

## My Thoughts on the Reports by Venetia Anastasopoulou

A little over fifty years ago, a professor of ancient history named Morton Smith visited the Greek Orthodox monastery of Mar Saba in the Judean desert during a summer spent searching for ancient manuscripts. Near the end of his stay he found a document purporting to be a copy of a letter by the church father Clement of Alexandria (ca. 150–215). This document was written on the endpages of a seventeenth-century book in a style of Greek handwriting characteristic of the eighteenth century. Smith photographed and catalogued the letter, identifying it with the tag Mar Saba 65.

Clement's letter reveals surprising new information about the Gospel of Mark. Responding to an inquiry from someone named Theodore, Clement tells of how Mark wrote his gospel in Rome to serve the needs of catechumens, but subsequently expanded it in Alexandria in order to meet the needs of Christians advancing in knowledge. This "mystic" version of his gospel proved irresistible to one Carpocrates, who procured his own copy by nefarious means and then revised it to support his "blasphemous and carnal doctrine." We may infer from the letter that Theodore had recently encountered some of Carpocrates' followers, who appealed to this adulterated gospel as an authoritative work that Mark composed in Alexandria. Troubled by their descriptions of its contents, Theodore then wrote to Clement to find out the truth. The *Letter to Theodore* is Clement's reply. It explains the origin of the gospel that is troubling Theodore and endeavors to prove that the true mystic gospel does not contain certain statements that he had asked about. To prove his point, Clement quotes verbatim one of the adulterated stories, a much shorter version of the raising of Lazarus (see John 11) in which Jesus raises a young man in Bethany and a week later instructs him in the mystery of the kingdom of God. Afterward Jesus refuses to meet the young man's sister, his mother, and Salome in Jericho. The manuscript ends in midsentence as Clement begins to give "the true interpretation."

The story of the manuscript's reception by scholars of Christian origins is not a happy one.<sup>1</sup> Suffice it to say, the fact that this manuscript is our only evidence for the existence of the mystic Gospel(s) of Mark and the fact that its custodians in Jerusalem have not made it available for forensic analysis have left room for doubt about this document's legitimacy, and the favorite theory among sceptics is that Smith forged it himself. A few years ago a patent attorney named Stephen Carlson attempted to prove this theory scientifically by employing the tools that questioned document examiners use to distinguish between authentic and forged handwriting.<sup>2</sup>

The idea to bring these tools to bear on the debate was very good. Carlson's attempt to do the analysis himself, however, was not helpful, for he had no training or experience in this field. Competence in distinguishing between real and forged writing is acquired through years of training in the methods of questioned document examination (QDE) in the context of analyzing both authentic and forged writings in the language in question. I stressed this fact at the

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<sup>1</sup> For overviews, see, e.g., Charles W. Hedrick, "The Secret Gospel of Mark: Stalemate in the Academy," *Journal of Early Christian Studies* 11 (2003): 133–45; idem, "An Amazing Discovery," *Biblical Archaeology Review* 35, no. 6 (November/December 2009): 44–48, 86, 88; Scott G. Brown, *Mark's Other Gospel: Rethinking Morton Smith's Controversial Discovery* (Waterloo, Ont.: Wilfrid Laurier University Press, 2005), 3–19.

<sup>2</sup> Stephen C. Carlson, *The Gospel Hoax: Morton Smith's Invention of Secret Mark* (Waco, Tex.: Baylor University Press, 2005), 25–32.

conclusion of my first assessment of Carlson's book, where I quoted the following statement by Ron N. Morris:

It cannot be over-emphasized that even the completion of a graduate degree program in forensic sciences does *not* qualify the individual as an expert in any of them. The graduate must still take part in a trainee/apprenticeship program before he is eligible to qualify as a competent, qualified, forensic expert in any forensic science, especially that of a FDE [forensic document examiner].

At the conclusion of his trainee program, the new FDE should continue to work daily with competent, qualified examiners for approximately two or more years before being considered senior enough to work independently.

After quoting these words I recommended that "one of our societies for biblical scholars . . . take on the task of arranging for some highly qualified and suitable professionals to examine the photographs in consultation with experts in eighteenth-century Greek handwriting."<sup>3</sup> Naturally, I was very pleased when I learned that Hershel Shanks had enlisted a Greek paleographer (an expert in old handwriting and its development) and a Greek questioned document examiner to study Mar Saba 65 and consider whether Morton Smith could have forged it. Shanks asked the two experts to work independently, in order not to influence each other's opinions. Both received high-resolution scans made directly from both the original black-and-white photographs and the newer color photographs taken by a librarian at the Jerusalem Patriarchate in 1976. Although the paleographer has not yet submitted a report, the document examiner, Venetia Anastasopoulou, has done so, and in April 2010 **BAR** posted her thirty-nine-page report on their website.<sup>4</sup> After comparing the writing characteristics of Mar Saba 65 and sufficient samples of Smith's Greek handwriting, she concluded that Smith lacked the ability required to produce the rhythmic and skilful handwriting in Mar Saba 65, for his own proficiency in Greek "is like that of young school children" (37).<sup>5</sup>

Although this conclusion generated some reflection among Smith's accusers, some felt that they could reconcile this finding with the theory that Smith forged the letter by supposing that Smith was responsible for its contents and some unknown person conspired with him to forge the manuscript itself. In response to this position, Shanks asked Anastasopoulou to clarify whether the manuscript shows signs that it is a forgery. Her one-page supplementary report lists six indications of natural writing that examiners look for and eleven indications of unnatural writing, and concluded, "The Secret Mark letter, as written in detail in my analysis report, is written in a natural and spontaneous way and in my opinion, does not have such indications so to make us think of a suspicious writing." She cannot say more than that without knowing whose handwriting is represented in Mar Saba 65 and comparing the manuscript against known standards of that person's handwriting.<sup>6</sup>

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<sup>3</sup> Ron N. Morris, *Forensic Handwriting Identification: Fundamental Concepts and Principles* (San Diego, Calif.: Academic Press, 2000), 198, as cited in Scott G. Brown, "Reply to Stephen Carlson," *Expository Times* 117 (2006): 149.

