:13,1.2	Omit NA-27 =>	○Λαι			[0.67]
3:2,1.3	Replace NA-27 =>	⌜και συνεργον του θεου	with =>	κ. διακονον του θεου	[0.67]
3:13,3.2	Omit NA-27 =>	○ἀμην			[0.67]
4:8,2.2	Replace NA-27 =>	⌜διδοντα	with =>	δοντα	[0.67]
5:6,1.2	At NA-27 =>	⊤ ομιτ	insert =>	και	[0.67]
5:27,1.2	Replace NA-27 =>	⌜Ἐνορκιζω	with =>	ορκ—	[1.00]

Appendix F

Places Where the Non-Autographic Variants Were Initiated Only Once in the Textual History of 1 Thessalonians Arranged in Order by Reference

This appendix lists the place in the genealogical history of the text of the Book of 1 Thessalonians where each non-original textual variant was first initiated, arranged in order by reference. For each variant, the table lists (1) the place of variation in the text where the variation occurred, (2) the associated reference, (3) the exemplar or extant witness in which the variant was initiated, and (4) the text of the variant. For example, the following line means:

16.2	1:10,3.2	Ex-114#	απο

(1) 16.2 refers to the second variant at variation unit 16.
(2) 1:10,3.2 is the reference where this place of variation occurs: chapter 1, verse 10, the third place of variation in this verse, the second variant there.
(3) This variant was initiated in exemplar Ex-114#.
(4) The variant reads: απο (from)
(5) Since the variant was first initiated in an exemplar, one can presume that the variant was inherited by all of the descendants of that exemplar (Ex-114#) unless otherwise altered in one of its subsequent branches.

The following line means:

5.3	1:5,1.3	01*	του θεου ημων

(1) 5.3 refers to the third variant at variation unit 5.
(2) 1:5,1.3 is the reference where this place of variation occurs: chapter 1, verse 5, the first place of variation in this verse, the third variant there.
(3) This variant was initiated in terminal witness MS 01*
(4) The variant reads: του θεου ημων (our God)

Since the variant was initiated in a terminal witness, it is a singularity with no inheritance.

The following line means:

6.2	1:5,2.2	Ex-132$	προς

(1) 6.2 refers to the second variant at variation unit 6.
(2) 1:5,2.2 is the reference where this place of variation occurs: chapter 1, verse 5, the second place of variation in this verse, the second variant there.
(3) This variant was initiated in exemplar Ex-132$, a virtual exemplar, a source of mixture.
(4) The variant reads: προς (toward)

VarUnit	Reference	Source	Reading
1.2	1:1,1.2	Ex-132$	ημων
2.2	1:1,2.2	Ex-114#	απο θεου πατρος ημων και κυριου Ιησου Χριστου
3.1	1:2,1.1	Ex-134$	⊤ ομιτ
4.2	1:4,1.2	Ex-114#	○ ομιτ
5.2	1:5,1.2	C*%	του θεου
5.3	1:5,1.3	01*	του θεου ημων
6.2	1:5,2.2	Ex-132$	προς
6.3	1:5,2.3	P025*%	εν
7.2	1:5,3.2	Ex-132$	○ ομιτ
8.2	1:5,4.2	Ex-134$	○ ομιτ
9.2	1:6,1.2	Ex-132$	και
10.1	1:7,1.1	Ex-132$	⌜τυπον
11.2	1:8,1.2	Ex-133$	□ ομιτ
12.2	1:8,2.2	Ex-134$	αλλα και
13.2	1:9,1.2	Ex-134$	υμων
14.2	1:10,1.2	P^46*%	υπομ—
15.2	1:10,2.2	Ex-132$	○ ομιτ
16.2	1:10,3.2	Ex-114#	απο
17.2	2:3,1.2	Ex-132$	ουτε
18.1	2:4,1.1	Ex-132$	⊤ ομιτ
19.2	2:5,1.2	Ex-134$	○ ομιτ
20.1	2:7,1.1	Ex-134$	⌜νηπιοι
21.2	2:8,1.2	Ex-132$	ιμειρ—
22.2	2:8,2.2	Ex-132$	ευδοκησαμεν
23.2	2:8,3.2	Ex-132$	τ. Χριστου
23.3	2:8,3.3	Ex-133$	—
24.2	2:8,4.2	Ex-114#	γεγενησθε
25.2	2:9,1.2	Ex-132$	γαρ
26.2	2:10,1.2	Ex-132$	—ευσασιν
27.2	2:12,1.2	Ex-132$	○ ομιτ
28.2	2:12,2.2	Ex-114#	καλεσαντος
29.1	2:13,1.1	Ex-130#	○Λαι
30.2	2:13,2.2	Ex-134$	⸗ 2 1
30.3	2:13,2.3	01*	1″00
31.2	2:15,1.2	Ex-134$	ιδιους
32.2	2:16,1.2	vg^b	□ ομιτ
33.2	2:16,2.2	Ex-132$	—ακεν
34.2	2:16,3.2	Ex-132$	του θεου
35.2	2:19,1.2	Ex-132$	αγαλλιασεως
36.2	3:1,1.2	B*	διοτι
37.1	3:2,1.1	Ex-132$	⌜και συνεργον του θεου
37.2	3:2,1.2	Ex-133$	1″02

