

Comparing Three Approaches to Layer Extraction in the Greek Gospel Text of Codex Bezae:

A Test Case from John 4:1–42<sup>1</sup>

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## Introduction

Transcribed in ca. 400 C.E., the Greek column of Codex Bezae's bilingual text (identified by its *siglum* D) has traditionally been considered the centerpiece of the so-called "Western" text in the gospels and Acts. But research on D has been challenged by the evident complexity of its text, which appears to reflect multiple accumulated layers of readings. In his essay, "Codex Bezae as a Recension of the Gospels," Michael W. Holmes identifies at least five "layers" of readings in D, which are classified according to their patterns of agreement as readings "unique to" D, "readings ... only in D and the Latin tradition; readings ... in D and a small cluster of ... Greek witnesses; readings ... in D and the Byzantine tradition; and readings ... in D and the Alexandrian tradition."<sup>2</sup> The extent of the layering in D presents severe challenges for existing comparative methods that tend to take for granted that the text under comparison is at least moderately uniform. In the case of D, though, its readings must first be partitioned by layer and the individual layers compared, an approach that Holmes calls "a very problematic undertaking, but one that is unavoidable if the results ... are to be of any use or significance."<sup>3</sup> By demonstrating the essential integrity of D's Old Latin layer in relation to its mainstream Greek base, Holmes succeeds both in confirming D's composite character and in suggesting a viable approach to layer extraction by partitioning readings according to patterns of agreement. Given the presumed antiquity of D's text and its corresponding significance for the *praxis* of textual criticism in the gospels and Acts, not to mention an appreciation of the textual history of the New Testament, developing Holmes' work into a systematic method of layer extraction capable of isolating as cleanly as possible each of D's component layers is clearly a *desideratum*.

To this end, I will compare three methods of partitioning D's readings by layer: first, Holmes' method based on patterns of agreement; second, a proposed method based on the levels of D's readings in local genealogies; and, third, another proposed method based on multivariate clustering. The goal is to assess the viability of potential approaches to layer extraction in D as the groundwork for further research on Codex Bezae's place in the tradition. All three methods were applied to the same set of seventy-three readings from John 4:1–42.<sup>4</sup> These readings were

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<sup>2</sup> Michael W. Holmes, "Codex Bezae as a Recension of the Gospels" in *Codex Bezae: Studies from the Lunel Colloquium, June, 1994* (ed. David C. Parker and Christian-B. Amphoux. Leiden: Brill, 1996) 125.

<sup>3</sup> *Ibid.*, 126.

<sup>4</sup> This is the pericope of Jesus and the Samaritan Woman.

obtained from of a digital apparatus constructed using the CollateX application from full transcriptions of thirty Greek witnesses.<sup>5</sup> The apparatus cites all independent, continuous witnesses in John 4:1–42 that, according to *Text und Textwert*, agree with the Majority Text at less than seventy-six percent of the *teststellen* in John, while being extant at over half of the *teststellen*.<sup>6</sup> For completeness, I have included two representative Byzantine witnesses.<sup>7</sup> Due to D's relationship with the Latin tradition, readings were required to have an unambiguous Latin retroversion. Old Latin readings were added from the *Vetus Latina* edition of John.<sup>8</sup> Finally, Origen's readings were added from his *Commentary on John* using the Ehrman *et al.* edition of Origen's citations of John.<sup>9</sup>

### Holmes' Method based on Agreements

The first method I will examine is the procedure that Holmes develops in his study, which classifies readings based on their patterns of agreement. The results of my own application of a procedure similar to that proposed by Holmes to John 4:1–42 are shown in table 1. I found a well-defined D + Byzantine layer, with 37 readings, and a similarly well-defined D + Latin layer, with 20 readings. At the same time, I found the lines somewhat blurred between D + Alexandrian readings and D + Greek Minority readings.<sup>10</sup> The D + Alexandrian layer contained no exclusive members, though I did include five readings with strong support from P66, P75, B, and similar

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<sup>5</sup> Developed for text-critical work in the digital humanities by the EU-funded Interedition Development Group.

