Digital Humanities in Biblical Studies and Theology

Dan Batovici*

Digital Palimpsests: Mark in Trinity College Cambridge MS. O.9.27

<https://doi.org/10.1515/oph-2019-0008>

Received April 14, 2019; accepted May 20, 2019

Abstract: The O.9.27 manuscript of Trinity College Cambridge is a minuscule manuscript of Hesiod's *Opera et Dies*. In a 2001 PhD thesis on Greek palimpsests in Cambridge by Natalie Tchernetska, this manuscript is described to contain two distinct lower scripts, one of which identified as a New Testament text. The author read four lines and a partial fifth of the one-leaf palimpsest that contain Mark 1:44, which is remarkable considering that the washing made the lower script virtually the same colour as the page. This note re-examines the Markan lower script in O.9.27 and offers an account of the use of image processing software for the purpose to uncover more text in a difficult palimpsest, a method useful when MSI is not available.

Keywords: Palimpsest; Gospel of Mark; lectionary

1 Introduction: a difficult palimpsest

Trinity College Cambridge MS. O.9.27 is a Greek minuscule codex with Hesiod's *Opera et Dies* 1–760.¹ It was donated to Trinity College by Roger Gale in 1738.² In the bottom margin of folio 1r there is a note ascribing the codex as having belonged to the famous collection of Cardinal Domenico Grimani (1461–1523).³ In a PhD thesis focused on the Greek palimpsests hosted in various libraries in Cambridge, Natalie Tchernetska included the presentation of two distinct lower scripts in Trinity College Cambridge MS. O.9.27.⁴ One of them is identified as a New Testament text, four lines of which she was successful in reading being from Mark 1:44.⁵

This aim of this short note is to present a method for digitally dealing with palimpsests when multi-spectral imaging (MSI) is not available which, as will be seen, will lead not only to reading additional text, but also to the identification of the initial manuscript as a lectionary. The following revisits therefore the palimpsest leaf which contains text from the gospel of Mark and offers a discussion of the use of digital image processing software for reading what otherwise is an almost completely washed off lower script. To that end, I first describe the issues that impede the reading of the lower script, followed by a presentation of the digital enhancement process used, and concluding with the results yielded when applied respectively to natural light digital images and UV digital images.

¹ For a discussion of the transmission of *Opera et Dies* see West, “The Medieval Manuscripts of the Works and Days,” 161–185.

² The manuscript is now fully digitised (with descriptions) and can be found online at <http://trin-sites-pub.trin.cam.ac.uk/james/viewpage.php?index=973>. The Pinakes entry is available at <https://pinakes.irht.cnrs.fr/notices/cote/12026/>.

³ For a catalogue description of the manuscript see James, *The Western Manuscripts in the Library of Trinity College, Cambridge*, 470–472, here 471.

⁴ Tchernetska, *Greek Palimpsests in Cambridge*, 90.

⁵ I would like to thank Peter M. Head for drawing my attention to this palimpsest in the first place, Madalina Toca for a second eye on the transcription, Greg Paulson for the assistance in assigning the GA number to the Markan text, and the two reviewers of the Journal for their detailed comments.

*Corresponding author: Dan Batovici, KU Leuven, Leuven, Belgium; E-mail: dan.batovici@kuleuven.be

Natalie Tchernetska's apt presentation of the palimpsest is a fitting starting point:

The lower script I is rotated 180 degrees relative to the upper script and is faint, despite the fact that it is not fully covered by the upper script: only traces of a text in minuscules and of initials in red are visible (Plate 9a). The ruling text is of type Leroy 20E2; the text is written in two columns. The outlines of these letters are blurred and do not let us examine clearly its type of script and hypothesise its date. Nonetheless, with the help of digital enhancement (Plate 9b), I read the bottom line of the left column and several top lines of the right column on the verso of the flyleaf, which contain a fragment of the New Testament, Mark 1:44. The last words on the bottom line of the left column are]ῥα μη/, and the first four top lines of the right column read / δεινὸν μὴ εἶπαι ἀλλὰ ὅ / παγε σεαυτὸν δεῖξον τῷ / ἱερεὶ καὶ προσένεγκε / περὶ καθαρισμοῦ σου[. [...]