37.4	3:2,1.4	Ex-134$	κ. διακ. τ. θ. και συνερ. ημων
37.5	3:2,1.5	Ex-122	διακ. κ. συνερ. τ. θ.
38.2	3:2,2.2	Ex-132$	υμας
39.2	3:2,3.2	Ex-134$	περι
40.2	3:3,1.2	Ex-122	μηδενα σιαινεσθαι
41.2	3:5,1.2	Ex-132$	2″01
42.2	3:7,1.2	A*	και
43.2	3:8,1.2	Ex-132$	στηκητε
44.2	3:9,1.2	Ex-132$	κυριω
45.2	3:9,2.2	Ex-134$	κυριου
46.2	3:13,1.2	Ex-132$	—πτως
47.2	3:13,2.2	A*	δικαιοσυνη
48.1	3:13,3.1	Ex-134$	°ἀμην
49.2	4:1,1.2	Ex-132$	° ομιτ
50.2	4:1,2.2	Ex-114#	° ομιτ
51.2	4:1,3.2	Ex-132$	□ ομιτ
52.2	4:3,1.2	Ex-132$	πασης
52.3	4:3,1.3	Ex-133$	παση της
53.2	4:8,1.2	Ex-133$	° ομιτ
54.1	4:8,2.1	Ex-134$	⌜διδοντα
55.2	4:8,3.2	Ex-132$	ημας
56.2	4:9,1.2	Ex-134$	εχομεν
56.3	4:9,1.3	Ex-133$	ειχομεν
57.2	4:9,2.2	Ex-134$	—φεσθαι
58.2	4:10,1.2	B*	και
59.2	4:10,2.2	Ex-133$	° ομιτ
60.2	4:11,1.2	Ex-130#	° ομιτ
61.2	4:13,1.2	Ex-134$	θελω
62.2	4:13,2.2	Ex-132$	κεκοιμημενων
63.2	4:13,3.2	Ex-122	° ομιτ
64.2	4:14,1.2	Ex-134$	2″01
65.2	4:15,1.2	B*	Ιησου
66.2	4:16,1.2	Ex-132$	πρωτοι
67.2	4:17,1.2	Ex-132$	□ ομιτ
68.2	4:17,2.2	Ex-132$	υπαντ—
69.2	4:17,3.2	B*	εν
70.2	4:18,1.2	1:739^c	του πνευματος
71.2	5:2,1.2	Ex-114#	η
72.2	5:3,1.2	Ex-130#	δε
72.3	5:3,1.3	Ex-114#	γαρ
73.2	5:3,2.2	Ex-132$	επιστ— αυτ.
73.3	5:3,2.3	Ex-134$	αυτ. φανησεται
74.2	5:3,3.2	Ex-128	εκφευξονται

75.2	5:4,1.2	Ex-132$	κλεπτας
76.2	5:5,1.2	εστε
77.1	5:6,1.1	⊤ ομιτ
78.2	5:7,1.2	B*	μεθυοντες
79.2	5:9,1.2	Ex-132$	2”01
80.2	5:9,2.2	Ex-132$	○ ομιτ
81.2	5:10,1.2	Ex-132$	⸗ περι
82.2	5:10,2.2	Ex-132$	ζωμεν
82.3	5:10,2.3	A*	ζησομεν
83.2	5:12,1.2	Ex-112	προι[στανομ—
84.2	5:13,1.2	Ex-134$	—σθε
85.2	5:13,2.2	Ex-132$	⸗ —σσως
85.3	5:13,2.3	P^30%	εκπερισσου
86.2	5:13,3.2	Ex-130#	αυτοις
87.2	5:15,1.2	Ex-134$	○ ομιτ
88.2	5:21,1.2	Ex-132$	○ ομιτ
89.2	5:23,1.2	Irlat^a%	○ ομιτ
90.2	5:25,1.2	Ex-129#	○ ομιτ
91.1	5:27,1.1	Ex-132$	⌜’Ενορκιζω
92.2	5:27,2.2	Ex-134$	αγιοις
93.2	5:28,1.2	Ex-114#	αμην

Appendix G

Places Where the Non-Autographic Variants Were Initiated in the Textual History of 1 Thessalonians Arranged in Order by Witness

This appendix lists the place in the genealogical history of the text of the Book of 1 Thessalonians where each non-original textual variant was first initiated, arranged in order by witness. For each witness, the table lists (1) the exemplar or extant witness in which the variant was initiated, (2) the place of variation in the text where the variation occurred, (3) the associated reference, (4) the text of the variant. For example, the following line means:

01*	5.3	1:5,1.3	του θεου ημων

(1) This variant was initiated in papyrus P^46*.
(2) 129.2 refers to the second variant at variation unit 129.
(3) 8:6,1.2 is the reference where this place of variation occurs: chapter 8, verse 6, the first place of variation in this verse, the second variant there.
(4) The variant reads: νυν (now)

Since the variant was first initiated in a manuscript, it a singularity having no prior history.

The following line means:

Ex-114#	16.2	1:10,3.2	απο

(1) This variant was initiated in Exemplar Ex-114#.
(2) 16.2 refers to the second variant at variation unit 16.
(3) 1:10,3.2 is the reference where this place of variation occurs: chapter 1 verse 10, the third place of variation in this verse, the second variant there.
(4) The variant reads: απο (from)

Since the variant was first initiated in an exemplar, one can presume that the variant was inherited by all of the descendants of that exemplar (Ex-114#) unless otherwise altered in one of its subsequent branches.

List of Places Where Non-Autographic Variants Were Initiated in the Genealogical History, Arranged in Order by Witness
Total = 111

P^30%	85.3	5:13,2.3	εκπερισσου
Total for P^30% = 1			
P^46*%	14.2	1:10,1.2	υπομ—
Total for P^46*% = 1			
01*	5.3	1:5,1.3	του θεου ημων
01*	30.3	2:13,2.3	1
Total for 01* = 2			
A*	4.1	1:4,1.1	○του
A*	29.1	2:13,1.1	○Λαι
A*	42.2	3:7,1.2	και
A*	47.2	3:13,2.2	δικαιοσυνη
A*	82.3	5:10,2.3	ζησομεν
A*	83.2	5:12,1.2	προι[στανομ—
Total for A* = 6			
B*	36.2	3:1,1.2	διοτι
B*	58.2	4:10,1.2	και
B*	65.2	4:15,1.2	Ιησου
B*	69.2	4:17,3.2	εν
B*	78.2	5:7,1.2	μεθυοντες
Total for B* = 5			
C*%	5.2	1:5,1.2	του θεου
C*%	18.1	2:4,1.1	⊤ ομιτ
Total for C*% = 2			
P025*%	6.3	1:5,2.3	εν
Total for P025*% = 1			
1739^c	70.2	4:18,1.2	του πνευματος
Total for 1739^c = 1			

vg^b	32.2	2:16,1.2	□ ομιτ
Total for vg^b = 1			
it-r%	11.2	1:8,1.2	□ ομιτ
Total for it-r% = 1			
Irlat^a%	89.2	5:23,1.2	○ ομιτ
Total for Irlat^a% = 1			
Ex-112	83.2	5:12,1.2	προι[στανομ—
Total for Ex-112 = 1			
Ex-114#	2.2	1:1,2.2	απο θεου πατρος ημων και κυριου Ιησου Χριστου
Ex-114#	4.2	1:4,1.2	○ ομιτ
Ex-114#	16.2	1:10,3.2	απο
Ex-114#	24.2	2:8,4.2	γεγενησθε
Ex-114#	28.2	2:12,2.2	καλεσαντος
Ex-114#	50.2	4:1,2.2	○ ομιτ
Ex-114#	71.2	5:2,1.2	η
Ex-114#	72.3	5:3,1.3	γαρ
Ex-114#	93.2	5:28,1.2	αμην
Total for Ex-114# = 9			
Ex-122	37.5	3:2,1.5	διακ. κ. συνερ. τ. θ.
Ex-122	40.2	3:3,1.2	μηδενα σιαινεσθαι
Ex-122	63.2	4:13,3.2	○ ομιτ
Total for Ex-122 = 3			
Ex-128	74.2	5:3,3.2	εκφευξονται
Total for Ex-128 = 1			
Ex-129#	90.2	5:25,1.2	○ ομιτ
Total for Ex-129# = 1			
Ex-130#	29.1	2:13,1.1	○Λαι
Ex-130#	60.2	4:11,1.2	○ ομιτ
Ex-130#	72.2	5:3,1.2	δε
Ex-130#	86.2	5:13,3.2	αυτοις