<sup>6</sup> Kurt Aland, Barbara Aland, and Klaus Wachtel, eds. *Text und Textwert der griechischen Handschriften des Neuen Testaments. V. Das Johannesevangelium. Band 1 I. Teststellenkollation der Kapitel 1–10. 1. 1. Handschriftenliste und vergleichende Beschreibung* (Berlin, De Gruyter 2005) 24–33. The included witnesses are P66 P75 01 03 04 019 032 038 045 0141 1 13 33 35 213 397 565 579 597 821 892 1010 1071 1128 1241 1242 1293 1654 2561 2786 / e a b d q r<sup>1</sup> ff<sup>2</sup> c. MS 1 represents family 1 for 1582 (73.2%). MS 13 represents family 13 for 69 (73.7%). MSS N (74.5%), 865 (64.8%), and 2718 (72.7%) are incomplete in passage. Because it is complete in passage, MS C (41.7%) is included despite attesting less than half of the 60 *teststellen* in John. I was unable to obtain a transcription of 2129 (74.2%).

<sup>7</sup> I.e., 045 and 35, both supporting Majority readings at 97% of the *teststellen*.

<sup>8</sup> Philip H. Burton, Hugh A. G. Houghton, *et al.*, eds. *Vetus Latina. Die Reste der altlateinischen Bibel 19. Evangelium secundum Iohannem* (Freiburg: Verlag Herder: 2011).

<sup>9</sup> Bart D. Ehrman, Gordon D. Fee, and Michael W. Holmes. *The text of the fourth Gospel in the writings of Origen* (Atlanta: Scholars, 1992).

<sup>10</sup> In reference to Bezae's layering, Holmes later refers to a continuum "from the Latin version only up to a substantial minority of the Greek manuscript tradition." Holmes, "Recension," 127. For convenience, I refer to the layer characterized by "a small cluster of Greek witnesses" (p. 127) by the phrase "Greek minority" layer.

witnesses. The D + Greek Minority layer, containing eleven readings, leaves the impression of an artificial catchall category for readings that do not fit the other categories.

**Table 1:** D’s readings per layer according to Holmes’ method in John 4:1–42.

Layer	Readings
D + Latin	20
D + Greek Minority	11
D + Byzantine	37
D + Alexandrian	5

Holmes’ procedure is helpful as a quick assessment of the layer to which a given reading belongs, though there seem to be parts of the tradition that are not entirely covered by his proposed categories. Two of Holmes’ suggested layers, the D + Greek Minority and D + Alexandrian, seem too diffuse to be considered layers by the same standard as the well-defined D + Latin and D + Byzantine layers. I doubt that either of these hypothesized layers is “real,” though for different reasons. The D + Alexandrian layer, I would suggest, is not properly a “layer” at all, but rather reflects the bedrock, so to speak, upon which the other layers developed. For this reason, its agreements with D appear somewhat sporadically where most of the tradition went in other directions. On the other hand, I would suggest that the Greek minority layer, like the “Caesarean” text it seems to resemble, is an artificial construct. In my opinion, it is better to consider these readings intermediate between other clear categories.

### Local Genealogical Levels

The second method is one that I am proposing based on D’s levels in the local genealogies at each reading according to the method developed at the Institut für Neutestamentliche Textforschung in Münster in connection with the Coherence-Based Genealogical Method.<sup>11</sup> The procedure is, first, to reconstruct a plausible development sequence of the readings at each variation unit, a step based on the *local genealogical principle*, i.e. that the reading that best accounts for the others is probably the earliest.<sup>12</sup> The second step is to note the level at which D’s reading occurs in each stemma. Given that secondary readings appear by definition below

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<sup>11</sup> See Gerd Mink, “Contamination, Coherence, and Coincidence in Textual Transmission” in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research* (ed. Klaus Wachtel and Michael W. Holmes; Atlanta: Society of Biblical Literature, 2011) 141–205.