It cannot be determined, however, when the flyleaf was added to the main body of O.9.27.⁶

This parchment flyleaf stands now as the third flyleaf of the manuscript (the other two are left blank and made of paper) and is followed by the first leaf with Hesiod's *Opera et Dies* (f. 1r). It is slightly smaller than the rest of the manuscript: it measures 16.5 × 25.5 cm, whereas the rest of codex measures around 18.5 × 27 cm. This too shows that it is a displaced leaf that has been added subsequently to the Hesiod manuscript.⁷

A significant impediment in reading the Markan text today is the result over time of the ruling of the page. On the one hand, it was not followed closely when copying the text which includes Mark 1:44: the ruling is set in a slight angle compared to the baseline of the lower text (which is placed, as said, on two columns, upside down in the newer binding). On the other hand, the ruling has been applied with perhaps too strong a pressure and, as a result, the general aspect of the page today is far from being that of a flat surface: the ruling now forms a grid of parallel arched waves in the parchment, of a rather high relief. Further complicating the matter, the lines of the grid cut through the middle of every other line of the lower script.

Yet the reading of the Markan text is substantially hampered by the fact that the washing off has made the lower script of virtually the same colour as the parchment, as can be seen in the image below, the bottom of the recto of the flyleaf. Edges of the script becomes slightly more visible under an UV lamp but unfortunately not enough for reading additional text.

Figure 1. Detail of O.9.27, flyleaf 3, verso. Used with permission from the Master and Fellows of Trinity College Cambridge.

⁶ Tchernetska, *Greek Palimpsests in Cambridge*, 98.

⁷ To put this in current codicological terminology—following Andrist, Canart, and Maniaci, *La syntaxe du codex*—the added overwritten leaf forms now a new ‘circulation unit’ (p. 61) with the Hesiod manuscript. Of interest here is the ‘production unit’ (pp. 59–60) with the Markan text, which was broken from its initial codex, effaced, as well as overwritten, and bound in the new codex, O.9.27 (tentatively, transformations D2 + A3 according to Andrist, Canart, and Maniaci, *La syntaxe du codex*, 81).

2 Method and results when using normal light digital images

Natalie Tchernetska's methodological solution for rendering readable the lower scripts of the palimpsests in the thesis is "digital enhancement," which indicates the computerized manipulation of the digital image of a manuscript page. This approach is used throughout the thesis, the latter including a descriptive chapter on the matter.⁸ Tchernetska lists a number of ways to proceed in using a specialized software—Adobe Photoshop—and rightfully draws attention to the fact that digital enhancement would work even better when one starts from an UV digital photography, instead of a digital image in natural light.

However, none of the Tchernetska's described methods were effective on the O.9.27 palimpsest, since the colour of the lower script is too close to that of the parchment. As seen in the quotation above, digital enhancement was used in the case of this particular manuscript, but the exact method applied in its case is not described.⁹ In any event, she transcribed the following text from the bottom of the left column (last two words of the last line), respectively from the top of the right column (four lines) on the verso of the flyleaf, from Mark 1:44, which are the areas in which the lower script is the most visible:¹⁰

δενὶ μηδὲν εἴπη ἀλλὰ ὅ
παγε σεαυτὸν δεῖξον τῷ
ἱερεῖ καὶ προσένεγκε
περὶ καθαρισμοῦ σου
... ..
]ὄρα μη

I had the chance to work with the manuscript on several sessions in the Wren Library of the Trinity College in 2010, with subsequent study visits in 2011 and 2014. Unfortunately, at that time it was not possible to produce in Cambridge UV digital images of the palimpsest leaf, or MSI. However, I did receive digital images with which I could work, through the kindness of the Wren Library custodians. In the following I will describe briefly my own solution for manipulating the digital image of the flyleaf—with the help of the Adobe Photoshop software—in order to read further text of the lower script.

The starting point is the fact that there are several possible formats for encoding a digital picture. The one which includes the highest number of possible colours and which is also the most common is the RGB colour space.¹¹ The RGB mode decomposes virtually any visible colour in three channels: Red, Green and Blue, whose initials form the name of this particular mode of image encoding. The three channels are overlapping, and from their combination over each pixel results in the colour we perceive on the screen. And conversely, when scanning an image, the visible colour is decomposed by the scanner's software in these three basic channels.

Since in the initial digital image the lower script has almost the same colour as the parchment itself, I proceeded to verify whether any of the three channels displays a more pronounced contrast between the script and page. I found that while the Red channel has almost no contrast at all, the Green and particularly the Blue channels offer at least some contrast between the script and the colour of the page, as can be seen in the image below.

⁸ Tchernetska, *Greek Palimpsests in Cambridge*, 133–144.

