# HOW YOUR GREEK NT IS CHANGING: A SIMPLE INTRODUCTION TO THE COHERENCE-BASED GENEALOGICAL METHOD (CBGM)

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**Abstract:** The present paper seeks to explain a new method being used to edit the standard editions of the Greek NT used by scholars, students, pastors, and translators. Known as the Coherence-Based Genealogical Method, it has been used to edit the Catholic Epistles and is set for further use in editing the remaining books of the NT. Unfortunately, the method has so far induced incomprehension more than it has critical engagement. This is due in part to the density of current explanations of the method. The modest aim of this paper is to address this misunderstanding by offering a simple introduction. After setting the CBGM in the context of previous genealogical methods, the article explains the basic features of the method, the new tools it provides, and the preliminary results of its use. The conclusion suggests that the CBGM holds promise for editing the text of the NT and that it therefore deserves greater attention from NT scholars. An appendix offers an index of variants discussed in relation to the CBGM.

**Key Words:** textual criticism, Coherence-Based Genealogical Method, CBGM, NA<sup>28</sup>, UBS<sup>5</sup>, use of computers, Jude 5, 2 Pet 3:10

In the last fifteen years, a new text-critical tool known as the Coherence-Based Genealogical Method (CBGM) has been used to edit the text of the NA<sup>28</sup> and the UBS<sup>5</sup>, the most common editions of the Greek NT used by students, teachers, pastors, and translators. So far it has been used to edit the Catholic Epistles, and it is currently being used to edit Acts, John, and soon Revelation. Following this, the remaining books of the NT will each be edited in turn. Unfortunately, the method remains little known outside of the small circle of dedicated NT textual critics. Even among textual critics, the method continues to confound.<sup>2</sup> One of the most common reactions to the method is neither acceptance nor rejection but rather defeated resignation about ever understanding it. The present paper has the modest goal of presenting a short and easily digested introduction to this new and important development in NT textual criticism. It will not explore the deeper intricacies of the method nor will it offer any serious attempt at critical engagement. Instead, this essays hopes to aid in that necessary first step of such engagement:

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<sup>&</sup>lt;sup>2</sup> Eldon Epp is surely right to say that "many will admit that the functioning of the CBGM is not always easily grasped" ("Textual Clusters: Their Past and Future in NT Textual Criticism," in *The Text of the NT in Contemporary Research: Essays on the Status Quaestionis* [NT Tools, Studies and Documents 42; ed. Bart D. Ehrman and Michael W. Holmes; 2nd ed.; Leiden: Brill, 2013], 550).

proper understanding. In this way, it may be a service to all those who make the Greek NT a focus of their regular study.

### I. BACKGROUND

One of the central tasks of editing a text that exists in disparate copies is to reconstruct the text from which these copies derive. This discipline of textual criticism has a long and distinguished history, and it has developed a number of fundamental principles for restoring corrupt texts.<sup>3</sup> One of the most important methods is the stemmatic or genealogical method associated with the classical and German philologist, Karl Lachmann (1793–1851). Though once denigrated, especially in French scholarship of the twentieth century, the method has been undergoing a revival, due in no small part to the advent of the computer.<sup>4</sup>

This genealogical method is sometimes referred to as the "common error method" because its fundamental principle is that agreement in error implies agreement in ancestry.<sup>5</sup> This is true so long as these errors are not of a kind that (1) could be made multiple times or (2) could be easily corrected by later scribes and so long as (3) neither witness is an ancestor of the other. The careful application of this principle has allowed editors to restore lost ancestors and thereby reconstruct a clear family tree of their textual tradition. Once established, this family tree or stemma allows the editor to focus on the most important witnesses and ignore those that offer no additional information. Most importantly, the reconstructed stemma becomes a powerful tool for choosing between those numerous remaining variations where identifying error from non-error proved difficult.<sup>6</sup> At these points, the editor may now confidently choose those readings found in the majority of primary branches in the stemma. In the hypothetical stemma shown in Figure 1, for example, readings found in manuscripts A, B, and G have more authority than those found only in C and D because they are attested by two primary branches rather than just one.

<sup>&</sup>lt;sup>3</sup> For a helpful overview, see D. C. Greetham, *Textual Scholarship: An Introduction* (New York: Garland, 1994), 295–346.