<sup>12</sup> Eldon Jay Epp, “Traditional ‘Canons’ of New Testament Textual Criticism: Their Value, Validity, and Viability—Or Lack Thereof,” in Wachtel and Holmes, eds., *Textual History*, 93–95.

readings from which they derived, a reading's relative layer can be inferred by examining its level in the stemma. Although this procedure does not *identify* the layer and may require disambiguation when there are multiple secondary layers, it has the advantage of suggesting a developmental sequence between layers. Moreover, by capturing the internal relationships between readings (though both internal and external evidence is used to establish them), local genealogies offer a means of corroboration independent of approaches based on extrinsic features, such as agreements. The results for John 4:1–42 are shown in table 2.

**Table 2:** D's readings by level in relation to Holmes' Byzantine and Latin layers with correlations shaded in bold.

Level	Layer	Readings	Holmes' Layer	Readings
<b>I</b>	<b>Primary</b>	<b>33</b>	<b>D + Byzantine</b>	<b>28</b>
			D + Alexandrian	4
			D + Greek Minority	1
<b>II/III</b>	<b>Secondary</b>	<b>40</b>	<b>D + Latin</b>	<b>20</b>
			D + Greek Minority	10
			D + Byzantine	9
			D + Alexandrian	1

After constructing local genealogies for D's readings in John 4:1–42, I found thirty-three readings at level I, thirty-seven at level II, and three at level III. Of the twenty readings assigned to the D + Latin layer according to Holmes' method, all appeared at level II in the local genealogies, i.e. as secondary readings. Of the thirty-seven readings in the Byzantine layer according to Holmes' method, twenty-eight or seventy-five percent appear at level I, i.e. as primary readings, while nine appear at level II. There is a strong correlation, then, between a reading's layer according to Holmes' method and its level in the local genealogy. In the present case, it appears that D's Old Latin layer is secondary to its Greek mainstream layer. By combining the insights of the first two methods, we have learned, first of all, that D attests at least two layers of readings in John 4:1–42 and, secondly, that there is a clear developmental sequence between these layers.

### Multivariate Clustering

I am also proposing the third method which applies a multivariate clustering technique called “partitioning around medoids” (PAM) to the problem of partitioning readings by layer.<sup>13</sup> As in Holmes’ procedure and unlike local genealogies, the partitioning is based on agreement patterns for each reading. The difference is that the relationships between the readings are computed statistically with reference to the full set of data points. Out of this relationship data, the partitioning procedure selects representative readings around which to build clusters of related readings. Since PAM is able to generate any number of partitions (less than the number of readings), in general, the optimum number of clusters is that at which adding another cluster no longer improves the grouping and separation. As in many exploratory methods, there is a theoretical component insofar as a trained critic will likely be able to spot implausible results. For the present data set, I stopped at six clusters, just as clear structures emerged in the Latin version.

**Table 3:** D’s Readings by cluster with correlations in bold to Holmes’ layers and local genealogical levels.

Cluster	Layer	Rdgs	Holmes’ Layer	Rdgs	Level	Rdgs
1	Transitional	8	Byzantine	4	I	2
			Greek Minority	4	II	5
					III	2
2	<b>Greek Mainstream</b>	<b>33</b>	<b>“Byzantine”</b>	<b>33</b>	<b>I</b>	<b>27</b>
3	“Free” Traditions	9	Greek Minority	6	II	8
			Latin	2	III	1
4	Alexandrian	4	Alexandrian	4	I	4
			Greek Minority	1	II	1
5	<b>African Old Latin</b>	<b>8</b>	<b>Latin</b>	<b>8</b>	<b>II</b>	<b>8</b>
6	<b>European Old Latin</b>	<b>10</b>	<b>Latin</b>	<b>10</b>	<b>II</b>	<b>9</b>
					III	1

