Do the Marginalia of Vaticanus Support or Undermine the Originality of its Distigmai?

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THE CURRENT DIVIDE AND THE CENTRAL QUESTION

Scholarly consensus recognizes that distigmai in the margins of Codex Vaticanus B mark the location of textual variants,¹ and specialists have generally accepted that at least the fifty-one distigmai that Paul Canart identified as matching the apricot color of the original ink of Vaticanus date to its original production.² As the senior paleographer at the Vatican, who

1 E.g. Willker, Head, Amphoux, Epp as cited below. Philip B. Payne, Man and Woman, One in Christ: An Exegetical and Theological Study of Paul’s Letters (Grand Rapids: Zondervan, 2009), 241–42, and Philip B. Payne and Paul Canart. “Distigmai Matching the Original Ink of Codex Vaticanus: Do they Mark the Location of Textual Variants?” pages 199–226 in Patrick Andrist, ed., Le manuscrit B de la Bible (Vaticanus graecus 1209): Introduction au fac-similé, Actes du Colloque de Genève (11 juin 2001), Contributions supplémentaires. Lausanne, Switzerland: Éditions du Zèbre, 2010, give two chi-square probability test results showing the improbability that the null hypothesis is correct, namely that the distigmai are unrelated to textual variants. The first chi-square test compares the frequency of significant textual variants, as judged by NA²⁷ textual variants, occurring in 27 lines preceded by a distigme adjacent to a paragraphos or a longer obelus bar underlining text at the left end of that line and extending into the margin toward the distigme, to the frequency of this in the following 20 lines, hence 540 comparison lines. The chi-square calculation, including Yates’ correction for continuity, shows that the probability of such a high correlation of distigmai with significant textual variants happening in a random distribution is far less than one in 10,000. Including the Luke 14:24 original ink color distigme + bar (which was missed in the original calculation) would further increase the probability that these distigmai are related to textual variants. The second chi-square test compares the frequency of NA²⁷ textual variants occurring in the fifty-one lines preceded by a distigme that matches the apricot ink color of the original manuscript to the frequency of NA²⁷ textual variants in the 540 line control group. The chi-square results show that the probability of this happening in a random distribution is far less than one in 10,000. The odds of this happening in two successive tests, as it did these two chi-square tests, is infinitesimally small if distigmai are unrelated to textual variants. Hence, these chi-square results provide extraordinarily strong evidence that the null hypothesis (that distigmai are unrelated to textual variants) is incorrect.

2 This has been accepted, e.g. by Eldon Jay Epp, Junia: The First Woman Apostle (Minneapolis: Fortress, 2005) 18-19 and Christian-B. Amphoux, “Codex Vaticanus B: Les points diacritiques des marges de Marc,” JTS NS 58 (2007): 447, 440-66. Unfortunately, Amphoux on p. 445 appears to attribute to this author the view that the distigme at the end of 1 Cor 14:33 marks the western text placement of these verses after 14:40. See above, p. 7 for reasons why it is more naturally understood to mark verses 34-35 as an interpolation. http://www.pbpayne.com/?p=312 lists the fifty-one distigmai Canart judged to match the original ink color.
probably has spent more hours examining Codex Vaticanus than any other living scholar, scholars respect Canart’s judgments. This author has witnessed the care with which Canart examines the ink color of distigmai and unreinforced text on the same page—both directly and through a high powered internally lighted loupe—and trusts his judgments regarding ink color. On Nov. 21, 2009 at the NT Textual Criticism Seminar in New Orleans, however, Peter M. Head argued on the basis of the interaction between distigmai and other marginalia in Vaticanus that de Sepúlveda penned all the Vaticanus distigmai in the sixteenth century to identify the location of textual variants and used them to undermine Erasmus’s published text. The central question is whether the interaction of distigmai and other marginalia are compatible or incompatible with the originality of the apricot color distigmai or with Head’s thesis that all distigmai originated with de Sepúlveda in the sixteenth century.

THE IMPORTANCE OF THE QUESTION

Whether Canart or Head is correct has significant implications for both textual criticism and theology. If some of the distigmai date to the original production of Vaticanus in the mid fourth century, then at least this early scribe was aware of textual variants and regarded them important enough to compare manuscripts and record where they differ. Furthermore, distigmai illuminate some key textual questions. For example, they provide evidence that 1 Cor 14:34-35 “Let women keep silent in the churches…” is an interpolation. Most importantly, if the fifty-one distigmai that match the color of the original ink of Vaticanus date to its original production, they give a statistical basis for believing that through surviving manuscripts we probably know most of the significant textual variants that were available to the scribe of the Vaticanus NT.  

Since there were probably far more pages of NT manuscripts in the scriptorium where Vaticanus was copied than are extant today from that very early period, the strong correlation between apricot color distigmai and known textual variants significantly expands the basis for

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3 This is argued in Payne, *Man and Woman*, 240–43, and Payne and Canart, “Distigma.”
4 T. A. E. Brown e-mailed this author May 29, 2003, “the original Vaticanus hand is the most beautiful and well-balanced uncial script I have ever seen in a Biblical manuscript.” Such calligraphy is most naturally assigned to a professional scriptorium such as that at Alexandria.
5 Cf. above, note 1.
confidence in the reliability of the transmission of the NT text. In contrast, Head asserts that the Vaticanus distigmai are worthless for NT textual criticism.

THREE CRUCIAL PRESUPPOSITIONS THAT INFLUENCE ASSESSMENT

Presuppositions about early scribal awareness and practice affect how one evaluates this issue. Were any early NT scribes aware of textual variants? Did they have any symbol conventions for marking textual variants? Is there any evidence that distigmai marked textual variants in early manuscripts? Answers to these questions affect the likelihood that distigmai might have been added as early as the original production of Vaticanus. Three false assumptions predispose people to embrace Head’s thesis that all distigmai were added to Vaticanus as a single process late in the history of its marginalia:

1. Scribes near the time of Vaticanus did not have the sophistication to be aware of textual variants.
2. Scribes near the time of Vaticanus did not have a system for noting variants.
3. The notation of textual variants is such a rare phenomenon that it could only have happened once.

PROOF THAT DISTIGMAI MARKED THE LOCATION OF TEXTUAL VARIANTS NEAR THE TIME OF VATICANUS

The fourth or fifth century hexaplaric Codex Colberto-Sarravianus (LXX G)\(^6\) contains distigmai in its margins that correspond closely to the shape and location of distigmai in Vaticanus.\(^7\) These LXX G distigmai have corresponding colon shaped metobeloi between words

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\(^6\) *Explanatio signorum, quae in Septuaginta, ed. A. Rahlfs, occurrunt.* (Stuttgart: Württ. Bibelanstalt, 1935). On Feb. 10 and 11, 2010 Daniel Buck wrote at http://evangelicaltextualcriticism.blogspot.com/2010/02/putting-distigmai-in-their-place-payne_08.html that the distigmai of Codex Colberto-Sarravianus are “similar enough to Vaticanus that one wonders if they may have come from the same scriptorium … three different sections are extant—130 leaves at Leiden, 22 at Paris, and 1 at Leningrad—the names of the first two are here combined. [It] is the most extensive Hexaplaric LXX to survive, and basically the oldest as well. It contains the Hexateuch, and appears to share an interesting tie-in with Codex Vaticanus” since both omit the last three words of Deut 9:22: τὸν θεόν υμών.

\(^7\) The photograph of a page of LXX G at http://adultera.awardspace.com/TEXT/diacrit.html#02 shows three instances of a colon at the end of a variant marked with a distigme highlighted in pink and labeled as “obelus (umlaut)” and five instances of a colon marking the end of a variant introduced with a distigmai or an asterisk. This pattern following the established use by Origen
in the midst of LXX G body text, proving that both were part of the original production of LXX G. These distigmai and colons in LXX G are simplified forms of Aristarchus’s obelus and metobelus. There is no dispute that these distigmai mark locations where the Hebrew Scriptures do not include the adjacent text. Origen describes the method he used in his famous letter to Africanus (c. A.D. 240), “I marked, for the sake of distinction, with the sign the Greeks call an [obelus] … those passages in our copies which are not found in the Hebrew.”\(^8\) Aristarchus of Samothrace’s (217–145 B.C.) system of marking lines in Homer’s works he considered spurious with an obelus may have originated with his predecessor and teacher Aristophanes or someone else in the Alexandrian tradition. No matter who originated them, the use of obelus and metobelus to mark Greek textual variants was well established in Alexandria, the most widely-accepted provenance of Codex Vaticanus. Origen adopted Aristarchus’s obelus and metobelus and applied them to variants between Greek and Hebrew manuscript texts, but his letter to Africanus shows that he was aware of their use to represent differences between Greek manuscripts. Thus, the use of the distigme in Vaticanus is a re-application of the obelus for its original purpose, namely to indicate the location of textual variants. Since LXX G is dated close to Vaticanus, it proves the very early use distigmai to mark the location of textual variants.

of obelus in combination with metobelus confirms that colons in LXX G mark the end of variants marked by distigmai and asterisks. Under the image is a citation from Ernst Würthwein. *The Text of the Old Testament: An Introduction to the Biblia Hebraica.* Translated by Erroll F. Rhodes. (Grand Rapids: Eerdmans, 1995), “On the page shown an [obelus] marks the words: This indicates that Origen found these words in the LXX, but that they were NOT in the Hebrew text.” This website comments that Würthwein’s “basic explanation is sound. … What is of particular interest here however, is the actual form of the ‘obelus’. It is in fact [a distigme]. There is no doubt in this case that the function is indeed that of ‘obelus’, at least according to Origen’s version of that function. Here the ‘obelus’ (actually [a distigme], a sideways colon) marks a part of the Greek which is not found in the 2nd century A.D. (Massoretic) Hebrew text. When the passage extends beyond a single line, each new line that continues the reading is marked also at the beginning ([in] the margin) with the same sign (either Asterisk or Obelus). The most important thing about this particular example here, is that we can observe that these marks are indeed by the original scribe, since in many cases, the beginning and ending marks are actually IN THE MAIN TEXT. The text has not been erased and re-written to make room. Instead, obviously the original scribe was aware of the Hexapla markings and incorporated them into his text as he wrote.”\(^8\)

Consequently, LXX G disproves each of the three assumptions cited above that motivate people to discredit the evidence that at least 50 distigmai date to the original production of Vaticanus.