Total for Ex-130# = 4			
Ex-132$	1.2	1:1,1.2	ημων
Ex-132$	6.2	1:5,2.2	προς
Ex-132$	7.2	1:5,3.2	○ ομιτ
Ex-132$	9.2	1:6,1.2	και
Ex-132$	10.1	1:7,1.1	⌜τυπον
Ex-132$	15.2	1:10,2.2	○ ομιτ
Ex-132$	17.2	2:3,1.2	ουτε
Ex-132$	18.1	2:4,1.1	⊤ ομιτ
Ex-132$	21.2	2:8,1.2	ιμειρ—
Ex-132$	22.2	2:8,2.2	ευδοκησαμεν
Ex-132$	23.2	2:8,3.2	τ. Χριστου
Ex-132$	25.2	2:9,1.2	γαρ
Ex-132$	26.2	2:10,1.2	—ευσασιν
Ex-132$	27.2	2:12,1.2	○ ομιτ
Ex-132$	33.2	2:16,2.2	—ακεν
Ex-132$	34.2	2:16,3.2	του θεου
Ex-132$	35.2	2:19,1.2	αγαλλιασεως
Ex-132$	37.1	3:2,1.1	⸢και συνεργον του θεου
Ex-132$	38.2	3:2,2.2	υμας
Ex-132$	41.2	3:5,1.2	2 1
Ex-132$	43.2	3:8,1.2	στηκητε
Ex-132$	44.2	3:9,1.2	κυριω
Ex-132$	46.2	3:13,1.2	—πτως
Ex-132$	49.2	4:1,1.2	○ ομιτ
Ex-132$	51.2	4:1,3.2	□ ομιτ
Ex-132$	52.2	4:3,1.2	πασης
Ex-132$	55.2	4:8,3.2	ημας
Ex-132$	62.2	4:13,2.2	κεκοιμημενων
Ex-132$	66.2	4:16,1.2	πρωτοι
Ex-132$	67.2	4:17,1.2	□ ομιτ
Ex-132$	68.2	4:17,2.2	υπαντ—
Ex-132$	73.2	5:3,2.2	επιστ— αυτ.
Ex-132$	75.2	5:4,1.2	κλεπτας
Ex-132$	79.2	5:9,1.2	2 1
Ex-132$	80.2	5:9,2.2	○ ομιτ
Ex-132$	81.2	5:10,1.2	⸣ περι
Ex-132$	82.2	5:10,2.2	ζωμεν

Ex-132$	85.2	5:13,2.2	ˆ —σσως
Ex-132$	88.2	5:21,1.2	○ ομιτ
Ex-132$	91.1	5:27,1.1	⌜’Ενορκιζω
Total for Ex-132$ = 40			
Ex-133$	11.2	1:8,1.2	□ ομιτ
Ex-133$	23.3	2:8,3.3	—
Ex-133$	37.2	3:2,1.2	1 2
Ex-133$	52.3	4:3,1.3	παση της
Ex-133$	53.2	4:8,1.2	○ ομιτ
Ex-133$	56.3	4:9,1.3	ειχομεν
Ex-133$	59.2	4:10,2.2	○ ομιτ
Ex-133$	76.2	5:5,1.2	εστε
Total for Ex-133$ = 8			
Ex-134$	3.1	1:2,1.1	⊤ ομιτ
Ex-134$	8.2	1:5,4.2	○ ομιτ
Ex-134$	12.2	1:8,2.2	αλλα και
Ex-134$	13.2	1:9,1.2	υμων
Ex-134$	19.2	2:5,1.2	○ ομιτ
Ex-134$	20.1	2:7,1.1	⌜νηπιοι
Ex-134$	30.2	2:13,2.2	ˆ 2 1
Ex-134$	31.2	2:15,1.2	ιδιους
Ex-134$	37.4	3:2,1.4	κ. διακ. τ. θ. και συνερ. ημων
Ex-134$	39.2	3:2,3.2	περι
Ex-134$	45.2	3:9,2.2	κυριου
Ex-134$	48.1	3:13,3.1	○ἀμην
Ex-134$	54.1	4:8,2.1	⌜διδοντα
Ex-134$	56.2	4:9,1.2	εχομεν
Ex-134$	57.2	4:9,2.2	—φεσθαι
Ex-134$	61.2	4:13,1.2	θελω
Ex-134$	64.2	4:14,1.2	2 1
Ex-134$	73.3	5:3,2.3	αυτ. φανησεται
Ex-134$	77.1	5:6,1.1	⊤ ομιτ
Ex-134$	84.2	5:13,1.2	—σθε
Ex-134$	87.2	5:15,1.2	○ ομιτ
Ex-134$	92.2	5:27,2.2	αγιοις

Appendix H

Every Place Where a Variant is Initiated

in the Textual History of 1 Thessalonians

Arranged in Order by Reference

This appendix lists every place a variant is introduced into the textual history of 2 Corinthians either initially or later by mixture. The information is arranged in order by reference as follows: (1) place of variation, (2) reference, (3) witness(es) where variant was initiated. Those witnesses enclosed in square brackets [] are places where the variant was introduced by mixture; those not enclosed are where the variant first originated. The number enclosed in <>; is the generation of the preceding witness. For example, the following line means:

7.1	1:5,3.1	Autograph;

(1) 7.1 refers to the first variant in variation unit 7.
(2) 1:5,3.1 is the reference where this place of variation occurs: chapter 1, verse 5, the third place of variation in this verse, the first variant there.
(3) *Autograph* means that the variant was initiated in the autograph and nowhere else.

