Re-Conceptualizing the Poems of the Pearl-Gawain Manuscript in Line and Color

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Abstract
This paper furthers my argument that the scribe was also the artist of the underdrawings of the miniatures in the Pearl-Gawain manuscript and includes a re-assessment of the role of the colorist/s. Previously the 12 miniatures framing Pearl, Cleanness, Patience, and Sir Gawain and the Green Knight in London, MS Cotton Nero A.x (art. 3), the only version of these poems extant, were largely dismissed. The miniatures do not convert the texts pictorially; rather, they place the poems within a larger iconographic framework individually and as a whole. It is true that the painted layers, often unevenly applied, obscure many important details that are thematically significant, as shown in scientifically enhanced images that help to recover some of the outlines of the underdrawings. Taking into account the analysis of the pigments used, a closer look at the role of the colorists (likely more than one, judging from the overlays and differing levels of skills) it appears that the painted layers sometimes support the interpretations of the scribe-artist: at other times they appear to offer competing readings. The result is that the miniatures provide multilayered visual readings that interconnect and link motifs by repetition and contrast to unify the poems at various levels for engaged audiences. This is exemplified by a close look at the seascapes, landscapes, and courtly settings, as well as at preaching scenes and related sacramental issues, along with the presentation and role of women, all reconceptualized in line and color.

Keywords
Gawain, Pearl, Cleanness, Patience, science, manuscript, þ, ʒ, miniatures, pigments, conservation, Manuscript studies, Middle English, medieval, scribal practice, iconography

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Re-Conceptualizing the Poems of the Pearl-Gawain Manuscript in Line and Color

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“... into þe vyne I come.”
(“... into the vineyard I came”; Pearl, line 581)¹

The twelve miniatures framing the unique versions of the Middle English poems—Pearl, Cleanness, Patience, and Sir Gawain and the Green Knight²—in British Library, MS Cotton Nero A.x (art. 3), must have had a purpose; otherwise, why would they have been included? For a small, unpretentious manuscript with holes, folds, and

I dedicate this paper to Kathryn Kerby-Fulton, who has been my inspiration and guiding light ever since I first took a graduate course from her at the University of Victoria. For their interest and encouragement at various stages of my study of the Pearl-Gawain manuscript, I thank Derek Pearsall, Denise Despres, Nicole Eddy, Hannah Zdansky, Corinna Gilliland, and Wayne Hilmo. My reader’s helpful suggestions were invaluable.

¹ Malcolm Andrew and Ronald Waldron, eds., The Poems of the Pearl Manuscript: Pearl, Cleanness, Patience, Sir Gawain and the Green Knight, 5th ed. (Exeter: University of Exeter Press, 2007). Quotations and line references from the Cotton Nero A.x (art. 3) poems, mentioned in my text, are from this edition. Translations are my own.
² This is the only version of the poem extant, although Gawain, whose origins go back to Celtic myth, was a popular hero in medieval romances. See Thomas Hahn, ed., Sir Gawain, Eleven Romances and Tales (Kalamazoo, MI: Medieval Institute, 1995).
tears, it would likely have been a momentous decision to add such full-page illustrations (except for the one at the end of *Cleanness*), presumably to fill some perceived lack in the presentation of the poems. Many of the illustrated scenes have, like the ink, faded over time, but the overall impression is that they appear somewhat amateurish.

Closer examination, however, indicates that it is really the paint, which is sometimes smudged or often seems carelessly applied, that eclipses the interpretive details of the outlines of the underdrawings in several places and mars their overall appeal. Whether or not it was originally intended to color the drawings or when that was done is uncertain, but it would appear that the draftsperson and the colorists were not always of the same mind. Jennifer Lee had previously asked if the painting was done by a secondary hand. Given the new technological resources available to researchers, I wondered if some of these issues could be resolved.

Accordingly, I requested a scientific analysis of the visual elements, including whether it was possible to reveal what was under the layers of paint, what pigments were used, and whether the ink of the main text was the same as that used for the underdrawings. In his “Analysis of Pigments,” in response to my questions, Paul Garside, the conservation scientist at the British Library, indicated that the likely components for the two reds I queried are vermilion and purple (an organic red pigment such as kermes or madder; referred to in this study as pinkish red), and that the other pigments are brown (sienna), white, earth yellow, and indigo blue, with the various

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4 I submitted this request to the Cotton Nero A.x Project on 12 January 2014 (revised from 5 July 2013). The first part is included in my Appendix, below. In answer to these questions, Paul Garside generously undertook an “Analysis of Pigments Found in Cotton Nero A.x,” the first part of which was published as an appendix to my article “Did the Scribe Draw the Miniatures in British Library, MS Cotton Nero A.x (The Pearl–Gawain Manuscript)?” *Journal of the Early Book Society* 20 (2017): 127–31. His full report, together with the set of enhanced images (showing different wavelengths of light to help show details of the underdrawings more clearly), including those provided by Christina Duffy, the imaging scientist, will appear on the Cotton Nero A.x Project website. I thank the British Library for permission to reproduce both the original and enhanced images. For the online facsimile, see http://contentdm.ucalgary.ca/cdm/landingpage/collection/gawain. I thank all those whose interest and expertise facilitated this new line of research.
shades of green being mixtures of the earth yellow and indigo blue pigments. He also observed that “the ink of the main text . . . is the same pigment used for the underdrawing,” that is, iron gall ink. This evidence suggests the possibility that the scribe might have also have executed the underdrawings of the twelve miniatures in this manuscript. Subsequently, Mark Clarke, an expert in medieval pigments, approved my analysis and remarked that “English drawings were often (perhaps mostly) done in non-iron-gall ink, i.e. different from the text.”

Interestingly, Jane Roberts wondered, in her paleographical study of this manuscript, if the scribe was also the artist (see below; also fig. 11). This makes sense not only in light of the linear nature of medieval art but also because both calligraphic and drawing skills require a similar aesthetic sense and mechanical control of writing or drawing tools.

In a recent preliminary study, I argued that the scribe was also the thoughtful artist of the underdrawings, which are more than just the scribblings of an illiterate doodler; rather, it is the overlay of paint that cloaks the details of a sophisticated visual program of illustration. It had seemed to me, as it had to Paul Reichardt, that the content of the illustrations provided a visual guide to the poems that illuminated them while also transcending their separate status. Although he did not endorse Jennifer Lee’s observation that the painting might have been done by someone else, Paul Reichardt showed that there is a purposeful dispersal of the scenes and demonstrated that there are “patterns of correspondence” connecting them in terms of protagonist and settings, with some that “serve to anticipate or recall other poems in the sequence.” In speaking of these miniatures in particular, Shirley Kossick elaborated on Jennifer Lee’s observation that turning one form of art into another involves re-creating it into a new form,

5 Email to the author on 23 September 2015. I thank Michael Johnston for referring me to Mark Clarke.
6 Jane Roberts, “The Hand and Script,” forthcoming on the Cotton Nero A.x Project website. I am grateful to Jane Roberts for sharing her draft with me.
7 Hilmo, “Did the Scribe Draw the Miniatures?,” 112–36.
saying that this action is “not only interpretive but at least in some degree creative. There is no formula, in other words, for the mechanical ‘translation’ of an idea or scene from one medium into another, for each makes its own specific demands of conception and execution.”