<sup>4</sup> **BAR**, "Did Morton Smith Forge 'Secret Mark'? A Handwriting Expert Weighs In," *Biblical Archaeology Review*, <http://www.bib-arch.org/scholars-study/secret-mark-handwriting-analysis.asp>.

<sup>5</sup> Venetia Anastasopoulou, "Experts Report Handwriting Examination," *Biblical Archaeology Review*, <http://www.bib-arch.org/pdf/secret-mark-analysis.pdf>. Page references in parentheses are to this report.

<sup>6</sup> "Venetia Anastasopoulou: Can a Document in Itself Reveal a Forgery?" [<http://www.bib-arch.org/scholars-study/secret-mark-handwriting-document-reveal-forgery.asp>].

Although I am not trained in QDE myself but only an interested participant in the debate, I believe that Anastasopoulou's two reports provide us with the information we need in order to assess the probability that Mar Saba 65 could be a forgery of an eighteenth-century Greek monastic hand. That is because many of the characteristics of Mar Saba 65 that she identifies in her first report are precisely the qualities that experts in QDE consider most valuable in distinguishing between authentic and forged writing. My intention therefore is to assess the plausibility of the modern forgery theory by surveying what the experts have to say about these qualities.

I will begin by quoting Anastasopoulou's characterizations of Mar Saba 65 and highlighting in bold the terms or concepts that factor in the literature on QDE:

This calligraphy writing, with so many abbreviations and ligatures looks like **an artistic design of good quality**. Although it is a **difficult style of writing** and needs a lot of practice in order to be able to write in this way; the text is **written spontaneously** with an **excellent rhythm**. The letters and their combinations are **curved fluently** while at the same time the grammatical rules are followed. The movement of the writing indicates a hand used to writing in this manner. **The letters are written unconsciously**. (9)

The letters have small differences which are within the range of their **natural variations**. (9)

The graphic movement is plastic, soft and flexible<sup>7</sup> with **very good rhythm**. (12)

The format of the letters is legible, despite the abbreviations and ligatures and calligraphy. The writing contains arcades and curves and the letter endings are mainly steady. **The baseline is rather stable with minor wavy lines**. It is **written in high speed** and although [it] is a connected writing, there are letters written one by one in a word, but this does not deter the **good writing rhythm**. (12)

As we see from the photographs, **the arrangement of the text on the page is good**, with sufficient margins around the text. (13)

Conclusion: **The whole writing shows freedom, spontaneity and artistic flair**. It also shows a **skillful penmanship** of a well educated and trained writer who **uses the language effectively in expressing his thoughts**. (13)

The writing in the disputed document is **smooth, continuous, free** and one which shows **artistic and masculine ability**.<sup>8</sup> (19)

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<sup>7</sup> If by "plastic, soft and flexible" Anastasopoulou is referring to smooth variations in pen pressure, then this, too, is a feature that examiners consider. Forgeries generally lack variation in pen pressure or vary in an erratic way, so this quality points to authenticity. For discussion, see Albert S. Osborn, *Questioned Documents* (2d ed.; Albany, N.Y.: Boyd Printing Co., 1929), 100–1, 126–28. Except where indicated, all subsequent references to this work are to this second edition.

<sup>8</sup> I assume that "masculine ability" means that the writing is strong rather than tentative.

**The experienced writer is one who focuses on his thoughts and the text rather than in the actual process of writing. In our questioned document it is clear that the writing is automatically written in the paper and more over the letters are written calligraphically and not rigidly and copy booked. (19)**

Thus Morton Smith could possibly imitate a copy booked, immature and impersonal writing, but it would be unlikely for him to imitate a writing **with high level rhythm**. (37)

Her supplementary report contains the additional observation that the writing style of this document is “consistent.”

We can bring these observations together into a short summary: this is a “difficult style” of Greek handwriting that requires “skillful penmanship” to produce, yet it is “written spontaneously [cf. ‘automatically,’ ‘unconsciously’] with an excellent rhythm” and “in high speed.” The arrangement on the page is good. The writing is strong, “smooth,” and “continuous,” displaying “freedom, spontaneity and artistic flair.” The style is consistent throughout. Finally, “the letters have small differences which are within the range of their natural variations.”

For the meaning and significance of these observations, along with their rationales, we may now consider what the textbooks state about these qualities.

### Difficult and Consistent Style

Forging a document is not a simple matter of picking up a pen and imitating someone else’s handwriting. In the judgment of Albert S. Osborn, “the successful forgery of a whole document is a task of extraordinary difficulty and requires intelligent attention to many particulars and details that do not enter into the task of fabricating only a signature.”<sup>9</sup> The degree of difficulty varies with the skill and complexity of the hand being imitated. Unskilled handwriting (like that of children or the semiliterate) is the least challenging writing to forge, because it is produced by slow and uncertain movements, which are similar to the drawing movements of forgery. By contrast, skilled writing is very difficult to imitate, because it contains features that cannot be replicated except through equally quick and skilful pen movements. Osborn put it this way: “That writing is imitated with the greatest difficulty which is strong, smooth, free and skilful and that cannot be correctly reproduced by a slow, copying movement.”<sup>10</sup> The four qualities that Osborn highlights in this statement are characteristics that Anastasopoulou ascribes to Mar Saba 65. Thus we are dealing with a whole document in a kind of handwriting that is especially difficult to imitate, particularly for someone whose first language is not Greek.