Since the variant was first initiated in an exemplar, one can presume that the variant was inherited by all of the descendants of the autograph unless otherwise altered in one of its subsequent branches.

The following line means:

29.1	2:13,1.1	A*<3>; [044*]<3>; [NA-27]<3>; [Ambst%]<3>; [Ex-111]<3>; Ex-130#<1>;

(1) 29.1 refers to the first variant in variation unit 29.
(2) 2:13,1.1 is the reference where this place of variation occurs: chapter 2, verse 13, the first place of variation in this verse, the first variant there.
(3) The variant was first initiated in exemplar Ex-130#, and subsequently initiated by mixture in A*<3>; [044*]<3>; [NA-27]<3>; [Ambst%]<3>; [Ex-111]<3>.
(4) Since the variant was first initiated in an exemplar, one may safely assume that the variant was inherited by all of the descendants of that exemplar unless otherwise altered in one of its subsequent branches.

1.1	1:1,1.1	Autograph;
1.2	1:1,1.2	[A*]<3>; [81*]<3>; [629*]<3>; [vg^s]<5>; [it-ar*]<4>; [it-r%]<3>; [sa^b%]<3>; Ex-132$<1>;
2.1	1:1,2.1	[629*]<3>; Autograph;
2.2	1:1,2.2	[A*]<3>; [6]<7>; [33*]<5>; [vg^b]<5>; [it-d]<5>; [bo^a]<3>; [Ex-112]<2>; Ex-114#<1>; [Ex-123]<4>;
3.1	1:2,1.1	[A*]<3>; [0278*]<3>; [323*]<5>; [vg^st]<5>; [NA-27]<3>; [Ex-111]<3>; [Ex-130#]<1>; [Ex-132$]<1>; Ex-134$<1>;
3.2	1:2,1.2	[01^2]<3>; [C*%]<3>; [it-r%]<3>; [sy^h]<6>; [Ex-108]<4>; Autograph;
4.1	1:4,1.1	A*<3>; [C*%]<3>; [945]<3>; [NA-27]<3>; Autograph;
4.2	1:4,1.2	[6]<7>; Ex-114#<1>; [Ex-120]<4>; [Ex-128]<2>;
5.1	1:5,1.1	Autograph;
5.2	1:5,1.2	C*%<3>;
5.3	1:5,1.3	01*<3>;
6.1	1:5,2.1	[Ex-116]<3>; Autograph;
6.2	1:5,2.2	[A*]<3>; [C^2%]<2>; [0278*]<3>; [Ex-128]<2>; Ex-132$<1>;
6.3	1:5,2.3	P025*%<2>;
7.1	1:5,3.1	Autograph;
7.2	1:5,3.2	[vg^b]<5>; [it-r%]<3>; [Ex-112]<2>; [Ex-120]<4>; Ex-132$<1>;
8.1	1:5,4.1	[C^2%]<2>; [L020*%]<3>; [044^c%]<2>; [6]<7>; [630%]<2>; [1505*%]<2>; [sy^h]<6>; [Ex-125]<3>; Autograph;
8.2	1:5,4.2	[A*]<3>; [C*%]<3>; [33*]<5>; [326*]<2>; [945]<3>; [vg^st]<5>; [Ex-115]<5>; [Ex-130#]<1>; [Ex-132$]<1>; [Ex-133$]<1>; Ex-134$<1>;
9.1	1:6,1.1	Autograph;
9.2	1:6,1.2	[B*]<5>; [vg^b]<5>; Ex-132$<1>;
10.1	1:7,1.1	[it-d]<5>; [it-r%]<3>; [sy^p%]<3>; [NA-27]<3>; [Ex-116]<3>; [Ex-117]<5>; [Ex-127]<2>; Ex-132$<1>;
10.2	1:7,1.2	[A*]<3>; [C*%]<3>; [sy^h]<6>; Autograph;
11.1	1:8,1.1	[A*]<3>; [C*%]<3>; [2464*]<5>; [sy^h]<6>; [NA-27]<3>; Autograph;
11.2	1:8,1.2	[K*%]<2>; [614*]<5>; [629*]<3>; [630%]<2>; [1505*%]<2>; [TR]<3>; [vg^b]<5>; it-r%<3>; [Ex-125]<3>; Ex-133$<1>;
12.1	1:8,2.1	[A*]<3>; [C*%]<3>; [it-r%]<3>; [NA-27]<3>; Autograph;
12.2	1:8,2.2	[D06^2]<5>; [0278*]<3>; [6]<7>; [vg^cl]<5>; [Ambst%]<3>; [Ex-114#]<1>; [Ex-132$]<1>; Ex-134$<1>;
13.1	1:9,1.1	[TR]<3>; [Ex-111]<3>; Autograph;
13.2	1:9,1.2	[B*]<5>; [81*]<3>; [323*]<5>; [614*]<5>; [630%]<2>; [vg^b]<5>; [it-ar*]<4>; [it-d]<5>; [sa^b%]<3>; [bo^b%]<3>; [Ex-113]<2>; [Ex-132$]<1>; [Ex-133$]<1>; Ex-134$<1>;
14.1	1:10,1.1	Autograph;
14.2	1:10,1.2	P^46*%<3>;
15.1	1:10,2.1	[Ex-111]<3>; Autograph;
15.2	1:10,2.2	[P^46*%]<3>; [A*]<3>; [C*%]<3>; [K*%]<2>; [323*]<5>; [1881*]<7>; [2464*]<5>; [Eus^a%]<2>; [Ex-113]<2>; Ex-132$<1>;
16.1	1:10,3.1	Autograph;
16.2	1:10,3.2	[C*%]<3>; [044*]<3>; [6]<7>; [it-r%]<3>; Ex-114#<1>; [Ex-128]<2>;