<sup>&</sup>lt;sup>4</sup> The best introduction in English is now Paolo Trovato, *Everything You Always Wanted to Know about Lachmann's Method: A Non-Standard Handbook of Genealogical Textual Criticism in the Age of Post-Structuralism, Cladistics, and Copy-Text (Storie e linguaggi 7; Padova: Libreriauniversitaria.it, 2014). For the French reaction, see Mary B. Speer, "Old French Literature," in <i>Scholarly Editing: A Guide to Research* (ed. D. C. Greetham; New York: Modern Language Association, 1995), 382–416.

<sup>&</sup>lt;sup>5</sup> In this context, an "error" is a reading that is clearly derivative.

<sup>&</sup>lt;sup>6</sup> The accusations against this method that it is guilty of circularity often miss the fact that only a small selection of variants is used to create the stemma and that only then is the stemma is used to resolve the remaining bulk of variations.



Figure 1: A stemma for a hypothetical tradition. Capital Latin letters represent extant witnesses and lowercase Greek letters represent reconstructed witnesses. Direct copies (E, F, H, I) can be eliminated as offering no relevant data for reconstructing the archetype (ω). The archetype does not necessary represent the original text.

### II. THE PROBLEM OF CONTAMINATION AND THE CBGM

The method just summarized has been used with enthusiasm by many textual scholars for generations, especially those working on classical, medieval, and modern texts.<sup>7</sup> But it has one fundamental requirement that has seriously restricted its application in certain textual traditions. In order for the common error principle to work, the textual tradition must be one in which each witness is copied from one and only one other witness. This ensures that each descendent transmits the significant errors from its ancestor and only from its ancestor. When, on the other hand, a descendent witness derives errors from multiple ancestors, the result is contamination. This causes serious problems for the common error principle. At its worst, it may reverse the actual relationships of some witnesses and thereby mislead the editor who follows the resulting stemma. It was Paul Maas—himself one of the sharpest proponents of the common error method—who famously concluded that when it comes to genealogy, "There is yet no remedy against contamination."<sup>8</sup>

Although minor remedies have sometimes been offered for the symptoms of contamination, Maas's diagnosis has generally been accepted by scholars ever

<sup>&</sup>lt;sup>7</sup> Paolo Cherchi reports that all recent manuals of textual criticism in Italian "assign scientific value only to the genealogical method and reject as obsolete all the other methods that have been used in the long history of editing" ("Italian Literature," in *Scholarly Editing: A Guide to Research* [ed. D. C. Greetham; New York: Modern Language Association, 1995], 439).

<sup>&</sup>lt;sup>8</sup> Paul Maas, Textkritik (2nd ed.; Leipzig: Teubner, 1950), 31; my translation.

since.<sup>9</sup> More recently, however, a different sort of genealogy has been proposed, one that is specifically designed to work in contaminated textual traditions. This new method developed from work being done on what is arguably one of the most heavily contaminated textual traditions available, the Greek NT. The method is known as the Coherence-Based Genealogical Method (CBGM) and it has been developed over the last three decades by Gerd Mink at the Institut für Neutestamentliche Textforschung (INTF) in Münster, Germany. For the NT, the method has only been applied to the Catholic Epistles (James, 1–2 Peter, 1–3 John, Jude) and it has only just begun to be applied to texts outside the NT.<sup>10</sup> Despite its claims and despite its application to such an important text, it is not widely known or understood even among NT scholars. What can be provided here is only the most basic overview, but the hope is that this may serve as a useful introduction that may spark further interest.<sup>11</sup>

### III. DIFFERENCES WITH "COMMON ERROR" METHODS

Despite the common goal of delineating genealogy, the CBGM has several important differences from genealogical methods based on the common error principle. The most important difference is the way in which genealogy is constructed. Where common error methods *deduce* ancestry, the CBGM *aggregates* it. The fundamental principle of the CBGM is that *the relationship of witnesses can be derived from the relationships of their variants.*<sup>12</sup> Where witness A has readings prior to those of witness B, for example, this suggests that witness A may be an ancestor of witness B.<sup>13</sup> To use the language of the CBGM, the text is said to "flow" from A to B. This is fundamentally different from the common error principle which, as Maas noted, can never directly demonstrate the dependence of one witness upon another but can only do so indirectly by excluding the possibility of independence.<sup>14</sup>

<sup>&</sup>lt;sup>9</sup> See, for example, Martin L. West, *Textual Criticism and Editorial Technique Applicable to Greek and Latin Texts* (Stuttgart: Teubner, 1973), 37–47; R. J. Tarrant, "Classical Latin Literature," in *Scholarly Editing: A Guide to Research* (ed. D. C. Greetham; New York: Modern Language Association, 1995), 109; Trovato, *Everything*, 128–38.