LXX G provides a natural explanation for the origin of the distigme symbol as a simplified form of Aristarchus’s obelus (+) to mark the location of textual variants. Vaticanus’s distigmai merely re-apply this simplified form of the obelus to its original use, namely to mark the location of Greek textual variants. This original use requires less sophistication and less linguistic skill than Origen’s specialized use to mark where the LXX departs from the MT.

This confirmation of the use of distigmai near the time of Vaticanus to mark the location of textual variants explains naturally why fifty-one of the distigmai in Vaticanus match the color of its original ink. If all distigmai originated in the sixteenth century, however, why would so many of them match the original ink color of Vaticanus?

DISTIGME-OBELUS SYMBOLS

In five instances a Vaticanus distigme is adjacent to an obelus that extends farther into the margin than usual, making it distinguishable from most paragraphoi, where the obelus or a mid-line gap marks the exact location of a widely recognized, significant interpolation:

“For the Son of Man came to save the lost.” after Matt 18:10,

“For” at the end of Luke 1:28,

“For many are called but few are chosen.” at the end of Luke 14:24,

“in the church. In those days” after Acts 2:47, and the passage,

“Let women be silent … It is shameful for a woman to speak in church.” 1 Cor 14:34–35.

Each of these obeloi extends approximately 3 mm or more into the margin. Virtually all such long bars that extend toward adjacent distigmai occur by widely-acknowledged interpolations. In contrast, the seventy-five other bars in 1 Corinthians extend, on average, 2.0 mm into the margin beyond the left edge of the character it underlines, and only one other extends 3.0 mm

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9 There is also a distigme in the right margin at the end of John 7:52 just before the pericope of the woman taken in adultery, John 7:53–8:11, but since the bar is in its left margin, the distigme does not attract the bar farther left.

10 The only possible exception is Mark 5:40, but in the middle of this Vaticanus line is a shorter interpolation, “but Jesus.” The horizontal bar in Rom 16:5 sticks out into the margin less than all the above distigme-obelus symbols by the line where other MSS replace “Asia” with “Achaia.”
into the margin (1475B 29). The following scans show the contrast in extension into the margin between obeloi and paragraphoi on the same page of Vaticanus.

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<thead>
<tr>
<th></th>
<th>1 Cor. 14:33-34</th>
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<td>paragraphos</td>
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External support for a distinction between distigme and distigme-obelus includes the use of horizontal lines or lines plus dots in other Greek literature to indicate spurious passages or textual variants. LSJ (1196) identifies δısελός: “horizontal line, — (representation of an arrow acc. to Isid. Etym. 1.21.3), used as a critical mark to point out that a passage was spurious… [including one that has] one point below and one above, +, ὁ περισσημένος, in texts of Plato, denoted τὰς εἰκαίους ἀθετήσεις, D.L. 3.66.” Sebastian Brock notes that Origen “quite frequently speaks of the current LXX text as being corrupt.” Bishop Victor in Codex Fuldensis uses bars and dots as sigla to mark textual variants. Jewish scribes also identified doubtful

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11 Excluding the bar at 1470B 2 since it does not match the surrounding text’s ink color, its shape is irregular, and, unlike every other bar in 1 Corinthians, it does not underscore the first letter of its line.
13 Ranke, Codex Fuldensis, 465 and 573, a photo of a page containing many bar plus dot sigla.
passages of Scripture with “dots or strokes.”  

Notation of textual variants should not be surprising since this practice was well established even in Sumerian and Akkadian texts.

Paragraphoi have traditionally been regarded as part of the original production of Vaticanus. These longer obeloi do not show any signs of originally being paragraphoi that were later elongated, which would have shown them to be a later addition. When bars extend significantly farther into the margin than most paragraphoi toward an immediately preceding distigme in a passage where manuscript evidence exists for omission of a block of text, the hypothesis that best explains all the data is that this is a distigme-obelus marking where some manuscripts omit a block of text.

Just as a paragraphos underscores the preceding line when a paragraph break occurs between two lines, effectively marking the interface between two paragraphs, so, too, the distigme-obelus marks the interface between the original text and the widely-recognized interpolations beginning immediately after the end of Luke 14:24 and 1 Cor 14:33. If the distigme-obelus at the end of 1 Cor 14:33 were noting the Western text position of verses 34–35 after verse 40, there should have been a corresponding symbol at the end of 40 to mark the equally great change in text there. Since there is no distigme or distigme-obelus after 40, this distigme-obelus more naturally carries its usual signification, an interpolation. The only interpolation ever proposed at this point is the widely-recognized interpolation of verses 34–35.

In three cases, Matt 18:10; Luke 1:28; and Acts 2:47, the distigme-obelus symbol marks the location of an interpolation at exactly the point where there is a gap in the middle of the Vaticanus line. Consequently, its distigme-obelus precedes and underscores that line just like a paragraphos underscores the line when a paragraph break occurs in the middle of that line. The presence of a gap between letters at exactly the point of the interpolation indicates the scribe at the time of writing was aware either of the interpolation or a paragraph break at that point, or

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14 Kenyon, *Our Bible and the Ancient Manuscripts*, 75–76.
possibly both. To indicate a paragraph, however, one would expect a shorter paragraphos. Consequently, the length of the obelus supports the view that the scribe of Vaticanus was aware of the interpolation but, presumably because it was not in his or her\textsuperscript{18} exemplar, left a gap at the point where other MSS inserted it and marked it with a distigme-obelus.

Virtually all mid-line gaps in Vaticanus follow a punctuation mark, typically a superscript dot marking the end of a sentence.\textsuperscript{19} Thus, it is striking that neither the gap at Matt 18:10 nor Luke 1:28 follows a punctuation mark, as would be expected if the scribe intended the obelus to be a paragraphos. Both interpolations are theologically important and easy to remember: “For the Son of Man came to save the lost.” (Matt 18:11) and “Blessed are you among women!” (Luke 1:28). These are precisely the kinds of textual variants that a scribe would be likely to remember well enough to mark with a gap while copying the text. Unless all five of the obeloi by distigmai are actually paragraphoi that just happen to: 1. be longer than usual, 2. occur at exactly the point of extended interpolations, and 3. be adjacent to a distigme, they provide evidence that the scribe at the time of writing Vaticanus was aware of and marked the location of at least some of these textual variants. The view that all distigmai are late must regard this complex pattern and its natural explanation of the data as mere coincidence.

**KEY WEAKNESSES IN THE HYPOTHESIS THAT ALL DISTIGMAI ARE LATE**

Head’s fundamental principle is sound: “When there is interference it is expected that the more ancient marginal material will preserve a more consistent pattern of its placement (due to freedom from interference), while the more recent marginal material will vary its placement as other things interfere with its normal location.” Nevertheless, his argument has serious flaws that critically undermine its central thesis that de Sepúlveda penned all distigmai in the sixteenth


\textsuperscript{19} Sixty of the gaps in the middle of text in 1 Corinthians follow a punctuation mark (29 with a paragraphos, 31 without), but there are only three gaps with no punctuation, 1464 A 11, 1464 C 16 (both by a paragraphos with a descender), and 1476 B 30. The gaps in 1468 A 27 and 1470 A 5 are so short they were probably not intended. A flaw in the vellum caused the gaps in 1473 and 1474 B 20-21. The punctuation in 1474 C 35 is faint.
century. Although Head states that “this date comports with all the evidence of the interference between marginal material,” much of the evidence suggests otherwise, as this critique shows.

Head’s paper changes the criteria of judgment on crucial issues. In particular, he appeals to “the colour and faded nature” of diplai\(^{20}\) to “place these in the production stage of the codex,” but then denies that “even indeed actual similarities of observed colour … are a particularly good guide to the dating of dots,” without stating any justification for this shift. Since Head regards the color and faded nature of the diplai as important evidence for assigning them to the production stage of the codex, it is inconsistent to dismiss the corresponding implication for distigmai.

Head mistakenly says this writer agrees with him that “the system of distigmai is a unified system (all are the product of the same process and of approximately the same date even if they were not all applied at the same moment).” Not only has this author never advocated this, quite to the contrary, the present writer has clearly distinguished between distigmai that match the color of the original ink of the codex, which should be dated in the fourth century as part of the original production of the manuscript, and distigmai that match the color of the medieval reinforcement, generally dated to the tenth or eleventh century. Head’s thesis seems to presuppose that all diplai, all distigmai, and all small numbers are, respectively, unified systems, each category of marginalia the product of a single process of approximately the same date. In fact, however, within each of these categories of marginalia there are significantly different symbol shapes and positions, and there is evidence that scribes wrote them at different times. This presupposition is surprising since Head acknowledges “the different colours and weight of ink,” and that “variations from the normal placement of the distigmai may be significant.” Without this presupposition Head cannot conclude from evidence that a few distigmai are late, that all distigmai must be late.