This holds true also for translation from the medium of drawing to that of painting. Color can affect the viewer’s perceptions and have a multiplicity of meanings according to context. The present study will both explore further the reconceptualization of the poems by the scribal draftsperson, and give consideration to how the overlay of colors by one or more painters (judging by varying skill levels) encourages different, alternate readings in some cases and, in others, supports the draftsperson’s interpretive thrust. Sometimes, as Michael Camille noted concerning the ways in which an image can recall others that are reconfigured to the new context, “in the process of production one image often generates another by purely visual association.” Is it possible that, by varying means, the miniatures can be seen to “structure particular readings” of the poems, link them, and provide a reconceptualization of their meaning or meanings? By focusing on the settings, sacramental matters, and the presentation of women, I will consider how the scribe-artist and the colorists supplied multilayered visual readings to augment, link, and situate the poems within a larger cultural perspective of salvation history.

**Semantic Movement Across the Settings**

Starting with the Pearl Dreamer mourning his loss at the beginning of the manuscript and culminating in Gawain’s reception at the gate of Camelot,

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the sequence of miniatures moves the viewer ever on, indicating that, in particular, the draftsman and also, to a degree, the colorists proffer the audience ways of connecting and understanding the poems as a whole unit.

Leading finally to reconciliation and hope, the miniatures form a kind of visionary peregrination, a medieval version of the stages of grief and loss. Like any pilgrimage, this journey is exterior and interior, physical and spatial, emotional and spiritual. It rarely takes place in a real time or location, but in dream time, and in the realms of the Old Testament cosmos and legendary myths. Visually repeated features and colors in the miniatures raise the various stories to the same plane, providing transitions between them and creating a reciprocity of effect and meaning that is cumulative. Of particular interest in providing semantic movement across the various poems are the settings of a number of scenes. The seascape, landscapes, and courtyards exemplify this process, both advancing the narrative and serving as stages for meditation. In some instances there appear to have been competing ways of achieving this effect, the colorists covering over some of the telling details of the draftsman and perhaps offering foci for other ways of seeing.

The marine images preceding the first three poems, Pearl, Cleanness, and Patience, for example, become progressively more savage and culminate in the scene of Jonah and the Whale. This allows for connections, not developed in the poems individually, to be built up. Whether carelessly or deliberately, the colorist, using indigo blue paint, obscured the outlines of the sea creatures, so that their prominence and symbolic importance in these scenes is underplayed. Whatever the densely painted wavy spot below the Dreamer in the first miniature was intended to indicate (fig. 1), the rolling stream in the last three prefacing this poem is infested by sea creatures (figs. 2–4), not mentioned in the text of Pearl, but played up by the draftsman. In the last of these, a long, slithery one faces off another with

15 For a discussion of the complexities of this multilayered miniature, see Hilmo, “Did the Scribe Draw the Miniatures?,” 117–18.
Moving along, battle appears to be enjoined in the *Cleanness* miniature of Noah in which an angry-looking creature is about to attack the oar, while another with a large mouth is in the process of devouring a smaller one (especially noticeable in the enhanced version; see fig. 5). Finally, in the Jonah miniature illustrating *Patience* (fig. 6), the stunned prophet is lowered into the maw of the whale, whose head is an enlarged version of the swallowing one in the Noah miniature. Spectacularly implying the bottomless abyss from which the whale has ascended and to which it will swing round and descend again with Jonah in its maw (cf. the “beast” in Rev. 17:8), the lower curve of the whale’s body extends below the bottom
while the tail lashes back up, as if doubly encapsulating Jonah while simultaneously echoing the curve of the ark.

The progressively carnivorous aspect of the sea creatures in the successive miniatures is emphasized by the underdrawings and is climaxed in this miniature of Jonah and the Whale. Christ described his own coming death and resurrection in terms of the Old Testament story of the prophet Jonah, who was in the belly of the whale for three days and three nights (Matt. 12:40). This source may be suggested, but is not actually sourced, in the text of the poem. The draftsperson has amplified its meaning, seen
as prefiguring Christ’s own triumph over death and the devil.\textsuperscript{16} The implied message is that Christ’s death and resurrection offer the hope of salvation for all. On the other hand, the colorist who muddied the waters, so to speak, appears to have changed the message by painting over the sea creatures in

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure3.jpg}
\caption{The Pearl Maiden preaches to the Dreamer and warns him not to cross the stream. \textit{Pearl}, London, British Library, MS Cotton Nero A.x (art. 3), fol. 38/42r. © The British Library Board.}
\end{figure}

\textsuperscript{16} For a fuller discussion of the iconography, see Hilmo, “Did the Scribe Draw the Miniatures?,” 121–23.

these miniatures with indigo blue. In effect, this serves as another kind of linking mechanism, drawing visual attention away from any typological interpretation and featuring, instead, the rhythms of the streams as a byway and highway from scene to scene.

Likewise, the landscape of the first Pearl miniature is repeated in all the miniatures for this poem (see figs. 1–4). In these, although the outlines of the vegetation are somewhat obscured in the process, the colorist has extended the resources of a limited palette by varying the “relative proportions” of blue and yellow\(^\text{17}\) to render a gradation of greens for the vegetation of the landscapes, some lighter and some darker, sometimes even painting over an earthy yellow background with a thinner wash of greens. This creates an autumnal

\(^\text{17}\) Garside, “Analysis of Pigments,” 129.
ambience suitable for the time when the Dreamer entered the “erber grene, / In Augoste in a hyʒ seysoun” (“green arbor, in August, in the high season”; ll. 38–39), suggesting the possibility that this was intentional.