17.1	2:3,1.1	[A*]<3>; [C*%]<3>; [629*]<3>; [NA-27]<3>; Autograph;
17.2	2:3,1.2	[D06^2]<5>; [Ex-113]<2>; Ex-132$<1>;
18.1	2:4,1.1	[01*]<3>; [B*]<5>; C*%<3>; [P025*%]<2>; [it-d]<5>; [NA-27]<3>; [Cl^a%]<4>; [Ex-117]<5>; Ex-132$<1>;
18.2	2:4,1.2	[A*]<3>; Autograph;
19.1	2:5,1.1	[365%]<4>; [Ex-113]<2>; [Ex-115]<5>; Autograph;
19.2	2:5,1.2	[01^2]<3>; [Ex-114#]<1>; [Ex-125]<3>; [Ex-132$]<1>; Ex-134$<1>;
20.1	2:7,1.1	[01*]<3>; [B*]<5>; [I%]<3>; [P025*%]<2>; [104*%]<3>; [326^c]<2>; [Ex-129#]<1>; [Ex-132$]<1>; Ex-134$<1>;
20.2	2:7,1.2	[A*]<3>; [D06^2]<5>; [0278*]<3>; [vg^st]<5>; [sa^a]<3>; Autograph;
21.1	2:8,1.1	[6]<7>; [Ex-111]<3>; Autograph;
21.2	2:8,1.2	[0278*]<3>; [323*]<5>; [630%]<2>; [1505*%]<2>; [Ex-110]<6>; [Ex-113]<2>; Ex-132$<1>;
22.1	2:8,2.1	Autograph;
22.2	2:8,2.2	[33*]<5>; [81*]<3>; [it-f*]<6>; [Ex-109]<4>; Ex-132$<1>;
23.1	2:8,3.1	Autograph;
23.2	2:8,3.2	[Eus^a%]<2>; [Hier^a%]<2>; Ex-132$<1>;
23.3	2:8,3.3	[255]<5>; [Or^lat^a%]<2>; Ex-133$<1>;
24.1	2:8,4.1	Autograph;
24.2	2:8,4.2	[044*]<3>; [6]<7>; Ex-114#<1>;
25.1	2:9,1.1	Autograph;
25.2	2:9,1.2	[D06^2]<5>; [Ex-113]<2>; Ex-132$<1>;
26.1	2:10,1.1	Autograph;
26.2	2:10,1.2	[P^65%]<2>; [it-d]<5>; [it-f*]<6>; [it-g*]<7>; [Ex-116]<3>; Ex-132$<1>;
27.1	2:12,1.1	Autograph;
27.2	2:12,1.2	[vg^b]<5>; [Ex-112]<2>; Ex-132$<1>;
28.1	2:12,2.1	[sy^p%]<3>; [NA-27]<3>; [Ex-113]<2>; Autograph;
28.2	2:12,2.2	[104*%]<3>; [945]<3>; [1505*%]<2>; [2464*]<5>; [it-d]<5>; [it-f*]<6>; [it-g*]<7>; [sy^h]<6>; [Spec%]<4>; [Ex-112]<2>; Ex-114#<1>; [Ex-116]<3>; [Ex-124]<2>;
29.1	2:13,1.1	A*<3>; [044*]<3>; [NA-27]<3>; [Ambst%]<3>; [Ex-111]<3>; Ex-130#<1>;
29.2	2:13,1.2	[33*]<5>; [sy^p%]<3>; [Ex-108]<4>; Autograph;
30.1	2:13,2.1	[A*]<3>; [6]<7>; [sy^h]<6>; [sy^p%]<3>; [NA-27]<3>; [Ex-113]<2>; Autograph;
30.2	2:13,2.2	[01^1]<3>; [Ex-114#]<1>; [Ex-125]<3>; [Ex-132$]<1>; Ex-134$<1>;
30.3	2:13,2.3	01*<3>;
31.1	2:15,1.1	[629*]<3>; Autograph;
31.2	2:15,1.2	[D06^1]<6>; [044*]<3>; [sy^h]<6>; [Ex-114#]<1>; [Ex-132$]<1>; Ex-134$<1>;
32.1	2:16,1.1	Autograph;
32.2	2:16,1.2	vg^b<5>;
33.1	2:16,2.1	Autograph;
33.2	2:16,2.2	[B*]<5>; [104*%]<3>; [1505*%]<2>; [Ex-117]<5>; [Ex-121]<2>; Ex-132$<1>;
34.1	2:16,3.1	Autograph;
34.2	2:16,3.2	[629*]<3>; [Ex-128]<2>; Ex-132$<1>;

35.1	2:19,1.1	Autograph;
35.2	2:19,1.2	[A*]<3>; [Tert^a%]<2>; Ex-132$<1>;
36.1	3:1,1.1	Autograph;
36.2	3:1,1.2	B*<5>;
37.1	3:2,1.1	[I%]<3>; [it-b*]<4>; [NA-27]<3>; [Ex-120]<4>; [Ex-128]<2>; Ex-132$<1>;
37.2	3:2,1.2	[B*]<5>; [vg^b]<5>; Ex-133$<1>;
37.3	3:2,1.3	[629*]<3>; [it-d]<5>; [Ex-116]<3>; Autograph;
37.4	3:2,1.4	[D06^2]<5>; [sy^p%]<3>; [Ex-114#]<1>; Ex-134$<1>;
37.5	3:2,1.5	Ex-122<4>;
38.1	3:2,2.1	[A*]<3>; [629*]<3>; [NA-27]<3>; Autograph;
38.2	3:2,2.2	[D06^2]<5>; [vg^b]<5>; [sy^p%]<3>; [Ex-113]<2>; Ex-132$<1>;
39.1	3:2,3.1	[A*]<3>; [NA-27]<3>; Autograph;
39.2	3:2,3.2	[D06^2]<5>; [6]<7>; [Ex-114#]<1>; [Ex-132$]<1>; Ex-134$<1>;
40.1	3:3,1.1	[it-d]<5>; Autograph;
40.2	3:3,1.2	Ex-122<4>;
41.1	3:5,1.1	Autograph;
41.2	3:5,1.2	[B*]<5>; [0278*]<3>; Ex-132$<1>;
42.1	3:7,1.1	Autograph;
42.2	3:7,1.2	A*<3>;
43.1	3:8,1.1	Autograph;
43.2	3:8,1.2	[01*]<3>; [TR]<3>; [it-d]<5>; [Ex-123]<4>; Ex-132$<1>;
44.1	3:9,1.1	Autograph;
44.2	3:9,1.2	[01*]<3>; [D06*]<6>; [vg^b]<5>; [it-ar*]<4>; [it-b*]<4>; [bo^b%]<3>; [Ex-122]<4>; Ex-132$<1>;
45.1	3:9,2.1	Autograph;
45.2	3:9,2.2	[01*]<3>; [6]<7>; [vg^b]<5>; [it-ar*]<4>; [it-b*]<4>; [Ex-114#]<1>; [Ex-132$]<1>; Ex-134$<1>;
46.1	3:13,1.1	[Ex-118]<4>; Autograph;
46.2	3:13,1.2	[0278*]<3>; [1241*%]<2>; [it-d]<5>; [it-f*]<6>; [it-g*]<7>; [Ex-116]<3>; [Ex-127]<2>; Ex-132$<1>;
47.1	3:13,2.1	Autograph;
47.2	3:13,2.2	A*<3>;
48.1	3:13,3.1	[A*]<3>; [365%]<4>; [629*]<3>; [bo^a]<3>; [NA-27]<3>; [Ex-109]<4>; [Ex-117]<5>; [Ex-130#]<1>; [Ex-132$]<1>; Ex-134$<1>;
48.2	3:13,3.2	[01^2]<3>; [vg^b]<5>; [Ex-125]<3>; Autograph;
49.1	4:1,1.1	Autograph;
49.2	4:1,1.2	[629*]<3>; [630%]<2>; [1175*%]<2>; [1739*]<6>; [vg^b]<5>; [sy^p%]<3>; [bo^b%]<3>; [Ex-120]<4>; Ex-132$<1>;
50.1	4:1,2.1	Autograph;
50.2	4:1,2.2	[A*]<3>; [D06^2]<5>; [044*]<3>; [Ex-112]<2>; Ex-114#<1>; [Ex-115]<5>;
51.1	4:1,3.1	[629*]<3>; Autograph;