⁹ Ibid., 143.

¹⁰ Ibid., 98.

¹¹ For a discussion of colour spaces in digital context see Plataniotis and Venetsanopoulos, *Color Image Processing and Applications*, 1–50. They classify the RGB space among the "physiologically inspired color models, which are based on the three primaries, the three types of cones in the human retina," of which "the Red-Green-Blue (RGB) color space used in computer hardware is the best known example" (p. 3).

Figure 2. Trinity College Cambridge MS. O.9.27: detail of the Red, Green and Blue channels respectively, containing Mark 2:2. Used with permission from the Master and Fellows of Trinity College Cambridge.

Consequently, I digitally manipulated in various ways the two relevant channels, taking into account the peculiarities of this manuscript. For instance, since the lower script appears in these channels among the midtones and in a tone which is very close to that of the page, sharpening the overall contrast of the image would have just render the extant traces invisible. Using the Curves adjustment tool instead, however, one can add control points to the curve as in the image to the right in order to keep both highlights and shadows virtually unchanged (and therefore avoiding an overall sharpened contrast) which allow the user to only modify the middle tonal areas. This can result in an increased contrast between the lower script and its background, which is the desired effect, even though it does not result in an easily readable image. Additionally, in order to tone down the visual impact of the upper script, I have changed its colour into a neutral colour. For that, I produced a selection of all darker ink areas and created a layer with a grey filling within that selection, places above the layer containing the image of the manuscript.

Using these features and constantly comparing magnified areas in normal light and various manipulations creates an impression of the lower text in a number of places on the flyleaf. As a result, I was able to read most of the text that Tchernetska read, though departing from her transcription on one occasion. In addition, it was possible to ascertain the fact that the verso has 28 lines on each column and that the recto has a corresponding two-column text. More importantly, this allowed me to partially read further six lines—Mark 2:2–3—as well as several other disparate words and groups of letters in the two columns. Below there is the relevant fragment from the second column of the verso, lines 12–18, as shown on the digitally manipulated Blue channel.

Figure 3. Detail of O.9.27, flyleaf, containing Mark 2:2. Used with permission from the Master and Fellows of Trinity College Cambridge.

Reading more text from Mark in the column opened new possibilities with regard to the question of grasping the initial state or purpose of the leaf, before it was washed off, overwritten and rebound as the third flyleaf in Trinity College Cambridge MS. O.9.27. The fact that this column starts with Mark 1:44 on its first four lines, reading then Mark 2:2–3 in lines 12–18, seemed to suggest a continuous text of Mark or at least a text which contains a larger, continuous, quotation from Mark. It also became apparent that between the 6th and the 12th line of the second column—which separate the two sections which were now transcribed, containing respectively Mark 1:44 and Mark 2:2–3—there is not enough space to accommodate both 1:45 and Mark 2:1.¹²

Although no such omission is signalled in NA28¹³ (or in the editions of Tischendorf¹⁴ and von Soden¹⁵), the apparatus in Swanson’s edition shows that a number of continuous-text Markan manuscripts have lectionary markings at Mark 1:44 and 2:1.¹⁶ This suggests therefore that the flyleaf, in as much as it omits Mark 1:45, is a lectionary and not a continuous-text manuscript of Mark.¹⁷

While this has produced new results, they were still limited in the absence of UV digital images, which would have provided a starting point with a sharper contrast between the ink of the lower script and the colour of the parchment than the digital images produced in normal light. Presumably, the further enhancement of this initial contrast could have resulted in a more legible image.

3 Using UV digital images

Fortunately, in October 2018 I was provided with UV digital images of the flyleaf of O.9.27 through the kindness of Mr. Sandy Paul, sub-librarian at Trinity College Library Cambridge, causing new impetus for this study. As expected, the initial image indeed contained a contrast similar to that obtained by processing the normal digital image as described above. To begin with, it contained more information and contrast on each of the three colour channels, as can be seen below. Incidentally, the Blue channel proved again to be the most useful. Again, by constantly comparing magnified areas in normal light, UV, and the various

¹² While in lines 1–6 there are about 110 letters, there are about 250 letters in NA28 in Mark 1:45–2:1, to be distributed in six lines (7–12). While there is little that can be read in the palimpsest to verify this, it seems very unlikely to have had all this text squeezed in this space.

¹³ Aland et al. (eds.), *Novum Testamentum Graece*, 28th rev. edition.