It is the draftsperson’s repetition of the trees, grasses, and flowers of the hilly “erber grene” that reinforces the impression that, while the Dreamer has journeyed in his vision, he is still in dream time when he sees the Maiden in a setting (see fig. 4) which, as Denise Despres observed, “evolves into the New Jerusalem of the Book of Revelation.”18 When, in the poem, the Dreamer tries to cross the symbolic stream separating life from death, the sheer effort of it causes him to waken suddenly, with his head back on the hilly arbor where his pearl fell to the ground. This last Pearl miniature, however, has him still in his dream, as if the quest for actual entry into the bejeweled New Jerusalem has not yet been granted, but which he saw in his dream as he slipped past “launcez so luʃly leued” (“branches so beautifully leaved,” l. 978). Employing different shadings and applications of green, the colorist has further emphasized this aspect by distinguishing the individuated leaves and branches outlined by the draftsperson. In this last Pearl miniature, there is a tree on either side of the stream, reflecting the draftsperson’s interpretation of Rev. 22:2, which is more precise than the generalized description in the poem stating that there were shining trees “aboute” the river (l. 1077). Curiously, the same vegetation, except for the trees, also grows in wild profusion in the penultimate Gawain miniature depicting the hero’s arrival at the Green Chapel (see fig. 14, right), visually linking this eerie wilderness scene with the Dreamer’s mound while also placing it in a strange and unworldly landscape, as if seen down a rabbit hole.19

In opposition to the wilderness forests and streams, castle compounds are also featured in a number of miniatures. In the fourth Pearl miniature,

19 Rabbits are actually popping in and out of holes in the hilly landscape on which John rests his head on Patmos in a position not dissimilar to that of the Pearl Dreamer; see the early fourteenth-century Queen Mary Apocalypse, British Library, MS Royal 19 B XV, fol. 2v; online at http://www.bl.uk/catalogues/illuminatedmanuscripts/ILLUMIN.ASP?Size=mid&IllID=50601.
the image of the New Jerusalem in which the Pearl Maiden resides is essentially a medieval castle compound surrounding internal buildings, and in this case, the flowing stream outside also serves as a kind of moat, as well as a barrier between the earthly and celestial realms (see fig. 4). At the ramparts of the heavenly court, she has become an embodiment of the Pearl Gate of John’s vision (cf. line 728, and Rev. 21:2 and 21:21). In the miniature of Jonah preaching to the Ninevites (fig. 7), the viewer is introduced to a closer view of a castle compound. The lines of its architectural construction
and its colors are similar to those of the New Jerusalem of the last *Pearl* miniature, suggesting that in this regard, the draftsperson and colorist are in accord.

The last *Gawain* miniature depicts the hero welcomed back into Camelot, which is represented by an arched gateway (fig. 8, left). Across the top, as seen most clearly in Madeley’s 1839 lithograph (fig. 8, right), the decorative motifs are evocative of the portals of the New Jerusalem mentioned in *Pearl*, which are “pyked of rych plateʒ” (“adorned with rich plates,” l. 1036). While the cross-like arbalestinas in the crenellations of the New Jerusalem and Nineveh in the earlier miniatures might represent openings for crossbows, here the crosses clearly have a symbolic Christian value and signify that the earthly court is representative of the heavenly one. Access to the entrance to heaven, denied to the Dreamer, is now granted to the penitent Gawain. This motif is anticipated by such passages as the one in *Cleanness* describing...
the disembarkment of everyone from Noah’s ark when God “Bede hem drawe to þe dor: delyuere hem He wolde” (“Bade them go to the door: He wanted to deliver them”; l. 500).

The hope of deliverance informs the subjects of a number of Cotton Nero A.x miniatures, linking them into a thematic visual program by adapting and utilizing existing iconographical resources. The entrance to heaven, for example, is often visualized by an arch or door, depicted throughout the entire medieval period from as early as the golden gate frontispiece of the early eleventh-century Cædmon manuscript and as late as the fifteenth-century Croesinck Hours scene of the Last Judgment depicting the gate of heaven opposite the mouth of hell (fig. 9, left). In James le Palmer’s encyclopedic fourteenth-century Omne Bonum, “Beatitudo” is represented by an image of two angels who are at the celestial gate to welcome the faithful, in contradistinction to “Infernus” (“Hell”), represented by an image of a yawning bestial hell mouth enclosing sinners in flames. Visionary accounts also imagine the entrance to heaven in this way, as in the early fifteenth-century Revelation of Purgatory in which the spirit of the nun Margaret is taken to a golden gate and told: “Doghtyr, go in at þis ʒate and receyue þe blisse of paradis and of heuyn.” In Pearl itself, the Dreamer sees the “golden gatez” (l. 1106). In medieval art, such portals often signify the celestial or infernal regions (as in fig. 9). In the context of the eucharistic and preaching motifs in some of the Pearl-Gawain miniatures (see below), the concept informing the arched gateway in the last miniature might also be a reminder to viewers of “the sacredness of the Church or ‘door to Heaven’ (porta coeli).”

23 The entire issue of Gesta 39, no. 1 (2000), is devoted largely to the significance of portals.
Noah’s ark (see fig. 5) does not show animals peering out but is, like Jonah’s boat, and like the castle embattlements, essentially an ideogram of the full-scale structure. It is the human drama that is featured. As Bowers observes, Jonah’s boat is anachronistically rendered as “a contemporary English fishing boat.” In the case of Noah’s ark, the triple crenellation of the mast to which Noah clings suggests the presence of the Trinity. The triple crenellation is also featured in the miniature of Jonah’s boat (see fig. 6).

26 I am grateful to Linda and Robert Olson for their specialist knowledge about boats and their discussion concerning the spiritual significance of the boats in this manuscript.

In each case, divine protection and hope for deliverance are indicated in the text of both poems (Patience, ll. 257–61; Cleanness, l. 424). By itself, the triple crenellation of the wooden mast would not necessarily have overtones of the Trinity, but similar visual allusions reinforce the concept, as, for example, the three pearls at the top of the Pearl Maiden’s gown in the third miniature (see fig. 3). While the poem “does not examine the triune nature of God,” as Denise Despres observed, the draftsperson evidently wanted to assert this. The doctrine of the Trinity was a controversial topic during this period. It was popular in illustrations featuring a conservative viewpoint such as in the historiated initial in the Vernon manuscript version featuring the Mercy Seat configuration, with its emphasis on triple motifs to reinforce the concept, and in that of the Psalter of Humfrey of Gloucester, where the Father and Holy Ghost (as a dove) in the top right are in oblique alignment with Christ as the Man of Sorrows (fig. 10). For Augustine, Noah’s ark “is a symbol of the City of God on pilgrimage in this world, of the Church which is saved through the wood on which was suspended ‘the mediator between God and men, the man Christ Jesus.’” The wood of the trees, the structures inside the castles, and the boats are painted, in whole or part, in the same ochre brown, likely sienna, further connecting the earthly and heavenly.

In the sequence of the Cotton Nero A.x miniatures, the flowing streams, like the boats, and, later, the horses in Gawain help transport and propel the viewer forward geographically and imaginatively across the landscapes

and seascapes of the various poems. In countermovement, or rather, in a kind of static superimposition of multilevel physical and spiritual locations, the heavenly court of the New Jerusalem atop the hill (cf. Rev. 21:10) of *Pearl* appears to the Dreamer while he is still asleep on the flowery mound, while the earthly courts and the boats of the succeeding poems figure the higher court, finally accessible after the sea changes experienced en route in this visual pilgrimage.