51.2	4:1,3.2	[D06^2]<5>; [044*]<3>; [sy^p%]<3>; [Ex-113]<2>; Ex-132$<1>;
52.1	4:3,1.1	Autograph;
52.2	4:3,1.2	[01^2]<3>; [044*]<3>; [104*%]<3>; [365%]<4>; Ex-132$<1>;
52.3	4:3,1.3	[it-f*]<6>; [Ex-106]<7>; Ex-133$<1>;
53.1	4:8,1.1	[sa^b%]<3>; [NA-27]<3>; [Cl^a%]<4>; [Ex-115]<5>; Autograph;
53.2	4:8,1.2	[D06^2]<5>; [I%]<3>; [0278*]<3>; [614*]<5>; [1739*]<6>; [it-b*]<4>; [it-t%]<4>; [Ambst%]<3>; [Ex-124]<2>; [Ex-125]<3>; Ex-133$<1>;
54.1	4:8,2.1	[K*%]<2>; [1241*%]<2>; [it-t%]<4>; [sy^p%]<3>; [NA-27]<3>; [Ex-128]<2>; [Ex-130#]<1>; [Ex-132$]<1>; Ex-134$<1>;
54.2	4:8,2.2	[01^2]<3>; [33*]<5>; [Cl^a%]<4>; [Ex-115]<5>; Autograph;
55.1	4:8,3.1	Autograph;
55.2	4:8,3.2	[A*]<3>; [365%]<4>; [1505*%]<2>; [TR]<3>; [vg^cl]<5>; [it-ar*]<4>; [it-f*]<6>; [it-t%]<4>; [Ambr%]<2>; [Spec%]<4>; [Ex-115]<5>; Ex-132$<1>;
56.1	4:9,1.1	[K*%]<2>; [1241*%]<2>; [Ex-123]<4>; [Ex-124]<2>; Autograph;
56.2	4:9,1.2	[01^2]<3>; [D06*]<6>; [104*%]<3>; [365%]<4>; [1505*%]<2>; [Ex-118]<4>; [Ex-129#]<1>; [Ex-132$]<1>; Ex-134$<1>;
56.3	4:9,1.3	[B*]<5>; [I%]<3>; [vg^b]<5>; [it-t%]<4>; Ex-133$<1>;
57.1	4:9,2.1	Autograph;
57.2	4:9,2.2	[H015*%]<5>; [81*]<3>; [Aug^a%]<3>; [Ex-132$]<1>; Ex-134$<1>;
58.1	4:10,1.1	Autograph;
58.2	4:10,1.2	B*<5>;
59.1	4:10,2.1	[vg^b]<5>; [Ex-123]<4>; Autograph;
59.2	4:10,2.2	[01*]<3>; [A*]<3>; [D06*]<6>; [629*]<3>; [Ex-128]<2>; Ex-133$<1>;
60.1	4:11,1.1	[01*]<3>; [33*]<5>; Autograph;
60.2	4:11,1.2	[D06*]<6>; [Ex-121]<2>; [Ex-122]<4>; Ex-130#<1>;
61.1	4:13,1.1	Autograph;
61.2	4:13,1.2	[104*%]<3>; [614*]<5>; [630%]<2>; [1505*%]<2>; [TR]<3>; [l^846]<4>; [vg^b]<5>; [sy^h]<6>; [Aug^b%]<2>; [Ex-132$]<1>; Ex-134$<1>;
62.1	4:13,2.1	[l^846]<4>; [Ex-116]<3>; Autograph;
62.2	4:13,2.2	[044*]<3>; [Ex-110]<6>; [Ex-113]<2>; [Ex-128]<2>; Ex-132$<1>;
63.1	4:13,3.1	[it-d]<5>; Autograph;
63.2	4:13,3.2	Ex-122<4>;
64.1	4:14,1.1	Autograph;
64.2	4:14,1.2	[B*]<5>; [1739*]<6>; [1739^c]<6>; [Ex-132$]<1>; Ex-134$<1>;
65.1	4:15,1.1	Autograph;
65.2	4:15,1.2	B*<5>;
66.1	4:16,1.1	[Ex-123]<4>; Autograph;
66.2	4:16,1.2	[D06*]<6>; [Eus^a%]<2>; [Tert^a%]<2>; [Ex-128]<2>; Ex-132$<1>;
67.1	4:17,1.1	[it-d]<5>; Autograph;
67.2	4:17,1.2	[it-ar*]<4>; [it-b*]<4>; [Ambst%]<3>; [Spec%]<4>; [Tert^a%]<2>; [Ex-122]<4>; Ex-132$<1>;
68.1	4:17,2.1	Autograph;