The ultimate question is, given their variety in color, location, orientation, shape, and apparently even purpose (discussed below), whether Head’s view is even plausible that “the system of distigmai is a unified system … all are the product of the same process and of approximately the same date.” How can they all be the product of the same process and of

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approximately the same date in cases where there seems to be obvious re-inking? Re-inking is a very different process than the noting of the location of textual variants, one that would only be reasonable after the original ink had faded, which is a process that takes considerable time. Particularly problematic for Head’s view is the distigme at 1409 B 25 (Acts 18:16), where the left dot appears to be re-inked but the right dot is not re-inked and still displays what Canart classifies as “probable” to be the original ink of the codex. Canart also discerned traces of the original ink color of the codex protruding from the distigme at 1469 A 3 (1 Cor 9:22), which is also clearly visible in the new facsimile, and from the distigme at 1501 B 42 (Phil 3:16–17). NA notes early variants in all three of these distigme locations. Consequently, these distigmai displaying both the original ink color and the reinforcement ink color, support the view that a scribe wrote them during the original production of this codex and they were reinforced in the Middle Ages along with the rest of the manuscript. Head must provide an explanation of these variations in ink color in order to make his thesis plausible. Willker, in contrast, acknowledges, “This is a good argument,” that distigmai were “written by the first hand and that many of them have been enhanced later by the reinforcer.”

Similarly problematic to Head’s thesis are Willker’s observations: “In some cases the reinforcer interpreted an imprint as a true [distigme] and reinforced both!” “At least in one instance the reinforcer reinforced [a distigme] which shows through the page from the verso.” This indicates that a scribe wrote these distigmai, at least, prior to the medieval reinforcement and, consequently, long before de Sepúlveda.

Also against Head’s contention regarding distigmai that “all are the product of the same

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23 Wieland Willker, “Codex Vaticanus Graece 1209, B/03: The Umlauts: Imprints” at http://www-user.uni-bremen.de/~wie/Vaticanus/imprints.html cites 1334 B 23 R, 1396 B 39 R, and 1506 A 28 L as re-inked. Similarly, both the distigme and its mirror impression at 1310 C 39 L and 1311 A 39 R match the color of the re-inked text.
24 Willker, “Codex Vaticanus Graece 1209, B/03: The Umlauts: Imprints” at http://www-user.uni-bremen.de/~wie/Vaticanus/imprints.html cites 1383 A 4 R.
process” is evidence that in various instances the reinforcer associated distigmai with spelling corrections marked in Vaticanus. There are two dark chocolate brown dots before six lines where the reinforcer corrected spelling over an unreinforced letter: 1281 A 26, 1361 C 1, 1423 A 14, 1479 A 12, 1481 C 21, 1501 B 42. The reinforcer in an seventh such instance may have regarded his change of H into Η in 1262 A 2 also as a spelling correction. The best evidences of the re-inking scribe’s association of distigmai with spelling corrections are instances where corrected spelling is marked in the margin by a symbol that is similar to a distigme, but is shaped and positioned differently. In 1468 A 26 the dots are vertically aligned with only the top dot in a normal distigme position. In two cases the marks are positioned lower than typical distigmai and are not two dots but rather two short slanted strokes somewhat like grave accents: 1409 A 23–24 (pointed out by codicologist Patrick Andrist) and 1423 A 14. The distinctive marks at 1409 A 23–24 are half way between two lines, unlike any original distigme, presumably because the name “Titius” begins on line 23 and wraps onto line 24. “Titius” is unreinforced, which effectively changes the name to “Justice.” These distinctive features indicate that the scribe did not trace over original distigmai in these three instances but created these marks. Similarly, the two dots before the spelling correction in 1281 A 26 are lower than typical distigmai, almost on the baseline; the left dot is noticeably higher than the right one, rather than being positioned in the typical horizontal alignment; they are closer to text than most distigmai; and there is a small dark chocolate color dot between them.

Apparently, then, a scribe misunderstood the original purpose of the distigmai to mark the location of textual variants and, instead, added marks similar to them, but in some cases noticeably different in both shape and location, in order to mark the location of spelling corrections made in Vaticanus. This illustrates the value of limiting the definition of distigmai to dot pairs that, though they may be re-inked, have characteristics falling within the apricot color distigmai’s range of size, shape, and location relative to text.

Head states that his paper focuses “on an area which Payne and others have not worked on, the relative chronology of the dots in relation to the other marginal material.” In fact, Willker and this author had already taken into consideration most of the categories of marginalia raised
in Head’s paper, yet the data has not convinced either of us that all the distigmai are a unified system or the product of the same process and of approximately the same date.

The fifty-one distigmai that Canart judged to match the color of the original ink occur all over the page from the top to the bottom of the manuscript and are associated with each column of the open codex: 8 before the first column, 9 between the first and second columns, 7 between the second and third columns, 7 before the fourth column, 9 between the fourth and fifth columns, 2 between the fifth and sixth columns (since this is not the usual position for either of these columns), and 10 after the sixth column. Consequently, they defy any explanation for their apricot color based on their position on the page. The distigme at 1309 A 23 appears to match the original ink color of a diple less that 2 mm from it. Willker asks appropriately, “why should some [distigmai] fade and the neighbouring text not? ... The different colour is a serious objection [to late dating of distigmai].” Furthermore, all instances where distigmai match the color of medieval reinforcement and all instances of distigmai significantly faded relative to others nearby undermine Head’s thesis that de Sepúlveda penned all the distigmai in the sixteenth century.

TYPICAL PARAMETERS OF THE FIFTY-ONE DISTIGMAI THAT MATCH THE ORIGINAL INK COLOR OF VATICANUS

Head’s paper has raised a valuable question: What characteristics help to identify which distigmai are not original or re-inked? Eight characteristics offer the best evidence that a distigme did not originate at the time of the original production of Vaticanus, as judged by the standard of the fifty-one apricot color distigmai that Canart confirmed to match the ink color of unreinforced text on the same page:

1. Dot(s) that are not circular.

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26 These add up to 52 since both 1380 A 26 and 1381 C 26 are included, although one is a mirror impression.
27 Willker, “Codex Vaticanus Graece 1209, B/03: Umlauts: Dating.” Though Willker was objecting to dating apricot color distigmai to the Middle Ages, the objection would apply even more strongly to dating them to the 16th century.
28 The clearest exception to this among the apricot color distigmai is the slightly elongated right dot in the distigme at 1279 C 41.
2. Irregular size of one or both dots.\(^{29}\)

3. Non-horizontal orientation of the dots.\(^{30}\)

4. Irregular spacing between the dots.\(^{31}\) All apricot dots are within 1 mm of each other.

5. Irregular separation from the adjacent Greek text. There is a fairly broad range that is normal. Without any possible interference from other marks in the margin, apricot color distigmai range from to within 1 mm (1243 B 21) to 8.5 mm (1264 C 29).\(^{32}\)

6. Irregular placement relative to the base line. Most apricot distigmai are at mid character height, but one (1380 A 26) is slightly higher than the adjacent letters. Six are near the top of adjacent letters\(^{33}\) and three are near the bottom.\(^{34}\)

\(^{29}\) The clearest exceptions to this among the apricot color distigmai are the faint distigmai at 1264 C 29 and 1345 B 11, which may appear small due to the faded ink, and the enlarged left dot of 1261 A 21, which the scribe’s pen may have touched more than once or slid slightly.

\(^{30}\) Slight variation is common, e.g. the right dot slightly higher in 1336 A 22, 1351 A 6, 1370 A 32, 1468 B 3, and 1475 B 11 and the left dot slightly higher in 1261 A 21, 1357 C 1, 1380 A 26, 1419 B 36. The greatest such divergence from horizontal in an apricot distigmai is 1351 A 6.

\(^{31}\) These are comparatively consistent. The apricot color distigmai with dots closest together is at 1308 B 27. Other close ones are 1243 B 21 and 1264 C 29, but none overlap. The farthest apart is 1261 A 21, but 1380 A 26, 1381 C 26, and 1473 A 6 are separated a similar distance.

\(^{32}\) Three are 4 mm from text (1279 B 1, 1287 C 29, 1296 A 14), two are 4.5 mm from text (1332 B 10, 1457 B 24), two are 5 mm from text (1382 C 39, 1499 C 42), one is 5.5 mm from text (1401 C 41), two are 6 mm (1279 C 41, 1332 C 20), one is at 7 mm (1352 A 40), and one is at 8.5 mm (1264 C 29), all with no interference from other marginalia. One is at 9 mm with a diple separating it from the text on 1309 A 23. This is not surprising in light of the evidence listed below that diplai were written concurrently with the text and prior to distigmai. This is the only distigme on its page so its positioning does not look out of place. One at 1277 C 19 is 9.5 mm from text and is above and to the right of a Ξ that shows through from the reverse side of the vellum. This, however, may be just coincidence since the distigme closest to it, at 1277 C 3 also extends significantly into the margin (over 7 mm) with no interference from any other mark, and both it and the distigme at 1277 C 3 lie on a level with the very top of preceding text and so are in harmonious positions. Perhaps, however, Willker is correct that 1277 C 19 is an offset from 1276 A 19, which is 7.5 mm from text; see note 33 below. If so, then the original distigme at 1276 A 19 left an apricot color mirror impression at 1277 C 19, and only the original distigme at 1276 A 19 was re-inked with dark chocolate brown ink, not its mirror impression, which perhaps because of its faintness was missed by the reinforcer.

\(^{33}\) 1264 C 29, 1296 A 14, 1345 B 11, 1351 A 6, either 1380 A 26 or 1381 C 26 (since one is an offset), and 1475 B 11. Willker regards 1277 C 19 to be an offset, as note 32 discusses, cf. http://www-user.uni-bremen.de/~wie/Vaticanus/imprints.html.
7. Juxtaposition next to more than one other dot or other marking.35

8. Distigme ink color that does not match the original apricot ink color or, secondarily, the dark chocolate brown of re-inked text.36

Because this is a handwritten manuscript, some variation is inevitable. The fifty-one apricot color distigmai are only a small fraction of them all. Consequently, it should not be surprising if some distigmai originally in apricot color ink but later re-inked have characteristics that exceed these ranges. Nevertheless, the sharper the contrast from the ordinary shape and position of distigmai and the more points of dissimilarity, the stronger is the case against a particular distigme going back to the original production of Vaticanus, especially when one or more characteristics lie outside the range of any of the apricot color distigmai. Almost all of the few distigmai whose position is clearly affected by interference with other marginalia exemplify several of these characteristics. This confirms the usefulness of these criteria for helping to judge which distigmai are not part of the original production of Vaticanus.