¹⁴ Tischendorf, *Novum Testamentum Graece* i (8th ed.), 228.

¹⁵ Von Soden, *Die Schriften des neuen Testaments* II, 124.

¹⁶ Swanson, *New Testament Greek Manuscripts: Mark*, at 22 and 23.

¹⁷ For an introduction to lectionaries in the Greek tradition see Osburn, “The Greek Lectionaries of the New Testament,” 93–113. On p. 95 Osborn notes: “As distinct from continuous-text MSS, lectionary MSS are those in which the text of the NT is divided into separate pericopes, or lections, rearranged according to the fixed order in which they are read as lessons for the church on particular days during the year. Such MSS, currently numbering over 2,400, make up approximately 40 percent of all extant Greek MSS of the NT.” On the use of lectionaries see Petras, “The Gospel Lectionary of the Byzantine Church,” 113–140.

manipulations of each, one gets a better-informed impression of the lower text, even though only in a number of places on the flyleaf. Most of it remains too well washed off or covered by the upper text.

Figure 4. Trinity College Cambridge MS. O.9.27: fragment of the Red, Green and Blue channels respectively, in UV light. Used with permission from the Master and Fellows of Trinity College Cambridge.

Digital UV images proved helpful. As a first result of the method described above, it was possible to read in lines 5 and 6 further text from the remainder of 1:44, including its last word—αυτοις—at the end of line, ascertaining that the whole verse was there. More importantly, in line 7 εκ κα(τα) μαρκ(ον) became readable. This is a common abbreviation for a liturgical incipit which introduces a liturgical reading from Mark, whose presence between Mark 1:44 and the beginning of Mark 2 confirms that the leaf comes from a lectionary.¹⁸

In Trinity College Cambridge MS. O.9.27 verse 1:44 is certainly included up to αυτοις, and it can also be verified that verse 45 is left out entirely. The introduction to 2:1 is still not legible, but there are traces of decoration in red ink in the margin (noted by Tchernetska) as well as further traces of a spiralled decoration in the same ink as the lower text. However, there is no general sense of what symbol they may have formed before being washed. Riddle, who has studied the lectionary text of Mark, does not include the ending of Mark 1 in his discussion,¹⁹ yet Colwell notes that “Mark’s Gospel supplies the lections for the Saturdays and the Sundays of Lent.”²⁰ Both their collation²¹ and Gregory’s study²² concur in placing the reading of Mark 1:35–44 in the second Saturday of Lent,²³ and Mark 2:1–12 in the second Sunday of Lent, preceded by Mark 2:28–3:5 (on the first Saturday of Lent) and John 1:44–52 (first Sunday), and followed by Mark 2:14–17 (third Saturday), and Matt 25:1–13 (third Sunday). Consequently, it was possible to read most of the first nine lines of the two columns on the other side, with passages from Mark 2:5–6 and 2:11–12 respectively.

¹⁸ Biblioteca Vallicelliana MS D 63 offers a more accessible parallel: it is a 12th century lectionary—l. 137—of a similar dimension (18.5 × 23.7, compared to 16.5 × 25.5 of O.9.27), also written in two columns. On the bottom half of folio 12r there is virtually the same situation: the reading from Mark 1:44 ends in α προσταξεν Μωσης εις μαρτυριον αυτοις and does not include verse 45 at all. This is followed by the abbreviated indication, written in red ink, that another reading from Mark follows, and then an incipit introduces Mark 2:1 and goes up to 2:5 on the second column. Digital images of the manuscript are available online at http://www.internetculturale.it/jmms/iccviewer/iccviewer.jsp?id=oai%3Awww.internetculturale.sbn.it%2FTeca%3A20%3AN%20000%3ARM0281_Vall_D_63&mode=all&teca=MagTeca++ICCU. The Pinakes entry is <https://pinakes.irht.cnrs.fr/notices/cote/56319/>.

¹⁹ Riddle, “The Character of the Lectionary Text of Mark in the Week-Days of Matthew and Luke,” 21–42.

²⁰ Colwell, “The Contents of the Gospel Lectionary,” 3.

²¹ Colwell and Riddle, *Prolegomena*, 117.

²² Gregory, *Textkritik des Neuen Testamentes* 1, 361.

²³ As do the annotations collated by Swanson from continuous Markan manuscripts; Swanson, *New Testament Greek Manuscripts: Mark*, 23.