Interconnected Scenes of Preaching, Feasting, and the Eucharistic Sacrifice of the Mass

The Eucharist, according to Elizabeth Saxon, “not only recalls but is inseparable from Christ’s passion and resurrection.” The first of a series of intervisual and intertextual preaching miniatures related to this subject in Cotton Nero A.x is that in which the Pearl Maiden reproaches the Dreamer for attempting to cross the stream because he wants to recover his two-year-old child, failing to accept her risen state (see fig. 3; ll. 473–74). Having been crowned by the Lamb, the Pearl Maiden preaches to him the parable of the vineyard as a way of explaining the doctrine of grace. In the last Pearl miniature (see fig. 4), after following along the stream to its head, as she had instructed, the Dreamer is granted a vision of the New Jerusalem of John’s Apocalypse (ll. 943–44 and 952), previously likened to a vineyard and to a pearl (ll. 501–2 and 733–36). The poem ends with a prayer to Christ who, in the “forme of bred and wyn” shown us daily by the priest, may allow us to become his laborers and “precious perlez” (“precious pearls”; ll. 1209–12).

In the second Cleanness miniature, depicting the Handwriting on the Wall (fig. 11), sacramental overtones strike an unusual note, given the subject. After the consumption of food and too much wine at his sumptuous feast, Belshazzar ordered the sacred Jewish vessels, sacked at Jerusalem by his father, Nebuchadnezzar, to be fetched and used to toast idols. Despite the ekphrastic passage concerning their fine workmanship and their purpose—to stand in the temple before the Lord’s “sancta sanctorum . . . presyous in His presens,” having been anointed for sacrificial offerings to him (ll. 1490–97)—the miniature depicts the Christian vessels of the Mass. It may have been this mention of God’s presence that called to mind the doctrine of the transubstantiation and real presence by which the bread and wine of the Eucharist is transformed into the body and blood of Christ, who is thus present. It is the round communion host (here thoughtlessly or deliberately painted earth yellow) displayed within the center of the sunburst

monstrance and the golden chalice containing the wine that clearly articulate the perceived meaning and relevance of the vessels for the manuscript’s

32 The sunburst style came into prominence in the fourteenth century, according to Sheila J. Nayar, *Dante’s Sacred Poem: Flesh and the Centrality of the Eucharist to The Divine Comedy* (New York: Bloomsbury, 2014), 128. For an image of a monstrance, although not with rays, but with a white host in the center, see British Library, MS Egerton 1070, fol. 76r, ca. 1410, online at http://www.bl.uk/catalogues/illuminatedmanuscripts/ILLUMIN.ASP?Size=mid&IllID=48328.
viewers. This contemporary visual interpretation by the draftsperson is reinforced by the inclusion of the bishop’s crozier, likely inspired by the previous mention of vessels having been blessed by the bishop’s hands and anointed with the blood of beasts in solemn sacrifice (ll. 1445–48). It would appear that the draftsperson took these descriptions that much further to make the event directly relevant to a Christian audience in order to place an emphasis on the sin of sacrilege against consecrated holy vessels (including persons) for the administration of the sacrament and, what is even worse, according to a discussion by Thomas Aquinas, against the sacrament of the Eucharist itself.

The illustrated figure of Daniel in this miniature can be seen not only as the interpreter of the writing on the wall, but also as a preacher drawing the moral lesson that immediately precedes the poetic account of the feast: that we should make ourselves clean and conform to Christ, who is himself a pearl (ll. 1067–68); purified by penance, we will also become pearls (l. 1116). Once washed and polished like scraped parchment, made sacred to the Lord, we should beware of his wrath if, like Babylon in Belshazzar’s time, we defile ourselves with sin (ll. 1117–56). In its repositioning of the Jewish vessels to those of the Mass, the miniature draws attention to a deeper theological significance of the Old Testament story than does, for example, Chaucer’s rather worldly Monk, who applies it to the secular domain by which fortune may deprive a lord of his reign, riches, and friends.

It is as a preacher that Jonah appears in the second Patience miniature (see fig. 7). Jonah finally follows God’s command to preach to the Ninevites. In the miniature, he is dressed, like Daniel, in medieval Jewish fashion, in a green flowing jubba (although here its yellow highlights do not always follow the underdrawing). Each one also has a turban painted a red that, in contrast to the vermilion red that is also used as a variant in these minia-

34 See Andrew and Waldron, The Poems, 159, note to ll. 1143–48.
tures, is more of a pinkish red. In this case, Jonah’s sleeves are trimmed with ermine, more closely identifying him as a type of Christ since both were “resurrected” (cf. Dan. 6:16–22). It is in this mode that Jonah is represented as preaching; his antitype, Christ, was thought to have preached to the spirits in prison, based on I Pet. 3:19 (see also Eph. 4 and Isa. 42:7), taken to mean the captives in hell during Christ’s Harrowing of Hell. In the poem, however, Jonah tries to escape from having to preach God’s words to the “mansed fendes” (“cursed fiends”; l. 82). The miniature does not depict the reluctant Jonah, but the Jonah who does, like his antitype, preach; in this case, to the Ninevites who will, like the captives in hell, be saved, thereby visually strengthening the typological association for the viewer. Since neither the subject of Jonah preaching to the Ninevites nor that of Christ preaching to the dead was typically pictured in medieval art, it is all the more significant that the former was chosen by the drafts-person to follow the miniature of Jonah and the Whale, the type for Christ’s Harrowing of Hell.

This *Patience* miniature of Jonah preaching might also be evocative of “a scene of the giving of communion,” as suggested by Jane Roberts. The illustration of the Pope about to give a wafer to a praying and kneeling Emperor Philip I in *Les Grandes chroniques de France* (fig. 12) is similar, with the Pope bending forward toward the kneeling recipient. In the *Patience* miniature, the kneeling man in blue similarly has his hands clasped in prayer. The connection of Jonah and the Whale to the Passion and the Eucharist is made explicit in a historiated initial beginning Psalm 68 in the Rutland Psalter (fig. 13). In the upper part of the initial, above the scene of

36 See “Purple” in Garside, “Analysis of Pigments,” 130. He relates it to “organic red pigments such as kermes or possibly madder.”
39 Jane Roberts, email communication with author, 24 June 2016.
40 British Library, MS Royal 16 G VI, fol. 279r; see http://www.bl.uk/manuscripts/Viewer.aspx?ref=royal_ms_16_g_vi_f279r.
Jonah, a cross-nimbed Christ holds the communion host, as if to make the connection clear.