Though never determinative, lack of an NA27 variant in the line adjacent to a distigme may add to other evidence that a distigme is not original. This can only be used as weak corroborating evidence, however, since approximately 35% of Vaticanus lines lacking distigme contain an NA27 variant, and since approximately 29% of the lines adjacent to an apricot color distigmai contain no NA variant.

34 1300 A 37, 1300 A 39, and 1466 B 6.
35 Although there are no clear examples of this among the apricot distigmai, there are four instances where it is possible that the pen slipped slightly or made double contact with the vellum: 1261 A 21, 1287 C 29, 1380 A 26, and 1401 C 41.
36 The 1968 color reproduction of the NT of Vaticanus is not reliable for assessing ink color. Even different volumes of that edition vary dramatically. One distigme is red in one volume and brown in another. The 1999 edition reproduces ink color with remarkable fidelity, but only the original MS permits definitive judgments. Ink color that matches the re-inking argues against a date after the Middle Ages. In light of evidence cited above on p. 25 that the re-inking included distigmai as well as text, it is perhaps most judicious to regard distigmai whose ink appears to match the adjacent re-inked text as having been re-inked as well, unless there is evidence that they are later. In cases where no apricot color ink is visible, confirmation awaits scientific testing, such as multi-spectral imaging or X-ray Fluorescence imaging. Perhaps such analysis will one day confirm which dark chocolate brown distigmai were traced over original apricot color distigmai and whether some were added later.
Position on the “wrong” side of a column is not included in the eight characteristics of non-original distigmai for three reasons:

1. There are four cases like this in apricot color ink where no other marginalia compete for space on the “correct” side. Consequently, being in such a position does not put a distigme outside a fairly normal range of positions occupied by apricot color distigmai. Whenever there are this many apricot color distigmai with a characteristic, that characteristic should not be used to exclude originality. This applies to all eight of the criteria listed above. Head, however repeatedly judges that distigmai were written after other marginalia simply because they are on the “wrong side” of text. This is unwarranted.

2. It is perfectly reasonable that a scribe might want to place a distigme on the side of a line closest to where the textual variant occurs, and this correlation does in fact repeatedly occur.

3. Some lines have a distigme on both the right and left side of text. In 1339 C 42, with no interference from other marginalia, the distigmai on each side of the text match the color of the original ink of the manuscript. Whether this indicates two separate variants or draws special attention to one, it demonstrates that the scribe inserting it believed that it is acceptable to place a distigme on either side of a line.

Referring to the “wrong” side is misleading since it implies that this position does not conform to a consistent standard. This can be avoided by referring to it as the “less common” side. This is especially important for Head since his use of the “wrong” side of text where there is no interference from other marginalia undermines his assertion that all distigmai constitute a unified system, the product of the same process and of approximately the same date.

Following is an assessment of the evidence Head presents for dating distigmai later than diplai, small numbers, large numbers, and other marginalia:

DISTIGMAI AND DIPLAI

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37 1243 B 21, 1339 C 42, 1350 B 18, and 1351 A 6.
38 Cf. the examples listed above, pages 20-21, 23-24 and 27.
39 The fact that these instances are statistically less common can be helpful in cases of offset. Even though this factor is not decisive in itself, it can be a contributing factor in helping to assess which of two pairs of dots on opposite positions of facing ages is the deliberately penned distigme and which is just the accidental transfer of ink to the facing page.
Since 2001 I have argued publicly, just as Head does, that most diplai were added to Codex Vaticanus prior to the original distigai. I argue that offset distigai matching the original ink’s color, including one (1345 B 11) that left a mirror impression of the distigme on the facing quire, demonstrate that a scribe penned these distigai after the leaves were folded and gathered into quires.\(^{40}\) Even this author’s first NTS article on the distigai in 1995 (p. 256, note 58) points out that the distigme matching the original ink color of the codex at 1309 A 23 lies to the left of a dipla identifying a quotation from Scripture and that this distigme’s unusually far left position is evidence that diplai marking OT quotations on this page may have been written prior to it. Furthermore, unlike diplai, distigai are usually placed in the far right margin of the sixth column of the open codex. On the basis of these differences, I have argued that, in these cases at least, the addition of the distigai and diplai were separate steps in the original production of the manuscript. Head apparently thought he was undermining my position with this evidence, when in fact he was confirming my judgment.

Head provides convincing evidence that diplai were penned prior to distigai in three instances, and these three instances exemplify various of the eight characteristics of non-original distigai. The distigme at 1238 B 27 is in darker ink than both the apricot color dipla whose point it obscures and the surrounding chocolate brown re-inked text. Furthermore, NA\(^{27}\) lists no textual variant here. It is unlikely the original scribe would partially obscure his own dipla, or that an already re-inked distigme would be re-inked again. Similarly, the distigme at 1255 A 39 is in darker ink than both the apricot color dipla whose point it obscures and the surrounding chocolate brown re-inked text. Furthermore, its dots are not circular, its left dot being particularly elongated, and its left dot is noticeably higher than its right dot. Consequently, neither of these distigai should be attributed to the original scribe nor to the medieval reforcement. Similarly, the distigme at 1255 B 3 significantly obscures a dipla, its dots are not circular, nor do they match the apricot color of the original ink, and NA\(^{27}\) lists no variant on the line. Consequently, it should not be attributed to the original production of Vaticanus, either.

Head’s evidence is also compelling that diplai must have been present prior to the small sectional numbers where occurs at 1252 C 13 and where small numbers overlap a diple at 1249 C 36, 1379 B 18, and probably 1274 B 27. These, however, have no bearing on the dating of any distigme.

Nevertheless, Head’s assertion that there are “sixteen places of interference between diple and distigme” is clearly an overstatement. Three of Head’s sixteen examples have no diple.41 One has no distigme.42 Eight43 lie within the normal range for distigme separation from adjacent text, and so should not be regarded as “accommodating to the prior existence of the diple.” Furthermore, even positioning to the left of a diple is not particularly surprising since there is significant variation in the separation of apricot color distigmai from text even without competition for space.44

Head affirms “The consistent and careful placement” of the diplai and says that “the placement of the dipl[ai] are quite consistent.” There are 123 isolated diplai or sets of diplai on consecutive lines in the Vaticanus NT where each diple is aligned with the others in a remarkably straight line and all have comparable shape, size, apricot color, and intensity of ink. There are also, however, 22 sets of diplai where there is a pronounced difference among consecutive diplai in shape, size, color, and/or intensity of ink.45

41 1402 A 38 (perhaps Head misinterpreted the dots that show through from 1401 C 38 as a diple), 1459 A 28, and 1514 A 10 (which shows through from the other side of the vellum).
42 1518 A 33. Perhaps Head meant 1518 A 37, but it is in a normal distigme position and so does not evidence interference.
43 Only four of the nine he lists as “inside dipl[ai]” are between a diple and Vaticanus text: 1237 A 1, 1386 A 35, 1449 A 17, 1459 A 26. The eighth, 1455 B 31 L is not inside a diple but outside. Three: 1402 A 38, 1459 A 28, and 1514 A 10 33 have no diple, and one, 1518 A 33, has no distigme. 1518 A 37, which Head may have intended, is also in a normal distigme position.
44 Documented on p. 5 and note 32 above.
45 Size and intensity of ink: 1435 B 13, 1456 B 38–42. The last diple is farther left: 1447 C 30. The last diple is farther left and has a different shape: 1387 B 30, 1454 C 18, 1463 A 8. The last diple is farther left and has a different size: 1311 A 39. The last diple is farther left and has a different shape and size: 1310 C 9. The last diple is farther left and has a different shape, size, and intensity of ink: 1311 A 4. The last diple is farther right: 1341 A 12, 1392 A 26. The last diple is farther right and has a different shape, size, and intensity of ink: 1491 C 4. Instances where all the diplai have an atypical shape, vary in intensity of ink, and are also unusually close to text: 1455 C 27–32, 1455 C 34–42 and 1456 A 1, 1456 C 1–2. Instances where the color of the ink approaches more closely the dark chocolate brown color of the ink used in the medieval
Even among diplai, there are demonstrable differences not only of position, shape, size, ink color and intensity, but also of the time of their writing. For instance, the diplai at 1387 B 30 (the bottom one in the image to the left) is a lighter color, shows through the page less than the previous seven diplai, has a more open angle, and is farther left than the previous seven diplai. What is most instructive, however, is that this diplai at 1387 B 30 is farther left apparently in order to avoid the ω that shows through from the opposite side of the leaf. There is even more pronounced showing through of ink from the Υ at 1388 B 28 below the sixth diplai at 1387 B 28, but that diplai overlaps the ink that shows through and is exactly in line with the other seven original diplai. These factors together constitute evidence that the sixth diplai, and presumably each of the first seven, was written before page 1388 was written, but the eighth diplai was evidently written after page 1388 was written and positioned farther left to avoid the ink that shows through. In spite of the differences, and especially the different position of the eighth diplai at 1387 B 30, its apricot color and the artistic diplai shape characteristic of the original hand is evidence that it was penned by the same scribe as the ones above it, but after writing the text on the other side of the vellum. The calligraphic beauty of the text of Vaticanus still visible in apricot color ink (e.g. at 1479 B 33–36) and of most of the apricot color diplai, support the view that the same scribe who wrote the text also wrote most of the diplai. The evidence that at least the diplai at 1387 B 36 was written prior to the text on the reverse side of this page leaves little doubt that the same skilled scribe who penned the NT text also penned at least some of the diplai concurrently with the text.