<sup>&</sup>lt;sup>10</sup> For the results in the Catholic Epistles, see Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters* (2<sup>nd</sup> ed.; Stuttgart: Deutsche Bibelgesellschaft, 2013). For its use outside the NT, see Alberto Cantera, "Building Trees: Genealogical Relations between the Manuscripts of Wīdēwdād," in *The Transmission of the Avesta* (Iranica 20; ed. Alberto Cantera; Wiesbaden: Harrassowitz, 2012), 279–346.

<sup>&</sup>lt;sup>11</sup> Interested readers are encouraged to read Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek NT: Changing Views in Contemporary Research* (Text-Critical Studies 8; ed. Klaus Wachtel and Michael W. Holmes; Atlanta: SBL, 2011), 141–216 and the literature cited there.

<sup>12</sup> Ibid., 150-51.

<sup>&</sup>lt;sup>13</sup> We must remember that in the context of the CBGM we are speaking of the texts not necessarily manuscripts. A ninth century manuscript may have a text that is ancestral to the text of a fifth-century manuscript.

<sup>&</sup>lt;sup>14</sup> Paul Maas, Textual Criticism (trans. Barbara Flower; Oxford: Clarendon, 1958), 42.

The use of the term "witness" hints at another important difference of the CBGM which is its consistent distinction between the text of a manuscript (referred to hereafter as a "witness") and the manuscript as a physical artifact. In a contaminated tradition with many lost manuscripts, it may well be that a young manuscript contains a text antecedent to a much older manuscript.<sup>15</sup> In this case, relating the two texts requires a distinction between the age of the text and the age of the ink and parchment. This distinction further allows the CBGM to do away with reconstructing lost ancestors or hyparchetypes such as  $\alpha$  and  $\beta$  in Figure 1.

## IV. HOW THE CBGM WORKS IN BRIEF

1. From local stemmas to the global stemma. The ultimate goal of the CBGM is the construction of a stemma that shows the simplest relationship between all witnesses that accurately reflects their relationship at each point of variation. This comprehensive stemma is known in the CBGM as the "global stemma" and is built from two further types of stemmas. The first and most foundational are known as "local stemmas" which hypothesize how the text developed at each individual point of variation (Figure 2).

Jas 2.4 καὶ οὐ διεκρίθητε ἐν ἑαυτοῖς καὶ ἐγένεσθε κριταὶ διαλογισμῶν πονηρῶν;

a) και ου διεκριθητε b) και διεκριθητε c) ου διεκριθητε d) ουχι διεκριθητε e) διεκριθητε d

Figure 2: The local stemma for Jas 2:4/2-6 where the origin of reading *e* was left undecided.

The technological innovation here is that the computer is able to track the position of every single witness in relation to every other witness at every point of variation. In the first pass, the editors construct as many of the local stemmas as



<sup>&</sup>lt;sup>15</sup> An example of this in the Catholic Epistles is found in the Harklean Group of manuscripts which were copied in the twelfth–fifteenth century but preserve a seventh-century text. See Matthew Spencer, Klaus Wachtel, and Christopher J. Howe, "The Greek Vorlage of the Syra Harclensis: A Comparative Study on Method in Exploring Textual Genealogy," *TC: A Journal of Biblical Textual Criticism* 7 (2002), online at http://rosetta.reltech.org/TC/v07/SWH2002.

they are comfortable doing. The CBGM is designed to be repeatable or iterative so that decisions are open to revision as the genealogical data develops.

In a tradition with no contamination, it might be a simple matter to deduce a global stemma directly from the local stemmas. But the presence of contamination means that each witness has readings derived from sometimes dozens of possible sources. A stemma that showed all these sources as ancestors would be comprehensive but not very useful. To address this problem, the CBGM tries to eliminate all but the most important possible ancestors for each witness.<sup>16</sup> Once unnecessary ancestors have been eliminated, the construction of the global stemma directly follows. For the Catholic Epistles, lack of resources has meant that only the very top portion of the global stemma has been constructed (see Figure 3).<sup>17</sup>



Figure 3: The upper portion of the global stemma for the Catholic Epistles. The letter "A" at the top represents the editors' reconstructed text or *Ausgangstext* (translated as "initial text").