When applied to D’s readings in John 4:1–42, the clusters suggested by PAM are well-corroborated by the layers identified using Holmes’ procedure, as shown in table 3 and figure 1, and by the local genealogical method, as suggested by figure 2. The D + Latin and D + Greek mainstream clusters are the most distinct and cohesive clusters. Eighteen of the twenty D + Latin

<sup>13</sup> Documentation extended from Peter Rousseeuw, Anja Struyf, and Mia Hubert, based on Kaufman and Rousseeuw (1990), maintained by Martin Maechler. <http://cran.r-project.org/web/packages/cluster/cluster.pdf>.

readings according to Holmes' method are located in one of the two adjacent Latin clusters (5 or 6), while 33 of the 37 readings assigned by Holmes' procedure to the D + Byzantine layer are now in cluster 2, which I am calling the D + Greek mainstream cluster. Meanwhile, four of the five readings that were provisionally assigned to the D + Alexandrian "layer" according to Holmes appear in cluster 4. On the other hand, as suspected, the D + Greek minority layer is no better defined by PAM than in Holmes' procedure, with its readings scattered between three different clusters.

In addition to mutually corroborating the other partitioning methods, the clustering results are supported by at least four other well-known findings.

**First**, D's proportion of Greek mainstream readings in John 4:1–42 as assigned by PAM is thirty-three readings or 45 percent, agreeing with *Text und Textwert's* 41 percent agreement of D with the Majority Text for John 1–10, indicating that the method has correctly identified this important feature of the tradition.<sup>14</sup>

**Second**, the two Latin clusters (5 and 6) consist almost entirely of Old Latin witnesses with just three Greek witnesses. While two of the Greek witnesses are represented just four times in eighteen readings, Codex Sinaiticus supports half of the readings between the two clusters, a result that is consistent with Gordon Fee's well-known study of the so-called "Western" character of Sinaiticus in John 1–8.<sup>15</sup>

**Third**, it is remarkable that the Latin layer detected by Holmes' procedure appears as two clusters in PAM's results. If examined closely, these two clusters divide along the lines of the well-established African and European forms of the Old Latin tradition.<sup>16</sup> Seven of the eight readings in cluster five (bottom right) are supported by *Codex Palatinus* or Cyprian (both with well-known African tendencies).<sup>17</sup> In cluster six (just above five), the support is narrower and

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<sup>14</sup> Aland *et al.*, eds., *Text und Textwert V,1.1*, 32.

<sup>15</sup> "Codex Sinaiticus is a leading Greek representative of the Western textual tradition in John 1:1–8:38." Gordon D. Fee, "Codex Sinaiticus in the Gospel of John: A Contribution to Methodology in Establishing Textual Relationships," *New Testament Studies* 15 (1968/69) 44.

<sup>16</sup> Philip Burton, "The Latin Version of the New Testament," *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis* (ed. Bart D. Ehrman and Michael W. Holmes; Leiden: Brill, 2013) 178–82.

<sup>17</sup> For Cyprian, see Hugh A. G. Houghton, "The Use of the Latin Fathers for New Testament Textual Criticism" in Ehrman and Holmes, eds. *Text*, 378. For *Codex Palatinus*, see Philip Burton, *The Old Latin Gospels: a study of their texts and language* (Oxford: Oxford University Press, 2000) 17.

characteristic of the European Old Latin. Most of the witnesses in the European Old Latin are better represented in the African cluster, but not vice versa, which is precisely what we would expect if the African tradition fed into the European as is often suspected.<sup>18</sup>

**Fourth** and finally, as in the local genealogical method, it is possible to gain a sense of the sequence of the layers by coding the readings by dateable witnesses, such as early Christian writers, the papyri, and other manuscripts transcribed before 400 C.E., as shown in figure 3.<sup>19</sup> When this is done, the readings in clusters five and six display the latest dates for their respective earliest dateable attestations. This agrees with the result of the local genealogical method, in which the Latin readings were all secondary. D's Old Latin layer appears latest in the clustering, later not only than its agreements with the somewhat diffuse Alexandrian tradition, but also later than its agreements with the Greek mainstream.