However, the method used in this short note was not successful for reading the flyleaf entirely. In this sense, this is a provisional and partial transcription of the manuscript. Most of the text remains unreadable because it is very well washed out and for most areas also covered by the upper script. What I was able to read was enough to ascertain that this is a lectionary, and also that the recto of the flyleaf contains the continuation of the lectionary reading started on the second column of the verso. What follows is the updated transcription of the flyleaf (using Vallicelliana MS D 63 as the base text), with no attempt at a full edition or textual commentary, which will have to await the perusal of multi-spectral imaging (MSI). Until then, the advances possible through this method are establishing this is a lectionary and reading additional text on both sides. It is hoped that this note will succeed in drawing attention to this curious, misplaced, lectionary leaf.²⁴ Until then, the lectionary text of Mark on the flyleaf has received the Gregory-Aland designation L2484 from the Institut für Neutestamentliche Textforschung in Münster.

Table 1. Trinity College Cambridge MS. O.9.27, flyleaf 3 verso

		1	δενι μηδεν ειπης αλλα υ	Mk 1:44
		2	παγε σεαυτον δειξον τω	
		3	ιερει και προσενεγκε	
	...	4	περι του καθαρισμο[υ σου	
	τας ε]	5	α προσε]ταξε[Μωυσ	
Mk 1:38	χομεν[ας κωμπολεις]	6	ης εις μ]αρτ[υ]ριον αυτοι[ς	
	ινα κ[αι ε]κει [κηρυξω εις]	7	]δ[] εκ κα μαρκ	
	του[τ]ω γαρ [εξεληλυθα	8	]ει	Mk 2:1
Mk 1:39	κα[ι]	9	σηλθε]ν ο [ις εις] κα	
	...	10	περνα[υ]μ και η	
	] εις	11		
	ολην την γαλιλαι]αν κ(αι)	12	κ]αι ε[υ]θεως συνηχ	Mk 2:2
	τα δαιμ[ονια εκβ]α	13	θησαν πολλ]λοι ωστε	
	λλ[ων	14	μηκετι χ]ωρειν μηδε	
	...	15	τα] π[ρος] την θυραν	
		16	και [ελ]αλει αυτοι[ς] τον	
		17	λογ]ον και ερχονται	Mk 2:3
		18	π]ρο[ς] α[υτο]ν παραλυτι	
		19	κ[ον] φερον[τε]ς	
		20		
		21		
		22		
		23		
		24		
		25		
		26		
		27		
Mk 1:44		28		
	και λεγει] αυτω ορα [μη			

Table 2. Trinity College Cambridge MS. O.9.27, flyleaf 3 recto

Mk 2:5	λεγει τω παραλυτικ[ω] τεκνον	1	παραλυτικω σοι λεγω	Mk 2:11
	αφε[ων]ται σοι	2	εγειρε αρον τον κραβαττον σου και]	
Mk 2:6	αι αμαρτιαι [σο]υ ησαν	3	υπαγε εις [τον	
	[δ]ε [τινες τ]ω[ν γραμ]ματε	4	οικο]ν σου [κ]αι [ηγ]ε[ρ]θη ευθως και	Mk 2:12
	ω[ν] εκει καθημενοι] και	5	αρ[ας] τον κραβα[ττο]ν [ε]ξηλθεν	
	[διαλογιζομ]ενοι [εν] τα[ις] κ[α]	6	[εναν]τιον παντων	
	ρδiais αυτων [τι] ουτως λαλει β]	7	ωστε [ε]ξ[ιστασθαι] παν	
	λασφημι[ας	8	τας και δ[οξα]ζειν	
	...	9	...	
		10		

²⁴ Producing critical editions of lectionary texts is still a desideratum: Paulson, "A Proposal for a Critical Edition of the Greek New Testament Lectionary," 121–150.

4 Concluding remarks

The advances presented above in reading the text of Trinity College Cambridge MS. O.9.27 do not, unfortunately, overcome one of the initial problems posed by the flyleaf palimpsest: the blurriness of the erased lower script continues to hinder any sensible approximation of the dating, even after the digital manipulation of UV images. It still stands that it was written before the late 13th century, a *terminus ante quem* given by Tchernetska's dating of the upper script.²⁵ Other than that, it is rather difficult to describe the script, since so little of it can be read, and in a precarious way, even if one can get an impression of it during examination. The script seems to have a squared manner in the writing of the letters, to write καὶ with the κ written separately from αἰ, and the two angled strokes of the former jotted down separately from the vertical strokes. There is virtually only one ligature (ει).