The introductory miniature for *Sir Gawain and the Green Knight* (fig. 14, left), while not directly eucharistic, nevertheless has sacramental overtones. In the lower register it depicts the scene at the Yuletide feast at Arthur’s court in which Gawain has just beheaded the Green Knight. As if presenting it to the king—a visual interpretation of the “derrest” (“noblest”; l. 445)⁴¹—the Green Knight holds up his own severed head. The central

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⁴¹ Andrew and Waldron, *The Poems of the Pearl Manuscript*, 224 n. 2.
focus of this miniature, both visually and thematically, is the dripping and spurting blood in vermilion red,\(^{42}\) the same color as Gawain’s long-sleeved short surcoat (cf. ll. 2026 and 2036). Just as color contrast is employed in the poem to intensify the effect of the bursting blood against the bright green ground (l. 429), so in the miniature the visual impact of the bleeding head is highlighted by contrast with the various greens defining not only the Green Knight and even his horse (reflecting l. 175), but also one of Gawain’s leggings, as if to anticipate the Green Knight’s transposition with Gawain when the situation is about to be reversed (fig. 14, right). Indicating further the possibility that this colorist knew at least some details of this poem, which describes the green-engraved staff of the battle axe (l. 216), the staff

is likewise painted green in the miniature. Even in the upper register, where it is held in readiness by Gawain, the staff of this exaggeratedly large pollaxe points down obliquely to the Green Knight below, as if indicating its target. The same axe is a prominent feature when their roles are interchanged and the Green Knight, having sharpened it, holds it in readiness to decapitate the armed Gawain, who, still wearing a red surcoat, is shown riding Gringolet, whose trappings are also red (cf. l. 603).

The image of the Green Knight’s copiously bleeding head is, in its gruesome detail, similar to that in several of the marginal illustrations featuring the passion of Saint Edmund in the early fourteenth-century Rylands La Vie Seint Edmund. In that series, the severed head is held up by the executioner, hidden in a wood, guarded by a wolf, heard to speak, and reattached
to its body, exhibiting a fascination with the subject not unlike that exhibited in the Gawain scenes. The image of the Green Knight’s bleeding head would likely also have had special resonance for viewers of the Gawain miniature, who would have been very familiar with the story of John the Baptist, whose head was presented by Salome at Harod Antipas’s feast (Mark 6:17–29 and Matt. 3:9–11); in medieval England, some 496 churches were dedicated to him, and he was the patron saint of Richard II.

The sacramental overtones of the first Gawain miniature are furthered by association with the composition of the miniature depicting the writing on the wall at Belshazzar’s feast (see fig. 11), a “centerpiece,” as Reichardt noted, whose “special significance” is reinforced by its physical placement in the middle of the sequence of miniatures and in the middle quire. The introductory Gawain miniature duplicates the small altar linens and also includes gold-colored vessels—in this case, at either end of the tablecloth. It may be that the concept informing this introductory Gawain miniature had to do with subtly connecting and incorporating the mystical, sacrificial, and seasonal aspects of this romance to the Christian eucharistic sacrifice. In the Psalter of Humphrey of Gloucester (see fig. 10), the kneeling Humphrey has a vision of the profusely bleeding Christ, whose blood, in a kind of

46 Reichardt, “Several Illuminations,” 128.
47 Their shape is suggestive of the thirteenth-century reliquary from Cologne; see http://www.metmuseum.org/art/collection/search/464232. In the Belshazzar miniature, the gold cup in the middle also resembles the Royal Gold Cup in the British Museum; see https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Royal_Gold_Cup.html. Of interest is this connection between the sacramental and the royal.
reversal of the process of transubstantiation, spurts out in three streams from the gash in his side down past a round white communion host and into a golden chalice. This bleeding Christ, as the Man of Sorrows and member of the Trinity, is shown rising from the tomb-like altar in front of this kneeling figure.\(^{48}\) The salvific blood of Christ is an important feature in this kind of devotion, as indicated in the passage in *Pearl* in which the Dreamer has a vision of the Lamb of God with a wound in his side from which “his blod out sprent” (“his blood gushed out”; l. 1136). As the poet tells it, in its plenteousness, “þe blod vus boʒt fro bale of helle” (“the blood bought us from the pain[s] of hell”; l. 651). There may have been a play on “bale” and “balé” (“belly”; cf. *Gawain*, l. 1333),\(^{49}\) identifying the pains of hell with the belly of hell. In the intertextual and intervisual images in this manuscript, there is a progression of thought relating to blood and sacrifice, not least because of iconographic Christian analogues depicted in such works as the Humfrey Psalter.

In her study of “Violent Imagery in Late Medieval Piety,” Caroline Walker Bynum mentioned that “the promotion of the feast of Corpus Christi . . . made devotion to the eucharistic host (the body of Christ) ever more central liturgically and theologically.”\(^{50}\) By the fourteenth century, the celebration included the popular Corpus Christi plays that featured such subjects as Noah, Belshazzar’s Feast, Jonah and the Whale, and Christ’s Harrowing of Hell. The scenery, simply staged and enacted on wagons, might well have been in the visual memory of the scribal draughtsperson of the plain *Pearl*-*Gawain* miniatures. Such images, as Elizabeth Saxon remarked with respect to their portrayal ever since the earliest Christian period, whether “juxtaposed or merely joined in the viewer’s memory, assert the necessity and salvific nature of the Eucharist.”\(^{51}\)

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48 Coincidently, Christ has a green crown of thorns, while the Green Knight has a leafy garland on his head; see Hilmo, “Did the Scribe Draw the Miniatures?,” 123–24.
49 The manuscript has “baleʒ” on fol. 108v, last line.
In the poem, and especially as visualized so prominently in the last two *Pearl* miniatures (see figs. 3 and 4), the Pearl Maiden’s presentation, showing her instructing and preaching to the narrator, is just on the edge of being provocative, perhaps even with a reformist slant about it. The other women who appear in the miniatures might seem at first to perform only secondary roles. A closer examination of the overall dynamic of their involvement indicates that, however subtly, they are shown as precipitating or helping to reveal the deeper meaning of an episode. These portraits not only provide further unifying connections between the miniatures, but also serve as a telling commentary on how the women are conceptualized.

The Pearl Maiden does not have a pearl crown, as mentioned in the text; rather, it would appear that she was purposely given a gold crown, painted yellow in this unpretentious manuscript, to associate her with the rest of the queens in the miniatures, including Belshazzar’s queen (see fig. 11) and Guinevere (see figs. 8 and 14). The Pearl Maiden, reflecting the text (l. 220), is dressed in white (see figs. 3 and 4), connecting her purity with the Pearl and Lamb of God. The veils of the woman who raises her hands in prayer in the miniature of Jonah preaching (see fig. 7) and of Noah’s wife (see fig. 5) are painted white, as if to endorse their piety. The woman in the Jonah miniature and Guinevere, in both of her portrayals, wear green gowns highlighted with a lighter, yellowy green; whether this is to provide color contrast with the accompanying figures in their scenes or to ally them in some way with nature or some of the male figures is uncertain. The earthly queens who are wives are all shown in a positive light in their roles as supporters of their husbands. Both Belshazzar’s queen and Guinevere appear to

52 Eve is commonly shown with her hands raised in prayer in scenes of the Harrowing of Hell; compare, for example, the Croesinck Hours version, fig. 9, right.