The diplai that differ significantly from standard diplai are the most likely to have been added later. Some diplai are so different in shape and position from all of the original diplai that

reinforcement: 1352 A 8–9 (contrast the original ink apricot color at 1352 A 19); 1358 C 31 (if this is a diplai), 1361 A 31–34 (probable), 1361 B 8–9 (ambiguous), 1455 B 31 (not completely clear), 1455 C 38 (probable). In one instance, 1455 C 30, a diplai may even point backwards, but since the lower stroke aligns with an acute accent, it seems more likely that it shows through from the reverse side of the vellum. In that case, the two dots at the top of the other stroke are all that remains of the top stroke of this diplai. The diplai at 1455 C 28, C 29, and C 37 looks similar to this one but without ink from the reverse showing through.
it is virtually certain that they are by a different scribe, including all of the diplai at 1455 C 27–32, 1455 C 34–42 (pictured at left), 1456 A 1, and 1456 C 1–2, each of which is far closer to text than any of the original diplai. Each of these is smaller and lacks the calligraphic quality of the original diplai. Based on the close correlation between diplai of all shapes and OT citations, the function of diplai appears to be consistent, which is not surprising since many of the citations are explicitly introduced as such.

Head asserts: “the small numbers are also secondary to the dipl[ai].” While this is true as a generalization, there is significant evidence that some diplai were penned after a small number, as the following three examples demonstrate.

Of the three diplai Head cites on the outside of a small number, the one at 1311 A 4 is noticeably farther left than the preceding two diplai at 1311 A 2–3, apparently because the small number \( \mathcal{KH} \) occupies the position below the other two diplai. This diplai was probably penned after the \( \mathcal{KH} \) and is placed farther left to avoid overlapping it. Compared to the previous two diplai, the diplai at 1311 A 4 is also much smaller, lacks the graceful curves of the previous ones, and has a wider angle, which give further evidence that it was penned separately. The shape of the \( \mathcal{K} \) in this rubricated section number is remarkably similar to the fourth letter in the text to its right, \( \mathcal{K} \).

Similarly, in 1310 C 7–9, pictured to the left, two diplai in normal position are followed by a third at 1310 C 9 that is smaller, simpler, and farther left than the first two diplai, apparently in order not to be too close to the small number \( \mathcal{K} \)\( ^{s} \).

Of the two diplai Head cites on the inside of a small number the one at 1244 A 20 is noticeably farther right than each of the three immediately preceding diplai. If it were in line with the preceding three diplai, it would overlap the small number \( \mathcal{N} \). The unusual shape of the diplai, its almost horizontal top stroke, its bottom stroke curving the opposite direction from

\[ \text{Head correctly observes.} \]
typical diplai, its lack of a top hook, its simpler, less calligraphic, style, and its darker ink all add evidence that it was added at a different time. Its position favors a time after $\Xi\Lambda$ was written.

Surprisingly, Head cites all three of these instances to show that “the numbers are secondary in relation to the dipl[ai] … at moments of interference,” which is the opposite of what these examples indicate. His questionable judgment comes from treating diplai like he does distigmai, namely as a unified system: “all are the product of the same process and of approximately the same date.” These examples, however, provide evidence that a scribe may have written some of the smaller, simpler diplai after small section numbers were in the text.

These examples show that evidence some diplai were written later than other diplai should not be interpreted as evidence that all diplai were written at a later time. Since this appears to be true even of diplai, which display far more consistency in positioning than distigmai, it should not be surprising that some distigmai were also written later than others.

DISTIGMAI AND SMALL SECTION NUMBERS

Head provides no indisputable evidence that any distigme should be dated after any small number. He simply attributes five distigmai on the right side of text to displacement caused by the presence of a small section number on the left of that text. As shown above, however, simply being on the right is not adequate grounds for attributing displacement.47

Head’s first three examples have a significant variant at or very near the right hand side of their line that in each case explains the position of this distigme on the right. Manuscripts $L\Theta f^{13} M$ include all three of these variants, and all three occur between Matt 6:1 and 9:13, within six pages, so could easily have come from a single manuscript. The first is the line following $\Lambda\Gamma^{-}$ at 1240 C 23 (Matt 6:1). NA$^{27}$ notes that the last five letters on this line, $\Delta\iota\kappa\alpha\iota$, are replaced by $\epsilon\alpha\chi\eta\mu$ in manuscripts $LWZ\Theta f^{13} M\text{ f k}\ ho\ mae$. The endings of both words are identical with the letters beginning the next line, $\omicron\gamma\nu\mu\nu\mu\nu\nu$, so the difference is precisely at the end of the line. The second is the line following $\Lambda\Lambda$ at 1241 A 7 (Matt 6:5). NA$^{27}$ notes that the last three letters of this line, $\varsigma\omicron\epsilon$, are omitted in manuscripts $\text{R* DLW}\Theta$

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47 Cf. p. 15, above.
f^{13} 33 δκ q συ^{8,h}. The third is the line following the ΝΑ^{48} at 1245 Β 6 (Matt 9:13). NA^{27} notes that just before the last short word in this line (ΤΟΤΕ) manuscripts C L Θ 0281 f^{13} δι γ^{l} συ^{8,hng} sa mae bo^πt add after “I came not to call the righteous, but sinners” the words “to repentance.”

Their common sources and corresponding notation on the right of each line, where each of these significant variants occur give evidence that these are the textual variants noted by these distigmai. Furthermore, a single scribe noting variants in the same manuscript all in this short span of text is more likely to place distigmai on the right side of each of these lines of text than if the variants had been from different manuscripts compared at different times from different parts of the NT. Consequently, none of these three either in isolation or together constitute credible evidence that the small numbers affected the position of any of these distigmai.

Head’s fourth example is the Ἄ at 1274 Β 41. Since there is no distigme anywhere near Ἄ, I presume Head refers to the distigme on the right hand side of 1273 Β 41 as being placed there to avoid overlapping the show through of this number. There is, however, room for a distigme on the left side of this line without touching this number even if the distigme is given the same generous separation from the text that it now has on the right hand side of the line. Thus, its placement was not necessitated to avoid interference with the small section number.

Head’s final example regards the οπ at 1496 Β 10 (Eph 4:17). If the scribe who penned this distigme had positioned it the same distance from the text on the left side of column Β as it is currently on the right, there would have been more space between it and the small number than between it and the text. Consequently, its placement was not necessitated to avoid interference

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Head calls the stigma a digamma, but stigma is the proper term. Chris Hopkins, Nusmismatica Font Project, http://www.parthia.com/fonts/stigma.htm includes photographs of four coins embossed with a stigma from the time of Christ. He states, “G. F. Hill differentiates Digamma ϖ and Stigma ζ, and tells us the ζ was used only as a numeral… The terminological confusion between Digamma ϖ and Stigma ζ appears to be caused by their common numeric value and that ζ supplanted ϖ. Digamma ϖ was used as both letter and number until its eventual disappearance. I have not seen Digamma ϖ used on coins in its numeric sense.” Cf. George Francis Hill, Ancient Greek and Roman Coins: A Handbook (Chicago: Argonaut, 1964; first published in 1899 as A Handbook of Greek and Roman Coins), 215. Herbert Weir Smyth, Greek Grammar (Rev. by Gordon M. Messing; Cambridge: Harvard University Press, 1956), 8 notes that the digamma presumably fell into disuse about the time Athens adopted the Ionic alphabet in 403 B.C., but it disappeared gradually, and was used in Boeotia as late as 200 B.C.
with the small section number. NA\textsuperscript{27} lists no variant on either of these last two lines, so gives no guidance regarding distigme placement.

Head asserts that “there is no evidence for the distigmai interfering with any” small section number. His assertion is undermined by the position of the \( \varepsilon \) at 1278 B 12, which is significantly farther left than any of the small numbers between two columns of text throughout Matthew or Mark. The apparent reason for this is to avoid overlapping the distigme\textsuperscript{49} to its right. This is evidence that a distigme affected the position of a small section number. Head has not identified corresponding evidence of a small number affecting the position of a distigme. Since Head dates the small numbers early, “perhaps fifth century,” unless this is not a distigme, it is evidence against Head’s thesis that all distigmai were written in the sixteenth century.

Because of their sequential nature, the small numbers should be regarded as a unified system, even though at least twenty-two of them were rewritten later after a large number partially obscured the original small number.\textsuperscript{50} This rewriting of so many small numbers around large numbers proves that these repositioned small numbers were written after the large numbers, which Head states were “added at a much later date.” This means that many small numbers were penned in a later era. Since this is indisputable even within such a unified system of sequential numbers, it is not reasonable to dismiss this possibility among distigmai, which lack any analogous cohesion.

DISTIGMAI AND LARGE SECTION NUMBERS

Head alleges “that the large numbers are earlier than the distigmai … because distigmai appear sometimes inside and sometimes outside the large numbers.” Whenever distigmai appear inside large numbers, however, they are in their normal distigme position, so this does not

\textsuperscript{49} Head’s expansive assessment that there are 825 distigme would seem to require that it be regarded as a distigme, but its orientation is not as horizontal as most distigmai, though only slightly more than the apricot color distigme at 1351 A 6 (cf. above, p. 13 note 30), and its dots are closer together than most, though not as close as the apricot color distigme at 1308 B 27.