68.2	4:17,2.2	[D06*]<6>; [Ex-122]<4>; Ex-132$<1>;
69.1	4:17,3.1	Autograph;
69.2	4:17,3.2	B*<5>;
70.1	4:18,1.1	Autograph;
70.2	4:18,1.2	1:739^c<6>;
71.1	5:2,1.1	[NA-27]<3>; Autograph;
71.2	5:2,1.2	[A*]<3>; [Ex-110]<6>; Ex-114#<1>; [Ex-121]<2>;
72.1	5:3,1.1	[P^30%]<2>; [01*]<3>; [L020*%]<3>; [044^c%]<2>; [33*]<5>; [365%]<4>; [630%]<2>; [1175*%]<2>; Autograph;
72.2	5:3,1.2	[it-d]<5>; [Ex-123]<4>; Ex-130#<1>;
72.3	5:3,1.3	[it-ar*]<4>; [Ex-109]<4>; Ex-114#<1>; [Ex-121]<2>;
73.1	5:3,2.1	Autograph;
73.2	5:3,2.2	[B*]<5>; [0226%]<2>; [Ex-116]<3>; Ex-132$<1>;
73.3	5:3,2.3	[it-b*]<4>; [Aug^b%]<2>; [Ex-122]<4>; [Ex-133$]<1>; Ex-134$<1>;
74.1	5:3,3.1	[D06^1]<6>; [D06^2]<5>; [it-d]<5>; [Ex-116]<3>; Autograph;
74.2	5:3,3.2	Ex-128<2>;
75.1	5:4,1.1	Autograph;
75.2	5:4,1.2	[A*]<3>; [B*]<5>; [bo^b%]<3>; Ex-132$<1>;
76.1	5:5,1.1	[Ex-109]<4>; [Ex-123]<4>; Autograph;
76.2	5:5,1.2	[D06*]<6>; [vg^b]<5>; [sy^p%]<3>; [sa^a]<3>; [Ex-128]<2>; Ex-133$<1>;
77.1	5:6,1.1	[A*]<3>; [it-b*]<4>; [it-f*]<6>; [sy^p%]<3>; [NA-27]<3>; [Ex-109]<4>; [Ex-130#]<1>; [Ex-132$]<1>; Ex-134$<1>;
77.2	5:6,1.2	[01^2]<3>; [6]<7>; [vg^cl]<5>; [sy^h]<6>; Autograph;
78.1	5:7,1.1	Autograph;
78.2	5:7,1.2	B*<5>;
79.1	5:9,1.1	Autograph;
79.2	5:9,1.2	[P^30%]<2>; [B*]<5>; Ex-132$<1>;
80.1	5:9,2.1	Autograph;
80.2	5:9,2.2	[P^30%]<2>; [B*]<5>; [vg^b]<5>; [it-b*]<4>; [it-m*]<4>; [sa^a]<3>; Ex-132$<1>;
81.1	5:10,1.1	Autograph;
81.2	5:10,1.2	[01*]<3>; [Ex-120]<4>; Ex-132$<1>;
82.1	5:10,2.1	Autograph;
82.2	5:10,2.2	[D06*]<6>; [it-d]<5>; Ex-132$<1>;
82.3	5:10,2.3	A*<3>;
83.1	5:12,1.1	[NA-27]<3>; Autograph;
83.2	5:12,1.2	A*<3>; Ex-112<2>;
84.1	5:13,1.1	[Ex-110]<6>; [Ex-113]<2>; Autograph;
84.2	5:13,1.2	[B*]<5>; [044*]<3>; [6]<7>; [81*]<3>; [104*%]<3>; [Ex-114#]<1>; [Ex-115]<5>; [Ex-132$]<1>; Ex-134$<1>;
85.1	5:13,2.1	[D06^2]<5>; [Ex-116]<3>; Autograph;
85.2	5:13,2.2	[B*]<5>; [Ex-128]<2>; Ex-132$<1>;

85.3	5:13,2.3	P^30%<2>;
86.1	5:13,3.1	[D06^2]<5>; [L020*%]<3>; [044^c%]<2>; [630%]<2>; [1175*%]<2>; [Ex-125]<3>; Autograph;
86.2	5:13,3.2	[044*]<3>; [1881*]<7>; [2464*]<5>; [pm^b]<5>; [Ex-128]<2>; Ex-130#<1>;
87.1	5:15,1.1	[P^30%]<2>; [01^2]<3>; [B*]<5>; [sy^h]<6>; [NA-27]<3>; [Ex-109]<4>; Autograph;
87.2	5:15,1.2	[A*]<3>; [vg^cl]<5>; [sy^p%]<3>; [Ex-128]<2>; [Ex-130#]<1>; [Ex-132$]<1>; Ex-134$<1>;
88.1	5:21,1.1	[Ex-111]<3>; Autograph;
88.2	5:21,1.2	[01*]<3>; [A*]<3>; [33*]<5>; [81*]<3>; [104*%]<3>; [614*]<5>; [630%]<2>; [pm^a]<4>; [vg^b]<5>; [it-f*]<6>; [sy^p%]<3>; [Ex-113]<2>; Ex-132$<1>;
89.1	5:23,1.1	Autograph;
89.2	5:23,1.2	Irlat^a%<2>;
90.1	5:25,1.1	[0278*]<3>; [it-b*]<4>; [sa^a]<3>; [NA-27]<3>; [Ambst%]<3>; [Ex-123]<4>; Autograph;
90.2	5:25,1.2	[D06^1]<6>; [Ex-112]<2>; [Ex-113]<2>; Ex-129#<1>;
91.1	5:27,1.1	[A*]<3>; [0278*]<3>; [323*]<5>; [945]<3>; [it-d]<5>; [NA-27]<3>; [Ex-116]<3>; [Ex-117]<5>; [Ex-127]<2>; Ex-132$<1>;
91.2	5:27,1.2	Autograph;
92.1	5:27,2.1	[B*]<5>; Autograph;
92.2	5:27,2.2	[01^2]<3>; [A*]<3>; [044*]<3>; [it-ar*]<4>; [bo^a]<3>; [Ex-109]<4>; [Ex-114#]<1>; [Ex-127]<2>; [Ex-132$]<1>; Ex-134$<1>;
93.1	5:28,1.1	Autograph;
93.2	5:28,1.2	[A*]<3>; [D06^1]<6>; [044*]<3>; [1739^c]<6>; [it-d]<5>; [it-f*]<6>; [it-g*]<7>; [sy^h]<6>; [bo^a]<3>; [Ex-112]<2>; Ex-114#<1>; [Ex-116]<3>;

GLOSSARY OF TERMS

Boldfaced words in the following definitions refer to other terms defined in this glossary.

Affinity: the degree to which two **witnesses** to a text have the same readings. Affinity consists of two components: **Quantitative Affinity** and **Genetic Affinity**.

Antiquity: the characteristic of a **reading** being older than the **witness** in which it occurs. An inherited reading has antiquity, that is, it is older than the witness in which it occurs. See **inheritance**. A newly initiated reading lacks antiquity, that is, it is only as old as the witness in which it originated. A reading introduced by mixture is only as old as its age in its source of mixture. In the reconstruction process, the software recognizes the antiquity of a reading by its presence in other witnesses in the active database.