Forging a document in a foreign alphabet is not only extremely difficult but also mentally exhausting. To do it successfully requires “total concentration for a sustained period of time.”<sup>11</sup> The normal result, contrary to Carlson’s narrative of steadily growing competence, is that the imitation gets worse as it advances.<sup>12</sup> Due to flagging attention, the forger makes increasingly

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<sup>9</sup> Osborn, *Questioned Documents*, 293; cf. 370: “Unlike the forgery of a single signature, the successful imitation of a continued document of any considerable length is so difficult as to be practically impossible except under very unusual conditions.”

<sup>10</sup> Osborn, *Questioned Documents*, 278.

<sup>11</sup> Katherine M. Koppenhaver, *Forensic Document Examination: Principles and Practice* (Totowa, N.J.: Humana, 2007), 129.

<sup>12</sup> Carlson, *Gospel Hoax*, 27–32.

more mistakes and progressively lapses into his own writing habits. Katherine Koppenhaver states the problem boldly: “It is impossible to maintain a successful simulation of a lengthy document. The longer the text, the more the writing reverts to the natural characteristics of the writer as his concentration wanes.”<sup>13</sup> Anastasopoulou’s supplementary report describes the style of Mar Saba 65 to be consistent: “When a large document is [internally] consistent, we have a first indication of genuineness and this applies to the Secret Mark letter.”

## Line Quality

The features that Anastasopoulou underscores (through repetition) as characteristic of Mar Saba 65 are artful and unconscious qualities that result from quick, habituated pen movements. Through years of repetition, a person’s natural handwriting will possess those qualities, but the same person’s imitation of another’s handwriting will not. Instead, imitations of skilful handwriting lack smoothness and certainty of movement; they display a quality that document examiners refer to as tremor and bad line quality. Koppenhaver and Tom Davis offer helpful explanations:

Tremor is the most easily detected and the most frequently found sign of forgery. Tremor results from slow writing or drawing. Writing is a little like riding a bicycle. When the bike rider slows down, the wheels will wobble. If the rider leaves a path in the dirt, it will resemble a wiggly line. The same is true of the writing line. When the writer slows down to copy or trace a line, the line will waiver.<sup>14</sup>

Line quality refers to the degree of smoothness of the pen line. Good line quality is smooth, confident, with regular uninterrupted curves. Bad line quality is irregular; the curves are interrupted, tending to degenerate into a series of straight lines, showing pausing, or even *pen-lifts*, where the pen is taken completely off the paper. It is a matter of degree of skill, and speed. If our expertise in writing is inhibited in some way, the pen will move slowly, and the line quality will degenerate accordingly. In the act of forgery, since we are necessarily not as expert at producing the graphic shapes of someone else’s writing as the writer will be, then the pen will move more slowly and the line quality of our imitation will be poorer than that of the original.<sup>15</sup>

These explanations bring together three of the qualities that Anastasopoulou identifies in Mar Saba 65—smoothness, continuousness, and confidence—under the rubric of good line quality, attributing them to skill and speed and opposing them to the overall bad line quality that characterizes freehand imitation, the shakiness and uncertainty of direction sometimes called forger’s tremor.

It is important to realize that forger’s tremor is not something that occurs sporadically within writing that generally looks normal. As Anastasopoulou stresses in her supplementary report, “*tremor of fraud shows a painstaking and unnatural care at every point that indicates an effort to follow an unfamiliar copy.*”<sup>16</sup> Forger’s tremor is the slow, hesitating pen movement involved

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<sup>13</sup> Katherine M. Koppenhaver, *Attorney’s Guide to Document Examination* (Westport, Conn.: Quorum Books, 2002), 90.

<sup>14</sup> Koppenhaver, *Forensic Document Examination*, 116.

<sup>15</sup> Tom Davis, “Forged Handwriting,” in *Fakes and Frauds: Varieties of Deception in Print and Manuscript* (ed. Robin Myers and Michael Harris; Winchester, Eng.: St. Paul’s Bibliographies, 1989), 128–29.

<sup>16</sup> She is quoting Osborn, *Questioned Documents*, 113. The italics are as added by Anastasopoulou.

in simulating another person's writing, so one cannot talk about forger's tremor unless the writing *generally* exhibits poor line quality and uncertain movement.<sup>17</sup> When Carlson uncovers a tremor on, say, “the *iota* of ἐκεῖ and the *theta* of ἐλευθερία,” he is not looking at forger's tremor.<sup>18</sup> (I will show what he is looking at later, when I address his handwriting analysis.)

Anastasopoulou was clearly interested in whether the questioned document displayed the degeneration in line quality that results from imitation and concluded that it does not. Rather, based on the overall fluency of this complex hand she deduced that it was written with speed and skill by “a hand used to writing in this manner.”