As to the initial function and state of the Markan text before being washed and overwritten, Natalie Tchernetska suggested a number of possibilities: "It is plausible that the original manuscript contained either a liturgical text of the kind in which scriptural readings are frequent (for example, a prayer book or a lectionary); or some other Christian text where NT fragments might be cited, such as a commentary or a homily; finally, it could have been a modest NT manuscript copied for private use."²⁶ Following the use of digital UV images, we can now better determine its purpose, and show that the palimpsest which has been washed and repurposed as a flyleaf in Trinity College Cambridge MS. O.9.27 was initially, or has been copied from, a lectionary.

References

- Aland, Barbara, Kurt Aland, Eberhard Nestle, Erwin Nestle, Johannes Karavidopoulos, Carlo M. Martini, and Bruce M. Metzger, eds. *Novum Testamentum Graece*; 28th rev. edition. Edited by the Institute for New Testament Research Münster Westphalia under the direction of Holger Strutwolf. Stuttgart: Deutsche Bibelgesellschaft, 2012.
- Andrist, Patrick, Paul Canart, and Marilena Maniaki. *La syntaxe du codex: essai de codicologie structurale*. Bibliologia 34. Turnhout: Brepols, 2013.
- Ernest Cadman Colwell and Donald W. Riddle (eds.). *Prolegomena to the Study of the Lectionary Text of the Gospels*. Studies in the Lectionary Text of the Greek New Testament 1; Chicago: Chicago University Press, 1933.
- Colwell, Ernest Cadman. "The Contents of the Gospel Lectionary." In Colwell and Riddle, *Prolegomena to the Study of the Lectionary Text of the Gospels*, 1–5. Chicago: Chicago University Press, 1933.
- Gregory, Caspar René. *Textkritik des Neuen Testaments*, vol. 1. Leipzig: J.C. Hinrichs, 1900.
- James, Montague Rhodes. *The Western Manuscripts in the Library of Trinity College, Cambridge: A Descriptive Catalogue. Volume III, containing an account of the manuscripts standing in class O*. Cambridge: Cambridge University Press, 1902.
- Osburn, Carroll. "The Greek Lectionaries of the New Testament." In *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*. Second Edition. Edited by Bart D. Ehrman and Michael W. Holmes, 93–113. NTTSD 42; Leiden: Brill, 2013, 93–113.
- Paulson, Gregory S. "A Proposal for a Critical Edition of the Greek New Testament Lectionary." In *Liturgy and the Living Text of the New Testament: Papers from the Tenth Birmingham Colloquium on the Textual Criticism of the New Testament*. Edited by H.A.G. Houghton, 121–159. Piscataway: Gorgias, 2018, 121–150.
- Petras, David M. "The Gospel Lectionary of the Byzantine Church." *St Vladimir's Theological Quarterly* 41.2–3 (1997), 113–140.
- Platanotis, Konstantinos N., and Anastasios N. Venetsanopoulos. *Color Image Processing and Applications*. Digital Signal Processing; Berlin: Springer, 2000.
- Riddle, Donald W. "The Character of the Lectionary Text of Mark in the Week-Days of Matthew and Luke." In Colwell and Riddle (eds.). *Prolegomena to the Study of the Lectionary Text of the Gospels*, 21–42. Chicago: Chicago University Press, 1933.
- von Soden, Hermann Freiherr. *Die Schriften des neuen Testaments in ihrer ältesten erreichbaren Textgestalt hergestellt auf Grund ihrer Textgeschichte*. II. Teil: Text mit Apparat. Göttingen: Vandenhoeck & Ruprecht, 1913.
- Swanson, Reuben J. *New Testament Greek Manuscripts: Varian Readings Arranged in Horizontal Lines against Codex Vaticanus. Mark*. Sheffield: Sheffield Academic Press, 1995.

²⁵ Tchernetska, *Greek Palimpsests in Cambridge*, 92.

²⁶ Ibid., 98.

- Tchernetska, Natalie. *Greek Palimpsests in Cambridge*. A dissertation submitted for the degree of Doctor of Philosophy, University of Cambridge, Trinity College, 1 July 2001.
- Tischendorf, Constantin, ed. *Novum Testamentum Graece* (8th edn; Leipzig: Giesecke and Devrient, 1869).
- West, M.L. "The Medieval Manuscripts of the Works and Days." *The Classical Quarterly* 24:2 (1974), 161–185.