### **Conclusion**

In conclusion, the present study offers validation for three methods of layer extraction in D's text. While the clustering method produced the most detailed results, the more intuitive methods supplied valuable corroboration for its findings. All three methods support a Greek mainstream layer and an Old Latin layer with significant correspondence in the respective readings assigned to these layers. It should be noted, however, that clustering procedures have a key advantage over traditional approaches in offering structure without recourse to typological assumptions. With promising methods to isolate D's layers, it seems possible to consider serious comparative work on its text. Given that D's unique readings are so often cited in discussions of the text, these methods promise to illuminate translation, exegesis, commentary, and reception history in the gospels and Acts, when they relate to texts inspired by D's readings.

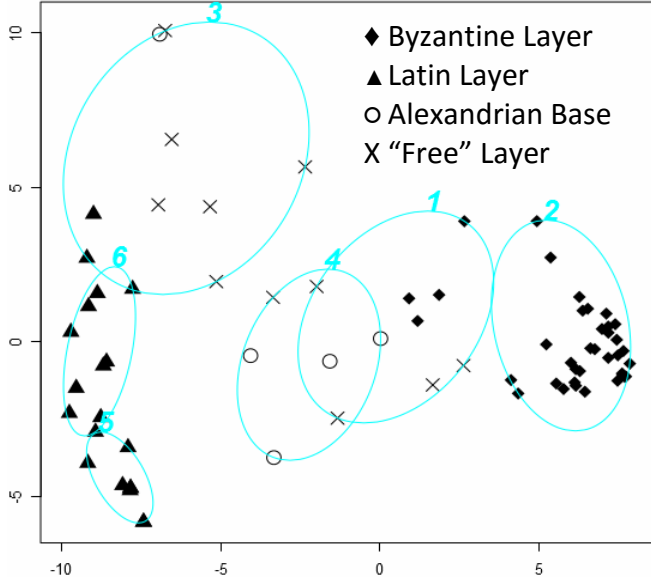
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<sup>18</sup> Burton, "The Latin Version," 180–82.

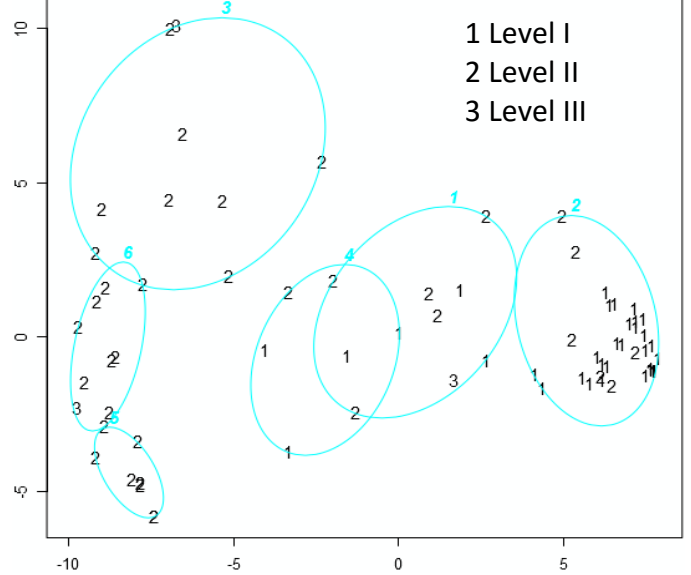
<sup>19</sup> Dates are transcription dates according to NA28.



a **Figure 1: Readings by Cluster and Layer**



**Figure 2: Readings by Local Genealogical Level**



**Figure 3: Readings by Earliest Dateable Attestation**