## Freedom and Natural Variation

When engaged in repetitive activities such as writing, humans lack the precision of machines; they therefore do not write words and individual letters exactly the same way each time. Writers do develop one (sometimes more than one) typical shape for each letter, which examiners call its master pattern, but individual renditions of this pattern vary, with some letters (usually the larger or more complicated) varying more than others. The overall amount of natural variation also varies among individuals.<sup>19</sup> Because this variation occurs naturally, the presence of unnatural consistencies in writing implies a conscious attempt either to write homogeneously (e.g., to practice calligraphy or formal penmanship in a particular script) or to replicate whole words used as models.

The presence of natural variation has important implications in the detection of forgery:

The forger doesn't recognize the need for natural variation and makes the words and letters as close to the known writing as possible. This is obvious when he or she attempts to copy extended writing. The forger will exactly duplicate the letter form, crossing the “*i*” at the same angle and in the same place, dotting the *i* in the same location, forming the design of the letter exactly like the model, giving the writing a rubber stamp look.<sup>20</sup>

Forgers normally try to make their freehand imitations of another person's handwriting as close as possible in form to the letters, syllables, and whole words that they use as models, supposing that the success of their deception depends on their ability to exactly replicate what they see. When their sources contain few examples of the words or letter combinations required for the forgery, the resulting imitation contains less variation and more exact duplication than does the authentic writing.<sup>21</sup>

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<sup>17</sup> Cf. Wilson R. Harrison's definition of tremor: “In a handwriting of poor line quality, straight lines are rarely free from deviations, and curves are neither smooth nor continuous in direction, and when this deterioration in line quality is carried to extremes so that deviations and discontinuities are frequent, the writing is described as exhibiting ‘tremor.’” *Suspect Documents: Their Scientific Examination* (New York: Frederick A. Praeger, 1958), 339.

<sup>18</sup> The phrase is drawn randomly from Carlson, *Gospel Hoax*, 30. He purports to find “forger's tremor” on nine percent of the letters in the six lines of text that he looked at.

<sup>19</sup> Roy A. Huber and A. M. Headrick, *Handwriting Identification: Facts and Fundamentals* (Boca Raton, Fla.: CRC, 1999), 160–62.

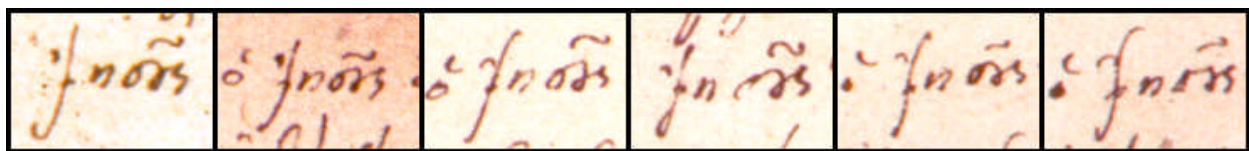
<sup>20</sup> Koppnhaver, *Forensic Document Examination*, 125. Cf. Osborn, *Questioned Documents*, 213, 368–69.

<sup>21</sup> Koppnhaver, *Forensic Document Examination*, 99.



Anastasopoulou also uses the terms “freedom” and “spontaneity” to describe the questioned handwriting, claiming that it is written “automatically” or “unconsciously.” These ideas are related to natural variation. When the variation of letterforms within a handwriting is noticeable yet the words remain legible, the hand is said to exhibit freedom. When the variation increases to the point of illegibility, the hand is said to exhibit carelessness. Freedom and carelessness result from the normal inattention to the writing process that occurs when a person is paying more attention to what she or he is writing than to the act of writing itself. Hence document examiners infer that visibly free and fluid handwriting was also spontaneous, unconscious, or automatic, “the result of a habit and not the conscious following of a copy.”<sup>22</sup> Figure 1 shows the range of variation in the way the word Ἰησοῦς (Jesus) is written in Mar Saba 65.

Figure 1



Osborn refers to “the extreme difficulty of simulating a whole document with the natural variation of genuine writing.”<sup>23</sup> Consequently, he considers the qualities of freedom and natural variation to be “strong evidence of genuineness.”<sup>24</sup>

Anastasopoulou’s characterizations of Mar Saba 65 with respect to difficulty of style, line quality, freedom, and variation in letterform already point strongly to the likelihood that this handwriting is genuine.

### Rhythm and Artistic Flair

Anastasopoulou refers to the rhythm of the writing four times, describing it as “excellent,” “very good,” and “high level.” Although rhythm is more apparent in cursive (connected) writing than in printed (disconnected) writing, and the hand in question is not entirely cursive, the presence of unconnected letters within words, in her view, “does not deter the good writing rhythm.”

What is rhythm in handwriting? As in poetry, dance, and music, this quality is harder to explain in words than it is to recognize and appreciate. Ordway Hilton describes it as “that element of the writing movement which is marked by regular or periodic recurrences.”<sup>25</sup> The writer forms strokes “at equal intervals of time,” which “results in an increase in uniformity,”<sup>26</sup>

<sup>22</sup> Osborn, *Questioned Documents*, 214.

<sup>23</sup> Osborn, *Questioned Documents: A Study of Questioned Documents with an Outline of Methods by Which the Facts May Be Discovered and Shown* (1st ed.; Rochester, N.Y.: Lawyers’ Co-operative Pub. Co., 1910), 262.

<sup>24</sup> Osborn, *Questioned Documents* (2d ed.), 369. Cf. “traced writing, like a simulated forgery, always lacks that appearance of carelessness and unconscious freedom which in all writing is one of the strongest indications of genuineness” (342); “When therefore this natural variation does appear it is strong evidence of genuineness” (370).

<sup>25</sup> Ordway Hilton, *Scientific Examination of Questioned Documents* (Chicago: Callaghan & Co., 1956), 19.