The arrows show the direction and sources of textual development. The presence of multiple ancestors is a reflection of contamination. The color of the arrow represents the strength of each connection (green being weakest and red strongest) and a dashed line means that the direction of the relationship is unclear. The value of the global stemma within the CBGM is that it accurately and comprehensively reflects the editor's own individual decisions. This overall picture can then be used to "check" the decisions and even to help settle especially difficult decisions. It may

<sup>&</sup>lt;sup>16</sup> The result is known as an "optimized substemma." The process of optimizing is too complex to explain here but interested readers should refer to Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (2009), 485–560, online at http://www.uni-muenster.de/INTF/cbgm\_presentation/download.html.

<sup>&</sup>lt;sup>17</sup> This figure is taken from Mink, "Introductory Presentation," 562.

also provide a starting point for investigating historical relationships between witnesses.

2. Pre-genealogical coherence. The construction of stemmas in the CBGM is aided by a new type of data that gives the CBGM its name: coherence. Within the CBGM there are two main types of coherence and each has a different meaning and each plays a different role. The first type is known as pre-genealogical coherence and is best understood as a simple quantitative comparison between two witnesses *at all* places where there is variation in the tradition. Crucially, pre-genealogical coherence treats all agreements in these places alike. The agreement of a single-word variation at the beginning of 1 John 5:7 counts the exact same as the agreement in the eighteenword variation at the end; there is no difference as far as pre-genealogical coherence is concerned.

In the Catholic Epistles, there are 3,046 places of variation among the 123 witnesses collated across the whole corpus.<sup>18</sup> The text of the two famous fourthcentury manuscripts, Codex Vaticanus (03) and Codex Sinaiticus (01) are extant in 2,999 of these places and agree in 2,613 of them. Thus, these witnesses have a pregenealogical coherence of 87.1 percent. To put this in perspective, the average pregenealogical coherence of all pairs of witnesses used consistently in the Catholic Epistles is 87.6%; the highest agreement between any pair is 99.1 percent and the lowest is 77.9 percent.<sup>19</sup> This puts the agreement of Vaticanus and Sinaiticus slightly below average.

Within the CBGM, pre-genealogical coherence provides an important solution to a problem faced by all genealogical methods. This is the problem of nongenealogical agreement, sometimes called accidental or coincidental agreement. This occurs whenever a variant is created by scribes independently of each other. Such an agreement would violate the principle that common error implies common ancestry and this is why the common error methods have always restricted themselves to errors deemed unlikely to have been created multiple times. But identifying such non-genealogical agreements can be difficult and it is here that pregenealogical coherence can be of help. The assumption is that the more two witnesses agree, the more their shared readings can be interpreted as genealogically significant rather than coincidental. Thus the single-word variation in 1 John 5:7 is just as genealogically significant as the eighteen-word variation when it occurs in witnesses with high overall degree of pre-genealogical coherence.

3. *Genealogical coherence*. The *pre*- in the term "pre-genealogical coherence" is meant to indicate that it tells us nothing about the specific direction of the relationships between witnesses; rather, it only tells us about how closely related they are.<sup>20</sup> The second type of coherence adds the element of direction to pre-genealogical coherence and so loses the prefix. Genealogical coherence is a combination of the similarity of witnesses combined with the direction of their relationship in all the

<sup>&</sup>lt;sup>18</sup> For the numbers, see Mink, "Contamination, Coherence, and Coincidence," 147.

<sup>&</sup>lt;sup>19</sup> Reported in ibid., 157 n. 25.

<sup>&</sup>lt;sup>20</sup> Perhaps a better term would be "non-genealogical coherence" or simply "similarity."

local stemmas. At any point of difference, two witnesses may take one of four possible relationships:

- 1. The first may be prior to the second  $(a \rightarrow b)$
- 2. The second may be prior to the first  $(a \leftarrow b)$
- 3. They may agree (a = b)
- 4. Their relationship may be indirect or too difficult to decide (a ? b)

Genealogical coherence incorporates all four of these possible relationships using the local stemmas. To return to the text of Vaticanus (03) and Sinaiticus (01), the decisions of the editors of the Catholic Epistles results in the relationships shown in Table 1.

03 = 01	Points of Comparison	Pre- Genealogical Coherence	03 → 01	03 ← 01	Unclear Relationship	No Direct Relationship
2,613	2,999	87.1%	250	89	36	15

Table 1: The relationship of the text of Vaticanus (03) to the text of Sinaiticus (01) as determined by the editors of the *ECM*.