\textsuperscript{50} 1387 C 13–14, 1388 B 18, 1394 B 37, 1399 B 18, 1401 A 18–19, 1414 A 27, 1418 B 13, 1424 C 2–3, 1427 C 40, 1431 C 25, 1433 C 11, 1457 C 1, 1465 B 19, 1466 A 28, 1467 C 6, 1471 B 20, 1474 B 5, 1478 C 10, 1495 C 20, 1508 C 3, 1511 B 21, 1513 C 10.
demonstrate interference. The only instance Head cites of a distigme on the outside of a large number, 1455 B 31, pictured here, also shares other signs of not being original. It is above the top of the following text line, which is highly unusual. It is farther from text than usual. The left dot is higher than the right dot, which in itself would not be conclusive, but it is paired with two dots also above the top of that line of text but on its right side, over a square with a dot on each side, which is without parallel regarding any distigme. Consequently, I agree with Head that this distigme should be dated after the large numbers.

Head also alleges “that the large numbers are earlier than the distigmai … because on two occasions distigmas are placed in the right hand margin at places where large numbers occupy their normal location in the left hand margin.” His second example, however, is not valid since the distigme is on 1482 C 10, the line above the large number. Furthermore, there is also a distigme in its normal position on the left side of 1482 C 10, proving that its position does not interfere with this large number. Head’s other example, the placement of the distigme on the right side of 1407 B 20 is not conclusive for three reasons. First, as shown above, simply being on the right is not adequate grounds for attributing displacement. Second, if it were on the left side of the text the same distance from the text that it currently has on the right, it would not touch the large number, so the large number does not necessitate this position on the right. Third, if it indicates the NA\textsuperscript{27}-noted textual variant of the \textit{ἐρωτολογεῖσθαι} reading that substitutes \textit{προσλαβὸνι}

\footnote{1426 B 38 (contrast the farther extension of the overbar in \textit{ἔρωτα ἕως} at 1438 C 10 and 1442 C 18, which would have interfered with the distigme at 1426 B 38 if that overbar had extended to the right similarly), 1486 C 20, 1508 C 5 (only the tail \textit{[ʃ]} of the large number at 1508 C 3 extends as far as the distigme, but even it does not come close to the distigme), 1449 A 35 (its position might be construed as affected by the large number, but it is clearly separated from the large number, and this distigme is the same distance from text as the next distigme at 1449 B 11. Furthermore, if the scribe had written this distigme at 1449 B 11 after the large number, one would expect it to be at the more usual mid-character height, since that position would have provided more separation from the bar under the number.}

\footnote{Cf. the criteria listed just before the conclusion of this paper.}

\footnote{Only one apricot color distigme has both dots above the line of text. Cf. below, p. 27, item 6, and note 80 in the description of the range of apricot color distigmai characteristics.}
for ζηλώσαντες on 1407 B 20 it may be on the right since ΠΡΟΣΛΑΒΟΜΕ is at the end of the immediately following line B 21, so the position on the right helps to identify the variant.

Head asserts that “there is no evidence for the distigmai interfering with any [large section number].” There is, however, evidence that distigmai interfere with large section numbers. The large number \( \text{Θ} \) at 1486 C 20 of the distigme, which is in a normal distigme which identifies it as a number, extends over (2 Cor 12:11) is positioned to the left location,\(^{54}\) even though the over-bar, the distigme. In every other instance of a large number from the beginning of 1 Corinthians all the way to the end of the surviving uncial text in Hebrews, the overbar is always directly over each large number, never extending out beyond the number like this. The only other instance of a bar extending to the right of a large number \( \text{Θ} \)\(^{55}\) like this, 1416 C 17 at Acts 23:1, also extends over an addition in both instances the additional material in the the bar beyond the large number theta. This is evidence that the distigme at 1486 C 22 affected the positioning of this large number.

Another instance where a large number’s position appears to accommodate for the presence of a distigme is at 1508 C 5, where the tail of the large number at 1508 C 3 is unusually far left, apparently to avoid intruding on the distigme in a normal distigme position to its right.\(^{56}\)

Consequently, although there is one instance (1455 B 31) where a variety of evidence points to a distigme being written after a large number, in other cases a large number appears to have been written so as to avoid overlapping an already existing distigme. Thus, as regards large numbers, Head has overstated the evidence for and has not acknowledged evidence against his generalization that “the distigmai appear secondary.”

\(^{54}\) The large \( \text{Θ} \) is 4 mm from the adjacent text. Some of the large Greek letters representing numbers come much nearer text than this one, e.g. the first one preceding it (1483 C 9, where \( \text{Ζ} \) is within 2 mm of text) and the third one preceding it (1481 C 33, where \( \text{Ξ} \) is within 1.5 mm of text).

\(^{55}\) The bars over every other large number (these begin in Acts) ending in \( \text{Θ} \) are centered over the \( \Theta \): 1386 B 23, 1380 C 40, 1397 A6, 1403 A 5, 1410 A 10, 1424 C 3, 1474 B 5.

\(^{56}\) Although a number tail is rarely almost this far left (e.g. 1510 B 21, but even its tail extends
DISTIGMAI AND RE-INKING IN THE MIDDLE AGES

Head asserts that distigmai “are later then the re-inking.” But if that is so, how is it that traces of the original ink color of the codex protrude from the apparently re-inked distigmai and why would only one dot of a distigme appear to be re-inked?\(^{57}\) Why on the same page as forty-five of the fifty-one distigmai that match the color of the original ink\(^{58}\) is there at least one other distigme in a different color? Why do so many of the distigmai appear to have been re-inked along with the body text?

Willker argues that the distigme at 1498 C 3 preceded the medieval reinforcement:

“A Sigma is squeezed between [distigme] and text.” From this he concludes,

“The [distigmai] are older than the reinforcement. Since the reinforcement is dated by Tischendorf to the 10th or 11th CE, the [distigmai] must be earlier than this date.”\(^{59}\)

This C inserted between a distigme and text is the smallest syllable change letter added before a line of text from Romans through the end of the uncial text. Every other instance of C\(^{60}\) or any other letter\(^{61}\) from Romans on is noticeably larger. Most would have overlapped the distigme, confirming Willker’s judgment. Willker’s judgment is incompatible with Head’s thesis that all distigmai are late, from the time of de Sepúlveda.

DISTIGMAI AND OTHER MARGINALIA

Head appeals to six other marginalia that he alleges to confirm “that the distigmai are late additions to the margins of Codex Vaticanus,” but none of them give clear support for this, whereas several provide evidence against his thesis. First, he states that the liturgical note symbolizing \(\text{A} \, \text{F} \, \text{X} \, \text{H}\), at 1409 C 11 interferes with a distigme at 1409 C 10 and a similar symbol at 1471 A 6 interferes with the distigme at 1471 A 4. Both distigmai, however, are in locations typical to distigme. The distigme at 1471 A 4 is two lines above the liturgical note, which is too

\(^{57}\) Shown in the photograph above, p. 10.
\(^{58}\) All except 1345 B11, 1346 B 40, 1346 B 19, 1350 B 18, 1356 B 24, 1370 A 32. Cf. note 1.
\(^{59}\) \url{http://www-user.uni-bremen.de/~wie/Vaticanus/squeezed.html}.
\(^{60}\) 1449 B 7, 1456 A 10, 1456 B 36, 1458 B 3, 1465 B 5, 1473 B 17, 1481 A 21, 1493 C 32, 1514 B 16, 1517 A 17.
\(^{61}\) 1451 B 31, 1452 C 7, 1463 B 42, 1465 A 49, 1469 B 30, 1499 C 14, 1504 A 3, 1506 A 20.
far away to affect the distigme position. The distigme at 1409 C 11 is actually farther left than
the distigme just two lines above it, whereas if its scribe had positioned it to avoid
interference with the liturgical note, it would have been farther right like the
preceding distigme. Furthermore, the ✡ at 1471 A 4 is positioned as usual\textsuperscript{62}
above the slanted ſ in \textit{A ſ}, whereas the ✡ at 1409 C 10 is midway between the
two letters \textit{A ſ}. This indicates that the ✡ at 1409 C 10 was adjusted left to avoid
overlapping the distigme. This provides evidence that it was written after the distigme, the
opposite of Head’s contention. In this case, Head’s own evidence, carefully examined,
dermines his thesis.

Second, Head appeals to “marginal notes normally taken to signal pious approval of the
contents of the passage” as interfering with the position of a distigme at 1408 B 9,\textsuperscript{63} 1416 C,\textsuperscript{64}
and 1426 C.\textsuperscript{65} Each of these distigmai, however, is in a customary distigme location. To support
Head’s thesis, they would have to have been displaced in some way. Consequently, they provide
no clear support for Head’s thesis. To the contrary, if the position of the distigme at 1408 B 9
had been influenced by this pious symbol, it should be farther right, like the
other two distigmai on this page: Its position this far left is more natural if it was
written prior to the
adjacent pious symbol rather than after it. Consequently, it is evidence against any thesis that all
distigmai are later than these pious symbols.

Third, Head states, “In one significant passage, a dittography has resulted in the same
passage being copied out twice. The distigme is placed only against the second, re-inked

\textsuperscript{62} The ✡ is also positioned predominantly over the slanted ſ at 1404 A 18, 1405 A 35, 1406 A
28, 1407 A 39, 1408 A 26 and even on the right side of it at 1388 C 19. Only when the ſ is
vertical, as at 1393 A 27 (right side) and 1394 B 31 is the ✡ more likely to be centered between
the \textit{A ſ}, and even when it is vertical it may be more over the ſ, as at 1384 C 39 and 1393 C 41,
or directly over the ſ at 1396 B 8 (right side).

\textsuperscript{63} If this distigme’s position had been influenced by this pious symbol, it should be farther right,
like the other two distigmai on this page. Its position this far left is evidence that it was written
prior to the adjacent pious symbol, not after it, so it is evidence against Head’s thesis.