<sup>26</sup> D. E. Hamilton, *The Psychology and Pedagogy of Handwriting* (Toronto: University of Toronto Press, 1920), 47.

specifically, “regularity in slope, size and curvature” of the letterforms.<sup>27</sup> In other words, rhythm as seen on the page is produced by coordinated and rhythmic motions of the fingers and wrist muscles that control the pen. As Davis explains, “a skilled writer works to a rhythm,” “tak[ing] the same amount of time to do similar component actions, with a resulting economy of movement and uniformity of shape.”<sup>28</sup>

Two studies of handwriting rhythm by H. W. Nutt found a strong correlation between speed and rhythm.<sup>29</sup> D. E. Hamilton further noted that handwriting rhythm becomes pronounced when the act of writing is entirely automatic.<sup>30</sup> These findings suggest that handwriting rhythm, like good line quality, results from overpracticed, habituated movements that occur without the writer paying much attention to them. In that respect, the rhythmic nature of skilful handwriting is like other human behaviors that occur without conscious direction.<sup>31</sup> As Katharine M. Wilson explains in her treatise on rhythm, any repeated movements that humans persist in tend to become automatic, and automatic actions tend to become rhythmic.<sup>32</sup> This is most obvious with respect to automatic behaviors of a purely repetitive nature, such as walking, rowing, and swimming, but also applies to more complex automatic behaviors involving continually varying movements, such as writing, speaking, dancing, typing, playing the piano, and playing table tennis. By contrast, consciously steered behaviors tend to be arrhythmic: “The difference between arrhythmic and rhythmic action resolves itself into a contrast between action, the details of which are closely controlled by the guiding processes of the brain, and action which can continue without that detailed supervision. In fact, we work rhythmically when our overseer mind is free-wheeling.” “Only when the conscious direction of the mind starts, do we become arrhythmic.”<sup>33</sup> Herein lies the difference in rhythm between, say, a novice typist and a professional typist, or between a children’s soccer match and a World Cup match, but also between forged (i.e., consciously copied) handwriting and skilful natural handwriting.

The rhythm of the handwriting in Mar Saba 65 largely accounts for its aesthetic appeal. To quote Wilson R. Harrison, “it is the regular rhythm of a handwriting which makes it acceptable as a pleasing hand which falls easily on the eye of the reader. One handwriting may be composed of letter designs which adhere closely to copybook standards to form a most legible script, and yet be regarded as inferior in appearance to another which is difficult to decipher, but which possesses the regular recurrence of stress and structural elements known as rhythm.”<sup>34</sup> As Harrison’s comments intimate, rhythm and elegance are separate things. Handwriting rhythm concerns the overall flow of shapes across the page, not the elegance of individual words or letters or their proximity to the copybook forms from which students learned. The two qualities are not always easy to differentiate, because the reading habit leads the eye to focus on

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<sup>27</sup> Harrison, *Suspect Documents*, 339.

<sup>28</sup> Davis, “Forged Handwriting,” 128–33, quoting 129.

<sup>29</sup> H. W. Nutt “Rhythm in Handwriting,” *The Elementary School Journal* 17, no. 6 (February 1917): 441–42; 19, no. 7 (March 1919): 539.

<sup>30</sup> Hamilton, *Psychology and Pedagogy*, 47–48.

<sup>31</sup> Abdulaziz Al-Musa Alkahtani and Andrew W. G. Platt, “A Statistical Study of the Relative Difficulty of Freehand Simulation of Form, Proportion, and Line Quality in Arabic Signatures,” *Science and Justice* 50 (2010): 73: “Like similar rhythmic coordination in speaking, walking, and other largely habitual activities, the rhythm of writing is subconscious.”

<sup>32</sup> Katharine M. Wilson, “What Is Rhythm?” *Music & Letters* 8, no. 1 (January 1927): 3.

<sup>33</sup> Wilson, “What Is Rhythm?” 3.

<sup>34</sup> Harrison, *Suspect Documents*, 339.



individual words instead of on the overall flow of forms. For that reason, handwriting rhythm is more easily appreciated when a writing is viewed at an angle that impedes reading.

The aesthetic appeal of handwriting is also enhanced by “a sense of proportion and arrangement which puts writing in the proper place and makes it of the proper size and graduation.”<sup>35</sup> The artistry of which Anastasopoulou speaks therefore also includes elements of arrangement such as a stable baseline, straight margins, uniform line spacing, proportion, and balance. Some of these elements are entirely habitual (e.g., the spacing of margins and between words and letters); others involve some conscious control (e.g., keeping the margins straight). Yet in order to maintain these elements of arrangement, a writer must be able to passively monitor the overall form and alignment of the words as he or she writes them, an ability which is made possible by the habituated nature of skilful writing.<sup>36</sup> These elements suffer in forgeries because the forger’s attention is narrowly fixed on the part of a letterform that he or she is presently rendering and its resemblance to the corresponding letterform in the exemplar. Forged letterforms are effectively rendered in isolation of each other, resulting in misalignments and deviations in proportion within words.<sup>37</sup> The artistic flair of Mar Saba 65 therefore also points to its genuineness.