53 Reichardt, “Several Illuminations,” 131, sees their white head coverings as a sign that they are devout.
have their husband’s backs, as it were, in each case abutting them, as if pro-
viding bodily and emotional reinforcement.

Noah’s wife, unlike the recalcitrant one in Chaucer’s “Miller’s Tale,”
not only supports her husband, who is clutching the triple-crenellated
mast, but also points meaningfully down at the oar with which the oarsman
stirs the waves below (see fig. 5). Could this, together with the Trinitarian
suggestiveness of the mast and the poem’s reference to the Lord as “lodez-
mon” (“pilot/steersman”; l. 424), be symbolic of the wood of the cross by
which the devil and death were overcome? Noah himself was thought to
signify Christ, as mentioned early on by Bede. The identification of Noah
and the oarsman is reinforced by the colorist’s use of yellowy highlights
shading to green for the garments of both of these figures. The cross-barred
oar is suggestive of a wooden tau cross favored by Saint Francis and subse-
quently worn by Franciscans. Such a tau cross is presented by Alban to the
kneeling Humfrey in the latter’s psalter (see fig. 10). The biblical account in
Genesis does not mention that the ark had oars or a mast, but the poem
specifies that it did not have a mast (l. 417). These additions by the drafts-
person appear to reinforce the sort of exegetical freight that was attached
to such narratives. The fact that, in the Cleanness miniature, it is Noah’s wife
who gestures toward the oar expands further the role of this woman in
interpreting for Noah, but really for the viewer, the spiritual meaning of the
event as predictive of redemption for mankind.

While Cleanness is much concerned with cleansing, especially of
the sexual excesses that led to God’s anger and the punitive Flood, Christian
values are supplemented with elements from the mythical world of Celtic
legend in Sir Gawain and the Green Knight. The portrait of Lady Bertilak in
the miniature depicting the Temptation of Gawain (fig. 15) is that of an
enchanting young seductress, but it also gestures toward the old Morgan le
Fay in its composite features. Like the former, she has her hair tucked into
a baggy fabric caul (headdress) covered by a crespine—that is, a net studded
with pearls (l. 954) and jewels (l. 1738). The lady’s attire did seem to be of

54 Chaucer, “The Miller’s Tale,” Riverside Chaucer, I (A), 3538–43.
55 Bede the Venerable: Homilies on the Gospels, Book One, trans. Lawrence T. Martin and David
Hurst (Kalamazoo, MI: Cistercian Publications, 1991), 140.
interest to this colorist, who splashed Lady Bertilak’s “mery mantyle” (“merry mantle”; l. 1736) with red and green dots, a decorative feature exclusive to her portrait in this manuscript. A tropological reading of her polka dot dress was given by Meradith McMunn, who argued that these dots were likely read as a sign of disease or moral turpitude.⁵⁶ Although it blocks out the details of the folds, scalloped edges, and frame (and so was

perhaps painted by another colorist), the vermilion red paint of Gawain’s bed might, in this context, have had erotic overtones, not unlike that of David’s red bed covering in, for example, the illustration of Abishag in a bible *historiale* in the National Library of the Netherlands. Abishag, who was brought to the old king’s bed to warm him (Vulgate, 3 Kings 1:1–4), stands before him in a pose comparable to that of Lady Bertilak.

Although the poet describes Lady Bertilak’s low neckline (ll. 9555 and 1740–42), the draftsperson depicts her in a high-necked houpelande, which fuses this portrayal with that of the old hag, who was muffled up to the chin with white veils, and whose forehead was swathed with silk “Toret and treleted with tryflez aboute” (“ornamented and latticed about with trifles”; ll. 959–60).

Just as Gawain and the Green Knight are visually transposed in two scenes (see fig. 14), so here Lady Bertilak and the old hag, who is really Morgan le Fay and the instigator of the beheading game (ll. 2446–62), can be seen as two aspects of the shape-shifting goddess presented in a kind of “simultaneity of vision,” to adapt Shirley Kossick’s term. The combined features of her polka-dot dress, high neckline, and decorative headdress are “a type of embodied dress” that “materially constitute,” in this case, her fused identity.

The poet ironically calls the hag a “mensk lady” (“honorable lady,” l. 964). The floating “bob,” as Kathryn Kerby-Fulton and Andrew Klein have pointed out, allows for a great deal of flexibility in its being applicable to its immediate context and to any or all of the lines of the “wheel.” In this case, the bob, “For Gode” (“by God”), is placed in the manuscript (not the printed

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57 The Hague, MMW, 10 A 19, fol. 33r; see http://manuscripts.kb.nl/iconclass/11C15/page/2.
58 In the first of these, the mounted Green Knight holds up his own head, later to be seen as miraculously reattached to its owner in the wilderness forest, where Gawain, in a shape-shifting relationship, is now mounted and it is the Green Knight, not Gawain, who holds up the green-handled axe.
59 Kossick, “Illustrations,” 33.
versions) beside the line referring to the “mensk lady,” and so the laughter this jest provokes can apply to that line and to the first two lines of the “wheel” describing her bulging body parts—“by God.” Repeated, however, after each of the last two lines describing the younger woman’s beauty, “by God” becomes an appreciative affirmation, especially if accompanied by an appropriate change of tone when read aloud (ll. 965–69). An awareness of the possibilities of the floating bob would have made this passage stand out for the scribe, and if this was indeed the same person who drafted the miniature, then it argues for a greater likelihood that the presentation of the enchantress was intended to be delightfully multivalent for an astute audience, especially after frequent perusal.

This sort of economical approach is also a feature of the inclusion of Belshazzar’s queen and the exclusion of secondary characters in the miniature of Belshazzar’s Feast (see fig. 11). The poem, echoing the biblical account, mentions that the king’s concubines were seated with him, defiling the sacred vessels on the dais. This is what is illustrated in the J. Paul Getty Collection MS 33 (fig. 16), picturing the king and his crowded court, most

of whom are looking and gesturing toward the hand writing on the wall. The king is surrounded by three concubines, the smug one décolleté in an orange red gown, looking, as the saying goes, “no better than she ought.” In the Cleanness miniature, on the other hand, events are conflated, simplified, and altered to emphasize the meaning. There are only three figures: Belshazzar, his queen, and Daniel. But why was the queen added, since she was not at the feast?