What these data show is that Vaticanus has a text that can be considered a potential ancestor to the text of Sinaiticus since it has a higher ratio of prior  $(03 \rightarrow 01)$ to posterior  $(03 \leftarrow 01)$  readings. The presence of readings in 01 that are prior to readings in 03 can be explained as the result of contamination, deriving from ancestors besides 03.

4. *Textual flow diagrams*. As the information provided by genealogical coherence accumulates, it becomes possible to examine the coherence of witnesses at individual points of variation.<sup>21</sup> This constitutes a reversal of the CBGM's foundational principle such that the relationships of witnesses can now be used to explore the most likely relationships of their variants. This exploration is currently done through what are called "predominant textual flow diagrams." These diagrams link together witnesses with their potential ancestors in order to show the routes of textual development that are most consistent with the data so far. Here we should remember that this data includes *both* the more objective data of pre-genealogical coherence *and* the subjective decisions of the editors in individual local stemmas. In this way, the use of textual flow diagrams will not simply confirm the editors' own biases. An example will help illustrate the process.

<sup>&</sup>lt;sup>21</sup> We should note that these diagrams are *not* stemmas; they are designed only for studying genealogical coherence, not the text's overall historical development. They are too simplified for this latter task.

At 1 Pet 4.16, suffering Christians are instructed to glorify God either (a) "in this matter" ( $\dot{\epsilon}v \tau \tilde{\omega} \mu \dot{\epsilon}\rho\epsilon\iota \tau \sigma \dot{\upsilon}\tau \omega$ ) referring to their suffering or (b) "in this name" ( $\dot{\epsilon}v \tau \tilde{\omega} \dot{\upsilon} \dot{\upsilon} \mu \dot{\epsilon}\rho\epsilon\iota \tau \sigma \dot{\upsilon}\tau \omega$ ) referring to the name of Christ. Until the publication of the *Editio Critica Maior* (*ECM*), most editions of the Greek NT have preferred reading *b* because it is attested in so many early and important manuscripts and versions (P72, 01, 02, 03, 044, 33, 614, Latin, Coptic, Syriac). Reading *a*, however, appears less natural and might easily have been changed by scribes to reading *b*, quite possibly under the influence of the phrase "in the name of Christ" ( $\dot{\epsilon}v \dot{\upsilon} \dot{\upsilon} \dot{\omega} \mu a \tau \iota X \rho \iota \sigma \tau \tilde{\upsilon}$ ) two sentences earlier (v. 14). Applying genealogical coherence to the witnesses that attest reading *b* results in the textual flow diagram shown in Figure 4.



Figure 4: The predominant textual flow diagram for reading *b* at 1 Pet 4:16/24–28 with a connectivity of 10.

Each number represents a distinct witness. The arrows connect witnesses to their most similar potential ancestor that shares the same reading. This last qualification follows from the assumption that scribes generally copied their exemplars faithfully. But, of course, scribes did not always copy faithfully, and so the CBGM allows the user to "loosen" the constraints of textual flow diagrams to reflect better or worse copying for a particular variant. This variable that allows for loosening the diagram is referred to as "connectivity" and it tells the computer how closely related each witness should be to its ancestor in the diagram. In this particular case, the connectivity is set to ten, meaning that the computer will only display an ancestor with a different reading if it cannot find an ancestor among the ten most similar ancestors for that witness. In the case of witness 2492, for example, its nine closest potential ancestors all attest reading a rather than b; only its tenth closest ancestor (witness 1243) shares reading b. The rank of each witness's ancestor is indicated by the number following the forward slash (e.g. 1739/2). Thus 03 is the second closest ancestor of 1739. Where no slash is present, the computer has found that the closest ancestor has the same reading as the witness in question. In these cases, the relationship is as strong as possible.

This particular textual flow shows that eight witnesses that attest reading b do not have close potential ancestors that share reading b with them. These are 03, 5, 1175, 876, 69, 88, 2718, and 218. Such a situation constitutes poor genealogical

coherence which suggests that reading b may have developed from reading a multiple times in the course of the text's transmission. In contrast to this, reading a shows very good genealogical coherence as seen in its own textual flow diagram shown in Figure 5.



Figure 5: The textual flow diagram for reading a at 1 Pet 4:16/24–28 showing perfect genealogical coherence. All witnesses share the same reading as one of their ten closest potential ancestors.

In this case, the computer is able to find an ancestor with the same reading for every single witness, again with a connectivity of ten. In short, the textual flow diagrams provide genealogical evidence that reading b developed multiple times from reading a and this is precisely what one would expect if scribes found it easy to "correct" reading b using the text of the immediately preceding context.