The relevance of rhythm to the question of forgery should be obvious, and is well-appreciated by professional document examiners. Of all the qualities of writing that point to genuineness, good rhythm is the strongest. Harrison writes:

A handwriting rarely possesses good rhythm unless it has been written fluently and to an appreciable extent by reflex action. When some thought has to be exercised in the endeavour to produce a handwriting which differs in any material respect from that which is usual to the writer, there results an immediate loss of rhythm, for rhythm is even more influenced by the circumstances of the writing act than line quality. It follows from this that no handwriting which is disguised or copied can be expected to approach the standard of the rhythm shown by the normal hand; as this is so, a fluent, rhythmic script of good line quality is extremely unlikely to have been either forged or disguised.<sup>38</sup>

A “fluent, rhythmic script of good line quality” is exactly what we are dealing with in Mar Saba 65, according to Anastasopoulou.

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<sup>35</sup> Osborn, *Questioned Documents*, 101.

<sup>36</sup> Christian Marquardt, Wolfram Gentz, and Norbert Mai, “On the Role of Vision in Skilled Handwriting,” in *Handwriting and Drawing Research: Basic and Applied Issues* (ed. M. L. Simner et al.; Amsterdam: ISO, 1996), 87–97. They note that “in automated handwriting the fixed eye monitors only the range of the movement” rather than the full motions of each stroke (96). Trying to observe each stroke actually “hampers the elicitation of automated writing movements” (95). See also Alf Zimmer, “Do We See What Makes Our Script Characteristic—Or Do We Only Feel It? Modes of Sensory Control in Handwriting,” *Psychological Research* 44 (1982): 165–74.

<sup>37</sup> Robert J. Muehlberger, “Identifying Simulations: Practical Considerations,” *Journal of Forensic Sciences* 35, no. 2 (March 1990): 369. See, further, Al-Musa Alkahtani and Platt, “Arabic Signatures,” 72–76, which demonstrates that in freehand simulations, form is better imitated than proportion, and proportion is better imitated than line quality.

<sup>38</sup> Harrison, *Suspect Documents*, 339. See also 352, where he reiterates, “A handwriting can exhibit its best rhythm only when it has been executed to a great part as a reflex movement, without conscious thought having to be given to the details of its structure.” Similar thoughts appear in Osborn, *Questioned Documents*, 98–100.

## Signs of Forgery?

This subject is easier to discuss. In her two reports, Anastasopoulou lists no qualities in Mar Saba 65 that might point to forgery. Her supplementary report is explicit. After listing the suspicious qualities that document examiners look for, she states, “The Secret Mark letter . . . in my opinion, does not have such indications so to make us think of a suspicious writing.”

## Conclusion

Only one conclusion follows from Anastasopoulou’s observations about the style, line quality, freedom, natural variation, rhythm, and artistic flair of Mar Saba 65, and the absence of signs of forgery: this manuscript contains someone’s natural handwriting. Since this is a very difficult and skilful eighteenth-century Greek monastic hand, quite unlike Greek writing of the twentieth century, we may infer that this document was most likely penned by a Greek monk in the eighteenth century.

What of the modern forgery scenario? Knowing how the experts in QDE interpret the qualities that Anastasopoulou identified in this document allows us to rate the probability that this handwriting is actually a modern forgery. To borrow Harrison’s words, that scenario is “extremely unlikely.”

## My Thoughts on the Analysis by Stephen Carlson<sup>39</sup>

Some comments on *The Gospel Hoax* by Stephen Carlson are in order, for Carlson presented a very different analysis of Mar Saba 65. Going through six lines of the manuscript, he listed what he believed to be discrete instances of signs of forgery, specifically, forger’s tremor, unnatural pen lifts, careful retouching, blunt ends, ink blobs, hesitations, and deliberativeness. He concluded, “The pervasiveness of these signs of simulation in a document ostensibly executed in a rapid cursive raises the specter that *Theodore* is a drawn imitation of an eighteenth-century hand.”<sup>40</sup>

I have commented on Carlson’s attempt at QDE in some earlier studies.<sup>41</sup> Here I will reiterate my thoughts about method and separately address the two alleged signs of forgery that received the most attention, namely, forger’s tremor and suspicious pen lifts.

The first point of method has now been reiterated by Anastasopoulou at the top of her supplementary report: any of the signs of forgery that examiners look for might also be found in authentic writings, so their significance depends on whether or not they appear in authentic samples of the hand in question. Without knowing what is normal for a writer, one cannot say

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<sup>39</sup> My thanks to Allan Pantuck for his helpful critique.

<sup>40</sup> Carlson, *Gospel Hoax*, 31.

<sup>41</sup> In addition to my “Reply to Stephen Carlson,” see Scott G. Brown, “Factualizing the Folklore: Stephen Carlson’s Case against Morton Smith,” *Harvard Theological Review* 99 (2006): 291–327; Allan J. Pantuck and Scott G. Brown, “Morton Smith as M. Madiotes: Stephen Carlson’s Attribution of *Secret Mark* to a Bald Swindler,” *Journal for the Study of the Historical Jesus* 6 (2008): 106–25; and Brown and Pantuck, “Stephen Carlson’s Questionable Questioned Document Examination,” *Salainen evankelista*, posted April 14, 2010, <http://salainenevankelista.blogspot.com/2010/04/stephen-carlsons-questionable.html>; reposted on The Secret Gospel of Mark Homepage, <http://www-user.uni-bremen.de/~wie/Secret/Pantuck-Brown-2010.pdf>.

that any particular feature is suspicious. Carlson did not apprise his readers of this fact in his book, although he was well aware of it.<sup>42</sup>

The second point is that document examiners need to look not only for evidence of forgery but also for evidence of authenticity. Carlson did not draw his readers' attention to any qualities in Mar Saba 65 that favor authenticity or explain to them the characteristics of genuine writing that examiners look for. Where a trained examiner would weigh all the evidence, Carlson restricted his purview to features that strike him as suspicious, thereby severely biasing the outcome of his assessment from the start.<sup>43</sup>