In her all-important capacity as adviser, Belshazzar’s queen raises her left hand in speech, pointing in the same direction as the writing on the wall. Further emphasizing her pivotal role in the semantic flow of movement in this composition, her right hand touches the left shoulder of Belshazzar, whose right hand almost touches that of God, while his left points down to Daniel, explicating the meaning of the words—with the blank parchment in the lower-right segment graphically marking what will become of his reign. The writing hand, the queen, and Daniel are associated with each other by the pinkish red wristbands of the first two and Daniel’s pinkish red turban. The colorist appears to be supporting or even augmenting the draftperson’s reading of this scene. In this and a number of other miniatures, the wristbands or wristlets (actually mentioned in Pearl, l. 217) of the main figures help to emphasize gestures; here, that of the writing hand and the queen. As the worthy queen who urged her husband to seek out Daniel, the interpreter of dreams, it is she whose actions set in motion the unlocking of the meaning of the inscribed words. In the miniature, the Hand of God has just lifted his quill from the parchment scroll, a nice added touch, not mentioned in the poem, which plays with the idea that the inscription is also lettered on the parchment of this manuscript.

This central scene is all about the import of these words, but they are also important because they were written, in the miniature, by the scribe, as mentioned by Jane Roberts. Not only did she note the similarities of ink used for this inscription to that of the main text, but she also observed that the “lettering of the prophecy on the scroll, f. 56v, ‘mane : techal: phares’

looks similar” to the enlarged display script used for words like “‘Amen’ at the end of each poem.”64 This evidence clinches the argument that the scribe composed the miniatures. And, while Belshazzar’s queen obviously does not point to this factor, the involvement of women in some direct or indirect capacity might fruitfully be kept in mind in the conversation about the context of the manuscript’s making and audience. As indicated by E. Jane Burns, women’s silent gestures show “how the stories they tell with their hands redefine the parameters of woman’s speech”65—in this case, the gestures of the women articulate their important role in the stories the miniatures tell.

**Science, Art, and Meaning: Further Considerations**

My study is almost a textbook example of what can be resolved concerning issues that technical analyses can help answer, as posed by Stella Panayotova and Paola Ricciardi: how many pigments did the artist use, were they mixed or applied in separate layers, what do they reveal about the artist’s skill, what can be penetrated beneath the painted surface without touching it, and were the same materials used for text and decoration?66 In answer to my questions, Paul Garside reported on the limited palette of six pigments used for the miniatures, while the seventh, green, is a mixture of various shades of the indigo blue and earth yellow. The blue used for the decorated letter on folio 83/87r beginning the text of *Patience* is azurite, however, indicating

64 Roberts, “The Hand and Script,” 4. I am grateful to Jane Roberts for sharing her draft with me and for our email correspondence regarding this manuscript.

65 Of course, E. Jane Burns is referring to the silent gestures of Philomena and Proclue, and of Philomena’s speaking through the tapestry she made by hand, but something of the same principle can be applied to the visual portrayal of the women in the *Pearl-Gawain* miniatures. See E. Jane Burns, *BodyTalk: When Women Speak in Old French Literature* (Philadelphia: University of Pennsylvania Press, 1993), 118, 124.

that another person was responsible for these capitals. Enhanced monochrome images for the miniatures give an idea of what can be penetrated under the paint layers, as shown by those included in this study, including the last Pearl miniature and those featuring Noah and Jonah. The same iron gall ink was used for the underdrawings and text, indicating that the scribe was also the draftsperson.

Because the painted layers often obscure significant features of the underdrawings, it is fairly obvious that the scribe-artist did not likely paint over the initial outlines. It follows that, however long it took to write out the texts of the four poems, the drawings would have been added around the same time, especially since the text in one of the miniatures was written by the scribe, as indicated by Jane Roberts. Certainly there often appears to be some shift away from what the scribe-artist intended, as in the case of the indigo blue covering the marine creatures infesting the various streams and culminating in the typological reading of the Jonah and the Whale episode. On the other hand, the layerings of autumn colors in the Pearl miniature settings suggest the possibility that this was intentional in reflecting the text. The use of green for the pollaxe shaft, as mentioned above, for the Gawain miniature likewise seems purposeful. Yet the omission of green on the Green Knight’s leafy garland or headband, which would have identified him more clearly as the “green man,” has been painted the same yellow as his hair. Did the same person paint the eucharistic host yellow in the miniature of Belshazzar’s Feast?

Other issues concerning the painting of the miniatures are not necessarily due to oversight or carelessness or variant interpretations. For example, the streaky pinkish red of some of the clothes worn by various figures had seemed to me, in previous perusals of the miniatures, due to lack of skill. When it is considered that, in this unostentatious manuscript, this pigment

67 Garside, “Analysis of Pigments,” 127–30. He answered my query asking if this blue pigment was the same as the blues used in the illustrations; see Appendix, below, regarding the blues.
69 This is identified in Garside, “Analysis of Pigments,” 130, under “purple,” where he suggests it could be kermes or madder.
is less likely the more expensive kermes,\textsuperscript{70} but rather madder, which is a transparent pigment,\textsuperscript{71} then its apparent thinness of application is partially explained. Improper mixing in the preparation of this madder\textsuperscript{72} or the use of a poor-quality brush with rough bristles might account for some of its appearance. As for vermilion, the other red, one of the properties of this opaque pigment is that it is an “unreliably permanent pigment” and that it can darken or even turn black.\textsuperscript{73} This could account for the darker patches, for instance, on the red houpelande worn by Belshazzar’s queen and on a number of other subjects in this manuscript. Of course, it is difficult to reconcile the sophistication of Lady Bertilak’s dotted dress with the wholesale blocking-out of the bed in vermilion red, unless the red dots were added by another colorist, possibly one who added the red and white spots in the \textit{Pearl} miniatures, notably on top of the dark spot in the first one.\textsuperscript{74}

Other detractions from the coloring of the miniatures are due to the smudging of the pigments, as for example, the reds, greens, and blues on the figure of the standing Gawain in the first miniature in that series, not to mention the fading of details, such as the features of his face. Whether these depredations are due to time-related issues combined with frequent viewing or poor storage, as well as the use of lesser-quality pigments for the miniatures, is difficult to ascertain. It is the application of the colors, sometimes a bit sloppy and sometimes quite precise, together with the state of preservation of the miniatures that creates difficulties for modern viewers. It is helpful to