While the preceding example illustrates how the CBGM can confirm an editor's judgment, in other cases it does just the opposite and may thereby correct certain prejudices. In either case, the CBGM offers a way for the editors to explore the overall implications of hundreds or, in the case of the NT, thousands of their individual decisions.

#### V. PRELIMINARY RESULTS

1. Textual changes. Thus far the CBGM has been applied to the Catholic Epistles. The results have also been available since 2012 in the NA<sup>28</sup> and since 2014 in the UBS<sup>5</sup>. The application of the CBGM resulted in 34 changes to the main text of the Catholic Epistles and a slight increase in the number of passages marked as uncertain.<sup>22</sup> In most cases the changes are of minor significance for interpretation or translation, but in several cases the changes should not be ignored. At the difficult variation in Jude 5, for example, the text now reads that it was "Jesus" ('Iŋσοῦς) who once saved a people from Egypt instead of "the Lord" (ὁ ¤ύριος). In another important change, 2 Pet 3:10 now prints a reading that is not found in any known Greek witness. Where the previous edition read that the last days would mean that the earth and all that is in it "will be found" or perhaps "exposed"

<sup>&</sup>lt;sup>22</sup> Uncertain passages are now marked by a diamond rather than with brackets.

(εύρεθήσεται), the text now reads the opposite: the earth and all that is in it "will *not* be found" (ούχ εύρεθήσεται). The latter reading sits much easier with the surrounding context, but is only attested in a few Coptic and Syriac manuscripts.

2. Rejection of text-types. Along with these textual changes, the CBGM has ushered in several less obvious but more far-reaching changes. The most significant and, for that reason, controversial is that it has convinced the editors of NA<sup>28</sup>/UBS<sup>5</sup> to abandon the longstanding notion of manuscript text-types. This shift alone could be momentous for the discipline. The reason is that, as Eldon Epp has observed, "to write the history of the NT text is to write the history of text types, and concomitantly to write also the history of the criteria for the priority of readings."<sup>23</sup> In place of text-types, the developers of the CBGM have, naturally enough, offered the CBGM's detailed genealogies. They argue that these genealogies manage to avoid the arbitrary boundaries set up for the traditional text-types and at the same time they provide a far more discriminating view of textual relationships. Whether NT textual critics will accept this replacement remains to be seen. But its significance should not be missed.

3. Renewed appreciation for the Byzantine text. A final shift brought about by the CBGM is a renewed appreciation for the so-called Byzantine text which dominates the Greek NT manuscripts from the ninth century and beyond. This text form has generally been disparaged by NT textual critics as being late and unreliable, at least where it diverges from earlier witnesses.<sup>24</sup> But the CBGM for the Catholic Epistles shows that a number of Byzantine witnesses are, in fact, very close to the editors' own reconstructed text. This unexpected discovery gave them a renewed appreciation for this text and led them to revisit all of its unique readings in the second edition of the ECM.<sup>25</sup> As a result, almost one-third of the changes in the new NA/UBS text have the support of the Byzantine witnesses as over against readings found in witnesses from the third to fifth centuries such as P<sup>72</sup>, Sinaiticus (01), Alexandrinus (02), Vaticanus (03), and Ephraemi Rescriptus (04).<sup>26</sup>

#### VI. CONCLUSION

The CBGM offers a unique application of computer technology to the longstanding problems presented by contamination. In development for many years, the method has now produced its initial results. As with any novel method, it needs to be carefully considered, tested, and evaluated by other scholars. In particular, the CBGM raises questions about the value of initially treating all variants alike, about what historical conclusions can be drawn from purely textual relationships, and about how to integrate sources which the CBGM currently leaves out (such as translations and patristic citations). What is clear, at least in this writer's opinion, is

<sup>&</sup>lt;sup>23</sup> Epp, "Textual Clusters," 519.

<sup>&</sup>lt;sup>24</sup> We should note that the editors make an exception to their rejection of text-types with regard to the Byzantine text.

<sup>&</sup>lt;sup>25</sup> See ECM (2<sup>nd</sup> ed.), 34\*.