The third point has to do with the images that Carlson used. Instead of obtaining scans made directly from the color photographs, he scanned the halftone reproductions of Smith's black-and-white photographs that appear in *Clement of Alexandria and a Secret Gospel of Mark*.<sup>44</sup> Halftone reproductions are not the same thing as photographs. The halftone process used in Smith's book transforms a continuous tone image into rows of evenly spaced dots so that the image can be reproduced inexpensively with only one color of ink. At an ordinary viewing distance, these dots, which vary in size, merge with the negative spaces formed by the paper around them to create the optical illusion of a continuous tone image. Such images are fine for many purposes. But QDE requires original documents or, in lieu of those, actual photographs or photographic reproductions that retain all of their information when enlarged. When, however, one magnifies or otherwise enlarges a halftone image, one actually ends up seeing *less* detail, for as soon as the dots become discernable, all the shades of gray disappear and one is left looking at the black-on-white apparatus that produces the optical illusion of gray scale at an ordinary viewing distance. By comparing enlargements of the halftone images with enlargements made from the original photographs, it becomes obvious that the halftone apparatus misrepresents the line quality of the handwriting, producing artifacts such as disconnections, blobs, and corrugated or stepped lines that resemble pen lifts, hesitations, and forger's tremor.<sup>45</sup> This problem is known to document examiners. When Ordway Hilton studied the utility of different reprographic technologies, he deemed halftones unsuitable "for the reproduction of material which is to be subjected to questioned document examinations."<sup>46</sup>

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<sup>42</sup> See Brown and Pantuck, "Questionable."

<sup>43</sup> This is a general problem with *The Gospel Hoax*. See Timo S. Paananen, "A Conspiracy of the Secret Evangelist: Recent Debate concerning Clement of Alexandria's *Letter to Theodore*," Salainen evankelista, <http://salainenevankelista.blogspot.com/2009/06/masters-thesis-conspiracy-of-secret.html>. This is an English translation of Paananen's master's thesis (University of Helsinki, 2009).

<sup>44</sup> Morton Smith, *Clement of Alexandria and a Secret Gospel of Mark* (Cambridge, Mass.: Harvard University Press, 1973), 449, 451, 453.

<sup>45</sup> See Roger Viklund, "Tremors, or Just an Optical Illusion? A Further Evaluation of Carlson's Handwriting Analysis," *The Jesus Character Critically Examined*, <http://www.jesusgranskad.se/theodore2.htm>; idem, "The Difference Between Real Photographs and Printed Photographs," Salainen evankelista, <http://salainenevankelista.blogspot.com/2010/02/differencebetween-real-photographs-and.html> (Part One, posted February 7, 2010); [http://salainenevankelista.blogspot.com/2010/02/difference-between-real-photographs-and\\_10.html](http://salainenevankelista.blogspot.com/2010/02/difference-between-real-photographs-and_10.html) (Part Two, posted February 10, 2010); [http://salainenevankelista.blogspot.com/2010/02/difference-betweenreal-photographs-and\\_13.html](http://salainenevankelista.blogspot.com/2010/02/difference-betweenreal-photographs-and_13.html) (Part Three, posted February 13, 2010).

<sup>46</sup> Hilton, *Scientific Examination*, 282–83.

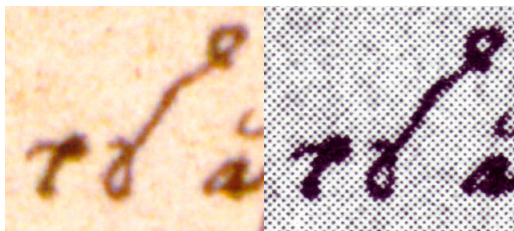
## The Forger's Tremor

The unsuitability of the images Carlson examined is readily illustrated by considering his two “detail” images of forger’s tremor. Figure 4B in *The Gospel Hoax* presents a close-up of the letter *theta* from the last word in the first line of the manuscript. According to Carlson, the halftone image illustrates this letter’s “shakiness.”<sup>47</sup> My own Figure 2, below, replicates the scan that Carlson made from Smith’s book. The middle image presents the unmodified scan, whereas the adjacent image to its right uses a descreen filter like the one used on the images in Carlson’s book. This process counters the distracting moiré pattern that can appear in scans of halftone images. On the left in the same figure is a scan made from the color photograph (courtesy of Charles W. Hedrick). My Figure 3 (no descreening) similarly displays the letters in Carlson’s Figure 4C, which illustrates shakiness in the long (actually, 4 mm) line of a ligature.

Figure 2



Figure 3



These are Carlson’s featured examples of forger’s tremor. Yet as the color images demonstrate, the line quality is good. When we compare the writing lines in the color and halftone images section by section, it becomes obvious that the tremor that appears in Carlson’s scans of these letterforms is an artifact of the halftone process. The fixed matrix of dots cannot accurately represent lines that diverge from the angles of the grid. So whatever the course a line takes, it must be represented by dots that are aligned at multiples of 45° (0, 45, 90, etc.). As a result, some parts of the stroke appear to be formed in segments that resemble the abrupt “course corrections” of forger’s tremor.