\begin{itemize}
  \item \textsuperscript{70} Kermes was some twenty-nine times more expensive than madder, according to John Block Friedman, “Coats, Collars, and Capes,” \textit{Medieval Clothing and Textiles}, ed. Robin Netherton and Gale R. Owen-Crocker (Rochester, NY: Boydell and Brewer, 2016), 73.
  \item \textsuperscript{71} Ralph Mayer, \textit{A Dictionary of Art Terms and Techniques} (New York: Thomas Y. Crowell, 1975), 228. Madder can range in color, according to the soil in which the root is grown, from peach through to pink red or magenta to deep red.
  \item \textsuperscript{72} See, for instance, the time, skill, and labor involved in the preparation of madder, as explained in one of the medieval recipes edited by Mark Clarke in \textit{The Crafte of Lymmyng and the Maner of Steynyng: Middle English Recipes for Painters, Stainers, Scribes, and Illuminators} (Oxford: Oxford University Press for the Early English Text Society, 2016), 13–14. In this one, having a good “sawcerfull of þyn ale and somewhat more” might account for a great deal!
  \item \textsuperscript{73} Mayer, \textit{A Dictionary of Art Terms and Techniques}, 420. On the propensity of vermilion turning “blacke and badde,” see also Clarke, \textit{Crafte of Lymmyng}, 89.
  \item \textsuperscript{74} See Hilmo, “Did the Scribe Draw the Miniatures?,” 118.
\end{itemize}
keep in mind some of the possible causes, whether technical or due to the differences of more than one engaged colorist, as to why the painting process is so uneven. There are enough reasons, however, to consider the work of the colorist/s judiciously. It is clear that there was a thoughtful engagement with the subject matter, whether in support or amplification of the design of the scribe-artist, or even when in some disagreement with another colorist. Further, while there are obvious correspondences between the text and the interpretations of the scribe-artist, it seems unlikely that this person was the original poet because of the precision of the dispersal of trees in the last Pearl miniature, the addition of the sea creatures in the various seascapes, the focus on the typological reading of Jonah and the Whale, the addition of the oar to Noah’s boat, and in the case of Belshazzar’s feast, the inclusion of the vessels of the Mass, the parchment scroll, and the queen. Every step in the design and coloring process involved a choice.\footnote{As remarked by Heidi C. Gearhart, when describing the way in which Theophilus, a writer of instructions on medieval art, moralized artistic labor. See Theophilus and the Theory and Practice of Medieval Art (University Park: Pennsylvania State University Press, 2017), 88.}

**Conclusion**

The miniatures examined in this study expand the dimensions of the text, most obviously in the case of the scribe-artist whose conceptions inform the underdrawings, but also, if somewhat more ambiguously, by the colorists who came afterwards. As testified by the scientific evidence and iconographic considerations, it is clear that the scribe-artist built upon motifs from one miniature to another and that the colorists also enlivened the process by repetition and contrast. The result is that an overarching visual program has been created that augments, integrates, and unifies the poems on various levels. Interconnected settings and subjects, in one way or another, direct the medieval viewer to “serue in His syʒt” (“serve in his sight”; last line of Clean-ness) and the modern viewer to labor for further elucidation in the vineyard of this modest little manuscript containing some of the most important poems in Middle English.
Appendix: Cotton Nero A.x Project request for scientific analysis of the visual elements, including the illustrations and the decorated letters (e.g., the chemistry of the pigments and inks)\textsuperscript{76}

Part of the purpose is to help determine such issues as: the sequence of tasks and how many stages/people might have been involved, when the illustrations were made in relation to the text, what overlap there might have been, and what differences there might have been in the quality of the materials used. A related issue is to determine if the spine of the manuscript was cut, expertly patched, and reassembled at some later date.\textsuperscript{77}

A. Pigments and Binders

Blues, Blue Green, Green, Yellow, Yellow Ochre, and Brown

1. What pigment/s are used for blue, both light and dark, e.g. the 82/86r illustration of Jonah and the Whale OR the 82/86v illustration of Jonah preaching?
2. Is this blue the same as that used for the decorated letter on folio 83/87r (facing the Jonah preaching scene on 82/86v)?
3. Is the green on 82/87v a separate pigment or a mixture of the blue and yellow pigments used in the same folio?
4. Is blue sometimes painted on top of yellow to give the effect of green shading, or are there two different greens on 125/129v and 125/129r? Does one green simply have more blue added to it (e.g., the dots on the lady’s gown as distinguished from the more yellow green of alternate stripes on the blanket of the sleeper on 125/129r; or on the standing figure with the axe as distinguished from the more yellow green in parts of the landscape)? Could it be that the lighter, more yellow green is simply the same green, but thinned and painted on top of a yellow ground?
5. What pigment/pigments are used (layered?) on top of the wavy spot on 37/41r of the Dreamer sleeping, or inside the barrow of 125/129v, or on the top of the arch of 126/130r of Gawain entering Camelot?
6. What pigment is used for the ochre color, for example, on the boat of 82/86r or on the buildings of 82/86v? Is it a separate pigment or a mixture of brown (ink or paint) and yellow?
7. Why are some of the paints so streaky and greasy looking, especially blue/greens? Poor quality pigments or just a rough brush? What is used as a binder or to thin the paint? Is it water soluble or is there any evidence that oil was used in some

\textsuperscript{76} This is the first part of my request for a scientific analysis submitted on 12 January 2014 (revised from 5 July 2013) to the Cotton Nero A.x Project. I have added the pencil as well as the ink foliation for ease of reference.

\textsuperscript{77} This refers to Part B of my request, not included here.
way? Why do some of the pigments soak through the parchment onto the reverse side of the folio so much on some of the illustrations and decorated letters (126/130v and 83/87v) and not others (this is not the case with all verso sides, e.g., 56/60r and 56/60v, or 82/86r and 82/86v)?

Reds
What pigments are used to make the two colors of red in the illustrations—for example, in the scene of Jonah preaching on 82/86v? Is one of these different from the (rubricating?) red of the decorated letters, for example, on 83/87r (see also 90/94v and 91/95r)? Are the red spots on 57/61r and 83/87r the result of transfer due to damp or because these folios might have been folded before the paint was completely dry? In the digital image, there is an odd splash of red seemingly dropped accidentally on the top of the fish head on 38v (sic 37/41v) illustration of the Dreamer walking. Does it match any other red used in the illustrations or the decorated letters?

Browns and Ink
What pigments are used for the ink of the main text, for example, on 82/86r? Also on 82/86r, is the same pigment used for the underdrawing (e.g., on the bottom of the boat and defining the fingers holding Jonah) and, separately, the highlighting of some of the outlines on top of the finished painted illustration of the boat and the fingers (i.e., did the person doing the initial drawing likely also do the final outlining)? Is the brown of 82/86v on the rounded arch of the left doorway and the outlines and fills of the cross holes in the battlements the same brown (might answer the same question)?

Is the ink of the manicules (e.g., very faint, just over halfway down the left margin on 55/59v and 62/66v) different from the main text on the same pages? Is the ink of other marks, including corrections, different from the main text (e.g., 67/71r)? Is the ink of the added motto at the bottom of 124/128v different from the text above the illustration on 125/129r, and are these different from the main text of the manuscript and from any other marks in connection with the text?

Under/Drawing Outlines and Layers of Paint
Is it possible to remove all the layers of paint from one or two illustrations to reveal what the (initial) artist had drawn (could be just the underdrawing), for example, of 125/129v of Gawain seeking the Green Chapel, and of 82/86r of Jonah and the Whale? For one or more of these folios, is it possible to determine in what sequence the original outline drawing, the addition of the different colors, and the final outlining of parts (for emphasis) was done?
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