Autograph: The original document written by the hand of its author or by his secretary to whom he dictated its text.

Autographic Text: The words originally written in an original document.

Commonness: A measure of the degree to which **witnesses** to a given text share the same value of a genetic characteristic of the text. See Commonness of Place of Variation and Commonness of Reading.

Commonness of Place of Variation: The degree to which two **witnesses** to a given text have the same **places of variation** regardless of the **readings** at those places—that is, they share a common portion of the text. The Commonness of Place of Variation of A with B = the number of **places of variation** where both A and B have a **reading**, where A and B are **witnesses** to the same text. This measure is important for dealing with fragmentary **witnesses**. Two **witnesses** that both have a complete text have 100% Commonness of Place of Variation.

Commonness of Readings: A measure of the degree to which two **witnesses** to a text have the same **readings**. It is calculated as follows: The Commonness of Readings of A with B = the number of **places of variation** where both A and B have the same **reading**, where A and B are **witnesses** to the same text.

Completeness: A measure of how much of a text a particular **witness** contains. It is calculated as follows: The Completeness of A = (the number of **places of variation** A has of the text) ÷ (the total number of **places of variation** in the text), where A is a **witness** to the text. This measure is important for dealing with fragmentary **witnesses**.

Content: A list of the **places of variation** a **witness** contains, expressed in terms of references (chapter and verse)—that is, that portion of the text the **witness** contains.

Deferred Ambiguity: The principle of deferred ambiguity states that when consensus fails to recover a reading of an exemplar being reconstructed, the sister of that exemplar will have the inherited reading in the next prior generation.

Distribution: the characteristic of a **reading** occurring in more than one text tradition. An original reading occurs in more than one first-generation exemplar. An original reading is expected to have both first-generation distribution and antiquity.

Exemplar: A **witness** from which other **witnesses** have been copied. The software creates exemplars in the process of reconstructing the genealogical history of a text.

Fragment: A **witness** that is missing part of its text due to damage or deterioration.

Genetic Affinity: see **Quantitative Affinity**.

Genetic Dominance: A **reading** has genetic dominance as long as it is inherited by the **descendants** of the exemplar in which it first occurs. It loses genetic dominance at any place in the genetic history of the exemplar in which it occurs where an alternate reading replaces it.

Heredity: That characteristic of a **reading** correctly copied into a daughter **witness** of the **exemplar** in which the reading is found.

Inheritable Variant: A variant initiated by one of the ancestor exemplars of a witness.

Inheritance: That characteristic of a **reading** correctly copied from the parent **exemplar** of the **witness** in which the reading is found. An inherited reading is passed down from prior ancestor exemplars.

Inheritance Persistence: The inheritance persistence of a witness is the ratio of the number inheritable variants to the number of actually inherited ones.

Lectionary: A **manuscript** edited and arranged in sections assigned for reading in the Church at specified times in the liturgical calendar—something like a hymnbook.

Majuscule: A **manuscript** written in all capital letters.

Manuscript: A handwritten copy of a text made from an earlier copy (**exemplar**). The term is sometimes used as a synonym of ***witness***.

Minimal Reading: The reading of a witness that occurs least often in the working database.

Minuscule: A **manuscript** written in lower case characters.

Papyri: Manuscripts copied on paper made from papyrus. They are usually rather early, but mostly fragmentary.

Parent Exemplar: The **manuscript** from which another **manuscript** was directly copied.

Place of Variation: A place in a text where the **witnesses** to the text have different **readings**. In the data base, each place of variation is assigned a sequential index number in order to distinguish them from one another; each one also has assigned to it the chapter and verse where it occurs in the text.

Primary Parent: The **parent exemplar** of a **witness** from which it derives most of its readings, and its place in the tree diagram that maps the genealogical history of the text. A witness has only one primary parent exemplar.

Quantitative Affinity: A measure of the degree to which **witnesses** to a given text are genetically related. The mutual quantitative affinity between two witnesses is the inverse ratio of the number of places the two witnesses have the same readings to the number of places their readings are different.

Reading: At each **place of variation** in a text, the **witnesses** have different words. The words contained in a given witness at a particular **place of variation** constitute the *reading* of that witness at that place. The reading may be a word, phrase, sentence, verse, etc., or nothing at all (an omission).

Recension: A recension is understood to be a **witness** derived from multiple sources and having a significant number of variations from its **primary parent exemplar**. A recension was a deliberate alteration of a text tradition for the purpose of correction or improvement. A recension occurred when a Christian community noted that their Bibles (**manuscripts**) had different **readings**, and there was an attempt to recover the readings of the **autograph**. This likely took place under the authority of the leadership of the community and was carried out by competent scribes. It is possible that in some recensions some of the corrections were made to strengthen the doctrines of the community.

Secondary Descendant: A descendant of a **secondary parent** functioning as a source of mixture for the given descendant.

Secondary Parent: A **parent exemplar** of a witness other than the **Primary Parent Exemplar**. Secondary parents are the sources of mixture for their **secondary descendants**.

Siblings: Sisters, first generation descendants (copies) of the same **exemplar**.

Sibling Gene: The collection of **minimal readings** a **witness** has that occur only in it and its **sibling** sisters. These are the readings where the text of the parent exemplar of the siblings differs from the text of its genealogical ancestors**.**

Stemma: A tree diagram of the genealogical relationships of the witnesses to the text of an ancient literary composition.

Stematics: Stematics is the method used for recovering the original text of the ancient Greek and Latin classics, also known as the family-tree method.

Uncial: A **manuscript** written in all capital letters.

Variant Heredity: The characteristic of variant readings that provides a measure of the likelihood that a given reading in a particular witness A has been inherited from another witness B in an earlier generation. It is quantified as the **genetic distance** between witness A containing the given reading and another witness B in an earlier generation containing the same reading. The witness B having the least genetic distance from witness A is the closest near relative of A with respect to the given reading. A reading has no variant heredity until after it is first initiated somewhere in the genealogical history of the text.

Variant Reading: See *Reading*.

Variation Unit: See *Place of Variation*.

Version: A translation of a document into a language other than that of the original document itself.

Virtual Exemplar: An **exemplar** created by the software to account for same-generation mixture. These exemplars do not contribute to the primary structure of the tree diagram.

Witness: A **manuscript** of a document in its original language, or a translation of that document into another language, or a quotation of the text of a **manuscript** or translation.

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