\textsuperscript{64} There are distigmai at lines 8 and 27, but neither is near another mark. Perhaps Head means
1416 B 16 or 25, but they both show through from the other side of the vellum.
passage, suggesting the distigueme was placed after the re-inking (dated by Tischendorf to the tenth or eleventh century).” It appears, however, that this dittography was noted at the time of the original production, since deletion hooks that appear from the 1999 facsimile to match the apricot color of the original ink surround each line of the duplicated text. These marks clearly guided the reinforcer to retrace only over the text not marked as deleted text. The scribe who added the distigueme at 1479 B 39 naturally did the same. Therefore, this instance should not be appealed to as evidence that its distigueme is late. Since, however, the dark chocolate brown color and intensity of the ink of the re-inking appears to be a perfect match for the adjacent distigueme, this does constitute evidence that the distigueme (to be more precise, probably its re-inking) should be dated at the same time as the re-inking, which is incompatible with any thesis that all Vaticanus distigmai were written after the Middle Ages.

Fourth, Head states, “the famous marginal comment at Heb 1.3 seems to have caused the displacement of [a] distigueme to the right hand margin.” The position of this distigueme on the right side of the margin of 1512 B 17 is naturally explained, however, by the textual variant noted in NA27 of the insertion of τημων just four letters from the end of this line in Μ2, D1 H 33 1881. Not only is there room for a distigueme on the left without interfering with the marginal comment, as shown above, simply being on the right is not adequate grounds for attributing displacement.66 Willker, asking why this distigueme is on the right side, judiciously states, “Nobody knows for sure.”67 Head, however, draws a conclusion not only about this distigueme, but that “the distigmai … are later than a thirteen-century marginal comment.”

Fifth, Head states, “on one occasion [a] distigueme seems to be placed in order to avoid interference with a large initial letter.” Presumably, he refers to the distigueme on the right side of 1277 C 3 (Mark 1:1) or the right side of 1443 C 3 (Jude 1), but both are by the far right column of the open codex, where distigmai are normally on the right hand side. In any event, the last

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65 There are distigmai at lines 11 and 32, but both are in a normal distigueme position. Perhaps Head refers to the overlapping of the distigueme and the faint sweeping stroke at 1426 C 32, but since both are in their standard positions, it is unclear which was written first.
66 Cf. p. 15, above.
word of 1277 C 3, Τ-ω, is replaced with ΤΟΙC in manuscripts A W f13 R vgms syh (bo); Irlat, and the end of the last line of 1443 C 3, ΗΓΑΠΗ is replaced in P R with ΗΓΑΠ[C] according to NA27, which explains the position after the text. Head may, however, refer to two very faint dots at 1499 A 3, but Willker is probably right to regard this as offset from 1498 C 3.68 Both pairs of dots have the same orientation, the outer dot of 1498 C 3, being low like the inner dot of the offset at 1499 A 3, which is much lower than typical distigmai, their location on the page makes it clear that this is merely offset, and NA27 lists no textual variant on this line. Or Head may refer to the mark on the right side of text between 1502 C 1–2 or the two faint dots at 1506 C 2 that merely ink that bleeds through69 or shows through from the other side of the vellum. None of these provides any evidence of a distigme being placed to avoid interference with a large initial letter.

Sixth, following Curt Niccum,70 Head states that the distigmai “are later than the fifteenth-century minuscule text of Hebrews” based on “the presence of at least one distigme on the fifteenth century minuscule page.” Skeat is probably correct, however, that the minuscule leaves appended to Vaticanus replaced damaged uncial leaves.71 On the first page of the minuscule text there is only one distigme by its first column (1519 A 12 by Heb 9:18–19), two much smaller, non-horizontal, raised dots of undetermined purpose by its second column (1519 B 12 by Heb 10:1) and also a chapter break symbol at the beginning of Hebrews 10 (1519 B 8). Both the distigme and chapter symbol mimic the form of these symbols in the preceding uncial text, e.g. 1518 B 5, and both occur in the minuscule text only here.

68 Willker, http://www-user.uni-bremen.de/~wie/Vaticanus/imprints.html calls it an “imprint.”
69 The ink that bleeds through on the right side of 1502 C 1–2 comes from the hole in the vellum at the top of the large initial at 1409 A 1–2, through which both normal and red ink penetrated.
The simplest explanation for distigme and the chapter break symbol near the beginning of the first minuscule leaf is that, in order to preserve these markings, a scribe copied both of these symbols from the damaged uncial leaf into their corresponding positions in the first minuscule page that replaced it. Niccum objects that if a scribe had copied these symbols from a torn leaf, he also would have copied other original markings such as paragraphoi. He assumes that paragraphoi were on whatever then remained of this damaged uncial page. This is a precarious assumption since there is only one paragraphos in the previous complete uncial page, and all three distinctive features occur in a one-inch-by-four-inch portion of the first miniscule page (4 of the 110 square inches of a full page). It is also doubtful that someone like de Sepúlveda, with the scholarly care and observant eye necessary to document textual variants, would not only mark up this very ancient manuscript but would continue to note textual variants even after the change from uncial to the obviously different and later minuscule text. My explanation following Skeat, however, accounts for this naturally just as it explains the chapter symbol, namely that they were copied from the damaged uncial leaf into corresponding positions in the minuscule text. In contrast, Head’s thesis provides no explanation for the chapter symbol.

Furthermore, the text where the only distigme occurs in the minuscule text was the standard reading at the time it was written and so probably would not have been marked as a variant reading at that time. My text of Erasmus’s Greek NT has the identical text that is in the minuscule text of Vaticanus next to this distigme, so it appears that Erasmus’s Greek text would not account for this distigme in any event.

In summary, none of the examples Head adduces from these six other categories of marginalia clearly support his thesis, but three undermine his thesis, several exemplify incorrect analysis of the data, and others raise questions that his thesis does not answer.

JUAN GINÉS DE SEPÚLVEDA (1494–1573)

Head asserts, “92% of all the distigmai in the Gospels match passages of variation between that exact line of Vaticanus and the Greek and/or Latin text of Erasmus. If we further

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72 This fits Skeat’s understanding that the minuscule leaves appended to Vaticanus probably replaced damages uncial leaves, “The Codex Vaticanus,” 454–65.
take account of variant readings noted by Erasmus in his Annotations (again offering contemporary manuscript evidence) this rate extends to 98%.” Head does not identify which edition of Erasmus’s Greek NT gave these percentages or what criteria he used to identify variants. His paper lacks documentation that de Sepúlveda marked up Vaticanus or actually sent a list of differences to Erasmus. Nor does Head give any evidence that fifteenth or sixteenth century scribes conventionally used distigmai to note textual variants or that de Sepúlveda was even aware of this use for distigmai. He vacillates between referring to Greek and Latin variants. Head’s conclusion further broadens the pool of comparison, “Sepulveda carefully compared Vaticanus with other manuscripts in Greek and Latin, and with Erasmus’s edition. Comparison with sixteenth-century witnesses accounts for 98% of the distigmai in the Gospels.”

Erasmus’s Latin text is not a reproduction of any other Latin text nor does it have any independent value in establishing the original form of the Greek NT text or its subsequent development. If one is looking for textual variants between Vaticanus and Erasmus’s text, the only text of Erasmus that is relevant is his Greek text. Even if there were a justification for including Latin texts, judging textual variants in different languages is highly subjective. In this writer’s judgment there are over 100 instances where the NIV text does not accurately reflect the underlying Greek in passages in Paul’s letters related to the ministry of women in church. Yet the NIV is also based on the NA text. Consequently, one cannot assume that differences in translation, whether English or Latin, necessarily or even usually identify underlying Greek textual variants. Including such judgments can vastly inflate the number of “textual variants.”

Since distigmai occur throughout Vaticanus, if de Sepúlveda were the source of all the Vaticanus distigmai as Head’s thesis states, it would mean that de Sepúlveda must have compared the entire text of Vaticanus with Erasmus’s Greek NT. Do the distigmai mark all or virtually all of the locations where there are textual variants between Vaticanus and Erasmus’s text? To the degree that differences between Erasmus’s text and Vaticanus are not marked by

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74 This is questioned by Carlo M. Martini, *Il problema della recensionalità del codice B alla luce del papiro Bodmer XIV* (Analecta biblica 26; Rome: Pontificio Inst. Bibl., 1966), 8, note 20; who suggests that the existence of these readings was mentioned to Erasmus but that the list was never actually sent to him, cf. Stephen Pisano, “III. The Text of the New Testament,” pages 27–41 in the *Prolegomena* volume to *Bibliorum sacrorum graecorum Codex Vaticanus B*. 
distigmai, Head’s thesis is weakened. The most obvious way for Head to establish the thesis that de Sepúlveda penned all the distigmai in the process of comparing Erasmus’s edition to Vaticanus, would be to compare the Greek NT text of Erasmus to Vaticanus and demonstrate the following two statements to be true:

1. Wherever there is a textual variant between these two texts, there is a distigme.
2. Wherever there is a distigme, there is a textual variant between these two texts.

Preliminary comparison of Erasmus’s Greek NT text to Vaticanus text by distigmai indicate that there is not anywhere near a 92% match. The first Vaticanus page Head displayed in his talk, page 1428, containing nine distigmai, has only four variants in the nine distigmai lines on that page. This is a mere 44% match. It is far closer to the 35% of random lines in Vaticanus that contain a significant variant than to either the 86% in lines by a distigme adjacent to a bar/obelus or the 71% in lines by an apricot color distigme. This disproves the idea that a comparison with Erasmus’s Greek NT text explains all the Vaticanus distigmai.