<sup>26</sup> See Jas 1:20; 2:4; 2:15; 4:10; 1 Pet 5:1; 2 Pet 2:18; 2:20; 2 John 5; 12; 3 John 4.

that the CBGM offers one of the most significant recent developments in NT textual studies and that it deserves greater attention from those who study the Greek NT.<sup>27</sup>

## VII. APPENDIX: INDEX OF VARIANTS DISCUSSED IN RELATION TO THE CBGM

One of the most frequent issues with the CBGM is understanding exactly how much influence it has had on the editors' text critical judgments. Unfortunately, this question is not one that can be answered by a simple description of the method itself. That is because the results provided by the CBGM, like all text critical data, have to be weighed and interpreted by a human. For this reason, it is rarely possible to answer the question "was this particular change due to the CBGM?" with a simple yes or no. At one time, readers of the *ECM* were promised an accompanying textual commentary. Such a volume would have provided key insight into how and how much the CBGM influenced the editors' decisions. Regrettably, that commentary has not appeared and the hope of seeing it in the future continues to diminish.

In lieu of such a commentary, the best way for scholars to gain a sense of the CBGM's role is to consider those places where the editors have discussed in print their use of the CBGM. Since those publications are diffuse, it seemed good to provide an index of all the places where the CBGM has been discussed in relation to particular variants. At the moment, this is as close as we can get to having any kind of textual commentary on the Catholic Epistles. Reading through these examples is the best way, in my opinion, to understand how the CBGM is influencing textual decisions.

The following is divided into two parts: (1) publications by those working on the NA<sup>28</sup>/UBS<sup>5</sup>/*ECM* text and (2) publications by others who have used or studied the CBGM. The format is straightforward. After each verse, I list the publication number followed by the page number(s). The more substantial and helpful discussions I have marked with an asterisk (\*). Thus a reference in the first list to "Jas 2:3 (7:131–36\*)" means that there is a substantial discussion of a variant in Jas 2:3 found on pages 131–36 of Gerd Mink's "Introductory Presentation" (number 7 on the list of publications by editors).

- 1. Discussions by the Editors:
- a. Passages Discussed:

Acts	4:27 (9:12–13); 5:37 (9:13); 9:3 (9:10); 9:15 (9:11); 10:30, 31, 43
	(9:2); 10:37 (9:7–8); 11:8 (9:4–6*); 11:13, 26 (9:3–4*); 12:20
	(9:8–9); 13:1 (9:6–7); 13:14 (1:2–4*); 13:33 (9:9*); 16:7 (9:14–
	15); 18:17 (1:4–12*)
James	1:12 (2:178–79; 5:381–428*); 1:19 (5:430–74*); 1:25 (5:326–
	79*); 2:3 (7:131–36*); 2:4 (4:61–62*); 2:13 (2:179–81; 11:149–
	56); 2:16 (2:179); 2:18 (2:196); 2:23 (2:152; 153; 154); 2:25

<sup>27</sup> My thanks to Gerd Mink and James B. Prothro for feedback on a draft of this essay.

(2:176–78); 3:8 (3:495); 4:9 (3:495); 4:12 (10:3–8); 5:4 (3:495); 5:14 (3:495)

- 1 Peter
   1:6 (4:41-43\*; 6:59-60\*); 1:17 (2:197); 1:24 (2:197); 2:1 (5:306-25\*); 2:18 (11:148-49); 2:21 (8:118-21\*); 3:16 (2:174-75); 3:21 (2:197); 4:16 (4:43-46\*; 5:205-28\*; 6:60-62\*); 5:1 (11:156-59); 5:9 (2:197)