Incidentally, Carlson also believes that the *tau* in my Figure 3 contains “two large ink blobs” of hesitation, one at the top of the stem just beneath the cross line, the other at the bottom, which indicate “that he [the scribe] just realized that he had written the wrong form of *tau*.”<sup>48</sup> Comparison with the color image reveals that the top blob is an artifact created by the use of negative space to form an illusion of gray. Although it is not so clear in this image, the bottom blob is actually a hook, which is a feature of this cursive form of *tau* (ϑ). Clearly, halftone images are misleading and totally unsuitable in QDE.

## Careful Retouching and Unnatural Pen Lifts

I was very interested to learn whether a Greek professional document examiner, working with suitable images, would share Carlson’s impression that Mar Saba 65 contains examples of careful retouching and suspicious pen lifts. I am not competent to judge such things, so I defer to

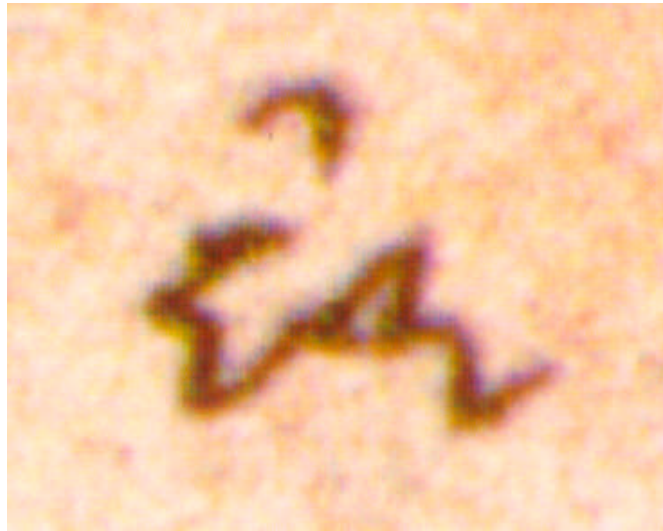
<sup>47</sup> Carlson, *Gospel Hoax*, 28. The figures are printed between pp. 44 and 45.

<sup>48</sup> Carlson, *Gospel Hoax*, 29.

Anastasopoulou’s opinion that the writing is fluent and natural. However, given the great importance that Carlson places on the pen lift illustrated in his Figure 4A, I should comment on it.

That figure offers his only close-up image of a pen lift, which occurs in the first word of the manuscript, ἐκ (“From”). My Figure 4 shows how the word appears in the color photograph.

*Figure 4*



Of this word Carlson writes:

First, the pen was lifted after the *epsilon* and the writer tried to continue the next stroke along the same course but the ink flowed back to the end of the first stroke, leaving a blob of ink in the middle of a stroke. This pen lift indicates that the writing here is a constructed imitation of a cursive hand, because a cursive writer would accomplish it in a single stroke.<sup>49</sup>

If we follow Carlson’s logic, this two-letter word indicates that the writer of Mar Saba 65 was not a cursive writer but only attempting to appear to be so. By implication, all of the cursive connections in the manuscript must be constructed piecemeal, regardless of how fluent they appear to be and how many pen lifts Carlson thinks actually show. This is a lot of weight to put on one pen lift.

I have no doubt that the writer lifted his pen at the end of this *epsilon*. It is Carlson’s interpretation of this pen lift that I doubt. Had he examined how this writer normally forms the letter *kappa*, he would have realized that the initial movement of the stroke hooks down and to the left before turning upward to form the angled “back” of the letter, as illustrated in Figure 5.

*Figure 5*



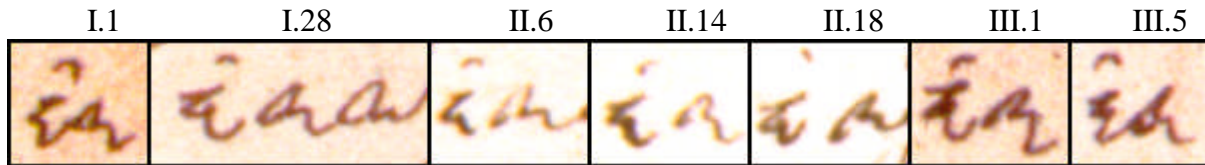
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<sup>49</sup> Carlson, *Gospel Hoax*, 28.

## *Epsilon Kappa*

Due to this initial backward hook the letter *kappa* in this manuscript *never* begins as the continuation of the preceding letter. It always begins as a new stroke. Figure 6 displays seven instances of  $\epsilon\kappa$ , the first of which is Carlson's example.

Figure 6



As these examples illustrate, the backward motion of the hook on *kappa* occasionally brings it in contact with the preceding letter, and the hook itself is sometimes so tight that it produces a blob of ink (perhaps by flow back). Given this information, we can surmise that Carlson's featured instance of a suspicious pen lift was formed by the scribe writing *epsilon* as a separate letter and then writing *kappa* with a tight, backward hook that resulted in an ink blob and the two letters touching at the end of the first.

Rather than demonstrating that Mar Saba 65 is “a constructed imitation of a cursive hand,” this two-letter word better illustrates why QDE should be left to trained professionals.

### Conclusion

It has been a long time coming, but thanks to **BAR** and its contributors we now have an assessment of the handwriting in Mar Saba 65 by someone whose business it is to differentiate between natural and forged Greek handwriting. Bucking the tide of suspicion, Anastasopoulou observed none of the characteristics that normally appear in forged documents, but she did observe the hallmarks of spontaneous writing. My own survey of the secondary literature indicates that the particular set of characteristics that she observed is extremely unlikely to occur in a forgery of a whole document. In other words, we can rule out Smith, not only as the scribe of this letter, but also as its author.