Comparisons with Majority text () variants do not give anywhere near Head’s figures, either. In only 45% of the fifty-one Vaticanus lines next to an apricot color distigme does NA list a variant in the Majority text (). Consequently, even if Erasmus’s text has a textual variant in every one of these, these would constitute only a correlation. Similarly, Willker writes, “Did Peter say 92% are TR variants? Compared to what? Vaticanus? Vulgate? NA? — I would like to see a table. In my count only about 50% are Majority/TR variants (vs. NA).” These

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75 The four lines differing in Erasmus’s Greek NT (Basil: Nicolaum Bryling, 1553) are in James 3:2–3, 5, 6, and 12b. The five without a variant are in James 3:7, 12a, 15, 17 and 4:4.
76 Cf. above, p. 14 and the description of the chi-square text related to this in n. 1.
77 As judged by NA variants.
79 NA lists a variant in two of these that are not listed in NA: 1277 C 19 (Mark 1:5) and 1356 B 24 (John 5:25). Cf. Payne and Canart, “Distigmai.”
80  has a variant reading in 23: 1243 B 21, 1277 C 19, 1279 B 1, 1279 C 41, 1287 C 29, 1296 A 14, 1300 A 39, 1308 B 27, 1309 A 23, 1332 B 15, 1339 A 42, 1342 C 41, 1345 B 11, 1346 B 40, 1349 B 19, 1351 A 6, 1357 C 1, 1370 A 32, 1382 C 39, 1401 C 41, 1459 C 41, 1466 B 6, 1499 C 42. Note 2 has a link to the list of all 51. This takes into account NA convention stated on p. 12* that “m has the status of a consistently cited witness of the first order. Consequently in instances of a negative apparatus, where support for the text is not given, the reading attested by m may safely be inferred: if it is not otherwise explicitly cited, it agrees with txt (= the text).”
comparisons indicate that there is a very weak correlation between distigmai and significant textual variants in Erasmus’s Greek NT text compared with a very strong correlation between distigmai and textual variants as listed in the NA\textsuperscript{27}. Head’s 92% and 98% figures give the impression there is an incredibly high correlation between distigmai and variants in Erasmus’s Greek text, when in fact there is not.

Unless Head clearly defines what he means by “textual variant” his figures of 92% or 98% are meaningless. The inclusion of minor variants and any supposed difference in Latin texts would vastly inflate and undermine the significance of these percentages.

Furthermore, if de Sepúlveda himself penned all the distigmai in order to identify locations that differed from Erasmus’s Greek NT text, as Head’s thesis seems to postulate (“a comparison between Erasmus’s edition and this most ancient manuscript”), why does he speak of only 365 variants instead of 825\textsuperscript{82}? This leaves more than half the distigmai unexplained and seriously undermines Head’s thesis that “all are the product of the same process and of approximately the same date.”

Since according to Head, de Sepúlveda’s concern was to establish errors in Erasmus’s Greek NT, of copy of Erasmus’s Greek NT is not only the most logical place to note them, it is the only text that would include all the suspect readings. Nevertheless, by Head’s thesis de Sepúlveda had the audacity to pen “perhaps 825” distigmai in Codex Vaticanus. This requires not only that de Sepúlveda wrote on virtually every leaf of Vaticanus, but that he turned pages containing “more than fifty” of them while the ink was so wet these distigmai offset onto the facing page! It is hard to imagine someone in de Sepúlveda’s position treating Vaticanus in such a careless manner to note variants with Erasmus’s or other texts. It also entails a man of de Sepúlveda’s sophistication not noticing the change from uncial to minuscule text until after he had written at least one distigme in it.

Head’s thesis, although purporting to account for all distigmai, is particularly weak in what it does not explain. It does not explain the distigmai that occur where no known manuscript has a significant variant. Such occurrences are natural, however, if the original scribe was noting

\footnote{The number of distigmai by Head’s reckoning.}
variants in the fourth century since most, if not all, of the manuscripts available to the scribe of Vaticanus are no longer extant. It does not explain distigmai where significant variants are attested only in D alone or Ƥ alone or the diversity of textual traditions represented by distigmai. Willker observes that: “In general there is no CLEAR pattern in the witness support for the various umlauts. We have support from - D only, - Byz only, - D + Byz, - P46 only, - some minuscule MSS only. IMHO this indicates that not one single MS has been used for comparison, but more than one.”

83 Nor does it explain the distigmai in the Vaticanus OT.

CONCLUSION

This investigation of the marginalia in Vaticanus demonstrates the diversity both of the characteristics of various categories of marginalia and of their interactions with each other. This diversity undermines any view that all diplai, all distigmai, and all small section numbers are, respectively, unified systems, each category of marginalia the product of a single process of approximately the same date.

Most diplai, marking Scripture quotations, were written concurrently with the text. These original diplai’s apricot color ink, distinctive calligraphic shape, and relative consistency of position in the margins support this conclusion. It is further supported by the presence of a dipl in 1387 B 28 over a letter that shows through from the reverse, indicating that this dipl was penned prior to the text on the reverse.

Distigmai that correspond closely to the shape and location of distigmai in Vaticanus are also present in the margins of the fourth or fifth century in MS of Origen’s Hexapla, Codex Colberto-Sarravianus (LXX G). There is no dispute that these are a simplified form of the obeloi used to mark LXX text that is not in the Hebrew Scriptures. The conjunction of distigmai with corresponding simplified colon-shaped metobeloi in the midst of the LXX G body text proves that both were part of the original production of LXX G and demonstrates the very early use of distigmai to mark the location of textual variants. Since the LXX G scribes near the time of 83 Willker, “Umlauts: Distribution of the Umlauts,” exactly reproducing Willker’s bold text.

84 http://www-user.uni-bremen.de/~wie/Vaticanus/observations-OT.html confirmed 2/11/2010. Willker’s list now cites 17 distigmai in the LXX of Codex Vaticanus at http://www-user.uni-bremen.de/~wie/Vaticanus/umlauts-OT.txt. Willker notes, “Even with the limited Rahlfs apparatus … of 14 safe [distigmai] I have found variants for 10 of them.”

85 Apart from a few exceptions noted on above, pages 18-20.

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Vaticanus were aware of textual variants and used distigmai to identify their locations, it is clearly wrong to assume that the notation of textual variants with distigmai is late or that this is such a rare phenomenon that it could only have happened once.

Paul Canart’s assessment that fifty-one distigmai match the faded original apricot color ink of Codex Vaticanus supports the view that at least these distigmai were penned as part of the original production of Vaticanus. Furthermore, in the text adjacent to two distigme-obelus symbols, there are gaps at precisely the location of an extended interpolation. The gaps in text adjacent to paragraphoi almost always begin with a punctuation mark identifying the gap as signifying a paragraph break, but there is no punctuation mark at the beginning of these two gaps. These gaps in the text provide evidence that these distigme-obelus symbols were written concurrently with the text to mark the location of these particularly well-known interpolations. Such concurrent writing of distigmai and text was probably rare, however. Offset apricot color ink on the page opposite some apricot distigmai proves that these distigmai were added after the preliminary binding of the codex. In any event, extensive collation of Vaticanus with other manuscripts would only be feasible after the codex was bound.

Distigmai that exceed the range of any of the eight characteristics of the fifty-one apricot color distigmai identified on pages 12-14 or is at the extreme end of several of them is doubtful to have come from the original production of Vaticanus. The usefulness of these criteria is corroborated by each of the clear instances of interference by distigmai penned later (pp. 16, 23).

The medieval re-inking of Vaticanus is abundantly attested for text and selectively attested for distigmai. Just as there are hundreds of instances where portions of text or isolated letters were not re-inked and show the original ink of the codex, so also there are fifty-one instances were distigmai were not re-inked and whose ink matches the color of the original text. The clearest evidence of distigme reinforcement is where apricot color ink protrudes from under a dark chocolate brown distigme matching the color of the surrounding re-inked text (p. 10). Distigmai that match the color of adjacent reinforced text provide evidence that they were reinforced\(^{86}\) in the Middle Ages. This evidence undermines any later date for these distigmai.

\(^{86}\) Or added, though that requires assuming the reinforcer in addition to reinforcing what was already on the page was also adding new distigmai. If these distigmai note the location of textual
Hopefully, scientific analysis of the distigmai, such as multi-spectral imaging or X-ray Fluorescence imaging, will provide confirmation of the presence or absence of underlying apricot color ink and confirm which distigmai are in ink matching the reinforced text.

The central error of Head’s thesis is his apparent assumption that all distigmai were penned at the same time. Without this assumption Head has no basis for the leap from evidence that some distigmai were written later than other marginalia to his conclusion that all distigmai were written after all other marginalia. This assumption is difficult to reconcile with the great diversity in color, shape, and location of distigmai and all the evidence cited above that distigmai were written before other marginalia or were reinforced in the Middle Ages. In order to modify his thesis to account for all the data that is incompatible with it, Head will have to abandon both his assertion that all distigmai were written at approximately the same time and that all distigmai were written late. Without these assertions, however, Head’s thesis is stripped it of its power to deny the originality of distigmai written that match the color of the original ink of Vaticanus.

Head’s assertions about de Sepúlveda lack documentation and specificity. His thesis requires that de Sepúlveda not only wrote on virtually every leaf of Vaticanus but carelessly turned pages containing “more than fifty” of them while the ink was so wet these distigmai offset onto the facing page of this manuscript, which has a history of being jealously guarded. Furthermore, although purporting to account for all distigmai, this thesis does not account for the distigmai in the Vaticanus OT.

This investigation concludes that the interaction of distigmai with other marginalia is compatible with the originality of the apricot color distigmai but that it is not compatible with Head’s thesis that all distigmai originated with de Sepúlveda in the sixteenth century. The originality of the apricot color distigmai also explains why there is a statistically overwhelming correlation between apricot color ink distigmai and significant textual variants of the sorts identified by the NA\textsuperscript{27}. Furthermore, distigmai provide a new window into the early history of the NT and give significant insights into the development, transmission and meaning of the NT.

variants, it requires the unexpected eventuality that in addition to re-inking, the reinforcer was also collating Vaticanus against other manuscripts and marking the locations of textual variants.