   2 Peter
   1:4 (2:198); 2:12 (2:198-99); 2:20 (11:156); 3:10 (4:27; 7:129)

   3 John
   9 (2:199); 12 (2:199)
- Jude 1 (8:113–18\*); 5 (8:121–26); 15 (2:181–89\*)

## b. Publications:

- Annette Hüffmeier. "The CBGM Applied to Variants from Acts." TC: *A Journal of Biblical Textual Criticism* 20 (2015): 1–12. Online: http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-H%C3%BCffmeier.pdf.
- 2. Gerd Mink. "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches." In *The Textual History of the Greek NT: Changing Views in Contemporary Research*, edited by Klaus Wachtel and Michael W. Holmes, 141–216. Text-Critical Studies 8. Atlanta: SBL, 2011.
- 3. ——. "Eine umfassende Genealogie der neutestamentlichen Überlieferung." *NTS* 39 (1993): 481–99.
- "Problems of a Highly Contaminated Tradition: The NT: Stemmas of Variants as a Source of a Genealogy for Witnesses." In *Studies in Stemmatology II*, edited by Pieter van Reenen, August den Hollander, and Margot van Mulken, 13–85. Philadelphia: John Benjamins, 2004.
- 5. ——. "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation." Münster: 2009. Online: https://www.unimuenster.de/NTTextforschung/cbgm\_presentation/download.html.
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- Klaus Wachtel. "The Coherence-Based Genealogical Method: A New Way to Reconstruct the Text of the Greek NT." In *Editing the Bible: As*sessing the Task Past and Present, edited by John S. Kloppenborg and Judith H. Newman, 123–38. Resources for Biblical Study 69. Atlanta: SBL, 2012.
- 8. ——... "Towards a Redefinition of External Criteria: The Role of Coherence in Assessing the Origin of Variants." In *Textual Variation: Theological and Social Tendencies? Papers from the Fifth Birmingham Colloquium on the Textual Criticism of the NT*, edited by David C. Parker and H. A. G.

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Houghton, 109–27. Texts and Studies, Third Series 6. Piscataway, NJ: Gorgias, 2008.

- ——. "Constructing Local Stemmas for the ECM of Acts: Examples." TC: A Journal of Biblical Textual Criticism 20 (2015): 1–15. Online: http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-examples.pdf. [This article needs to be read in conjunction with the essay "The CBGM Applied to Variants from Acts: Methodological Background" in the same volume as it provides a key for the editorial guidelines referenced in the examples.]
- Holger Strutwolf. "Scribal Practices and the Transmission of Biblical Texts: New Insights from the Coherence-Based Genealogical Method." In *Editing the Bible: Assessing the Task Past and Present*, edited by John S. Kloppenborg and Judith H. Newman, 139–60. Resources for Biblical Study 69. Atlanta: SBL, 2012.
- Klaus Wachtel and David C. Parker. "The Joint IGNTP/INTF Editio Critica Maior of the Gospel of John: Its Goals and Their Significance for NT Scholarship." Paper presented at the SNTS meeting, Halle, 2005. Online: http://epapers.bham.ac.uk/754/1/2005\_SNTS\_WachtelParker.pdf.

## 2. Discussions by Non-Editors:

## a. Passages Discussed:

Mark	1:1 (1:1–11)
James	1:12 (6:102–3); 2:4 (6:77); 2:13 (6:108); 2:16 (6:78); 2:18
	(6:110); 2:23 (6:85); 2:25 (6:101–102); 3:6 (6:76); 4:2 (6:77);
	4:17 (6:84); 5:7 (6:108)
1 Peter	1:6 (6:98–99); 1:17 (6:111); 3:16 (6:100); 3:21 (6:109, 111); 4:16
	(2:599–603; 6:93, 99–100); 5:2 (6:107–8); 5:9 (6:111); 5:10
	(6:110)
2 Peter	1:4 (6:111); 2:12 (6:111)
1 John	2:2 (4:603–25); 5:6 (2:603–4; 3:210–13*)
3 John	9 (6:112); 12 (6:112)
Jude	4 (3:213–18*); 5 (5:99; 6:100); 13 (5:111–12); 15 (5:114–15;
•	6:103–5): 19 (6:110)

b. Publications:

- Tommy Wasserman. "Historical and Philological Correlations and the CBGM as Applied to Mark 1:1." TC: A Journal of Biblical Textual Criticism 20 (2015): 1–11. Online: http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-Wasserman.pdf.
- —. "Criteria for Evaluating Readings in NT Textual Criticism." In *The Text of the NT in Contemporary Research: Essays on the Status Quaestionis*, edited by Bart D. Ehrman and Michael W. Holmes, 579–612. 2<sup>nd</sup> ed. NT Tools, Studies and Documents 42. Leiden: Brill, 2013, 579–612.
- 3. \_\_\_\_\_. "The Coherence Based Genealogical Method as a Tool for Explaining Textual Changes in the Greek NT." *NovT* 57 (2015): 206–18.

- 4. Toan Do. "Μόνον or Μονῶν? Reading 1 John 2:2c from the *Editio Critica Maior*." *JBL* 133 (2014): 603–25.
- 5. Timo Flink. *Textual Dilemma: Studies in the Second-Century Text of the NT*. University of Joensuu Publications in Theology 21. Joensuu: University of Joensuu, 2009.
- Bengt Alexanderson. Problems in the NT: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method (CBGM) and the Editio Critica Maior (ECM). Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48. Gothenburg: Kungl. Vetenskaps- och Vitterhets-Samhället, 2014.