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Modeling the Norwich Cathedral Cloister Bosses: Sculpture, Photogrammetry and the Mobile Spectator¹

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My PhD research concerns sculpture produced in England in the fifteenth century. I am currently writing about sculptural bosses from East Anglia, focusing particularly on the later examples in the cathedral cloister at Norwich, which date from c.1410-1430. These bosses have not been completely ignored by scholars. Veronica Sekules has published her thoughts on the relevance of local politics to the choice of the bosses' subject matter,² but no one has discussed their sculptural style. It's my contention that this is, at least in part, because their curvature and distortion mean that they don't photograph well (**fig. 1**). We have become accustomed to appreciating sculptural aesthetics through a camera lens, and so these bosses, which require the viewer to rove around them in iterative orbits, slowly decoding each scene, have been left behind. Photogrammetric modeling, however, now widely available, seems to be an appropriate tool with which to study their complex spatial distortions.

Geraldine Johnson has shown that, since the publication of Heinrich Wölfflin's essay "How to Photograph Sculpture" in the early twentieth century, it has been recognized

¹ This article is an expanded version of a contribution prepared for the recent British Art Studies Conversation Piece on the same topic. I would like to thank Amy Jeffs and the editorial team for their assistance in its preparation. Amy Jeffs *et al*, "Disciplining the Digital: Virtual 3D Reproduction, Pilgrim Badges, and the Stuff of Art History," *British Art Studies*, Issue 6 (2017), <https://doi.org/10.17658/issn.2058-5462/issue-06/conversation> (accessed June 29, 2017).

² Veronica Sekules, "Religious Politics and the Cloister Bosses of Norwich Cathedral," *Journal of the British Archaeological Association* 159, no. 1 (October 2006): pp. 284–306.



Figure 1 Boss depicting the Last Supper, c.1425. Cathedral Cloister, Norwich. Photo: Robert Hawkins.

that the photographs chosen to represent sculpture for publication have a great effect on the reader's and author's impression of the work.³ In a sort-of "feedback loop," the static image of sculpture offered by photography has dramatically influenced our understanding of sculptural aesthetics. Wölfflin, for example, argued that any "good" sculpture should have one (or at most two) dominant angle(s) from which it ought to be viewed.⁴ His friend Adolf von Hildebrand took this "planocentrism" further, demanding that sculptors produce plane-orientated sculpture to prevent the viewer from

³ Geraldine A. Johnson, "'(Un)richtige Aufnahme': Renaissance Sculpture and the Visual Historiography of Art History," *Art History* 36 (2013): p. 12.

⁴ Heinrich Wölfflin, "How One Should Photograph Sculpture," trans. Geraldine A. Johnson, *Art History* 36 (2013): pp. 52–71.

being restlessly “driven all around.”⁵ It seems to me that this extreme privileging of the plane, bolstered by the hegemony of the photograph, has severely compromised our understanding of pre-modern sculpture. Some sculptures demand that we are “driven all around” – how, then, ought we to photograph *them*?

The limitations of conventional (static, monocular) photography have not escaped comment by contemporary scholars of medieval sculpture. Jacqueline Jung and Jules Lubbock (among others) have sought to challenge the dominance of single “authoritative” photographs in the discussion of sculptural monuments.⁶ They each offer sequences of photographs of monuments (Sluter’s *Well of Moses* and Pisano’s pulpit reliefs, respectively) to represent the manifold viewing angles that these sculptures anticipate. These photo sequences, however, do not ultimately disrupt the hegemony of the camera. In presenting multiple viewpoints of sculptural objects, Jung and Lubbock challenge the Wölfflin/Hildebrand stress on a *single* plane, but imply that sculpture is understood as a *succession* of planes.

The earliest pioneers of photography sought methods that might address these limitations of the single photographic plate.⁷ Stereoscopic prints, developed in the 1850s, present two views of an object which, when viewed together in a stereoscope, resolve in the brain much as normal binocular seeing does, creating an illusion of three dimensionality. Sculptural artifacts were, understandably, a popular subject for early

⁵ Adolf von Hildebrand and Max Friedrich Meyer, *The Problem of Form in Painting and Sculpture* (New York: G. E. Stechert & Co., 1907), p. 95.

⁶ Jacqueline Jung, “The Kinetics of Gothic Sculpture: Movement and Apprehension in the South Transept of Strasbourg Cathedral and the Chartreuse de Champmol in Dijon,” in *Mobile Eyes: Peripatetisches Sehen in Den Bildkulturen Der Vormoderne*, eds. David Ganz and Stefan Neuner, Eikones (Munich: Wilhelm Fink, 2013), pp. 133–73; and Jules Lubbock, *Storytelling in Christian Art from Giotto to Donatello* (New Haven, CT: Yale University Press, 2006).

⁷ A good summary is Jens Schröter, *3D: History, Theory and Aesthetics of the Transplane Image*, rev. ed. (New York: Bloomsbury Academic, 2014).

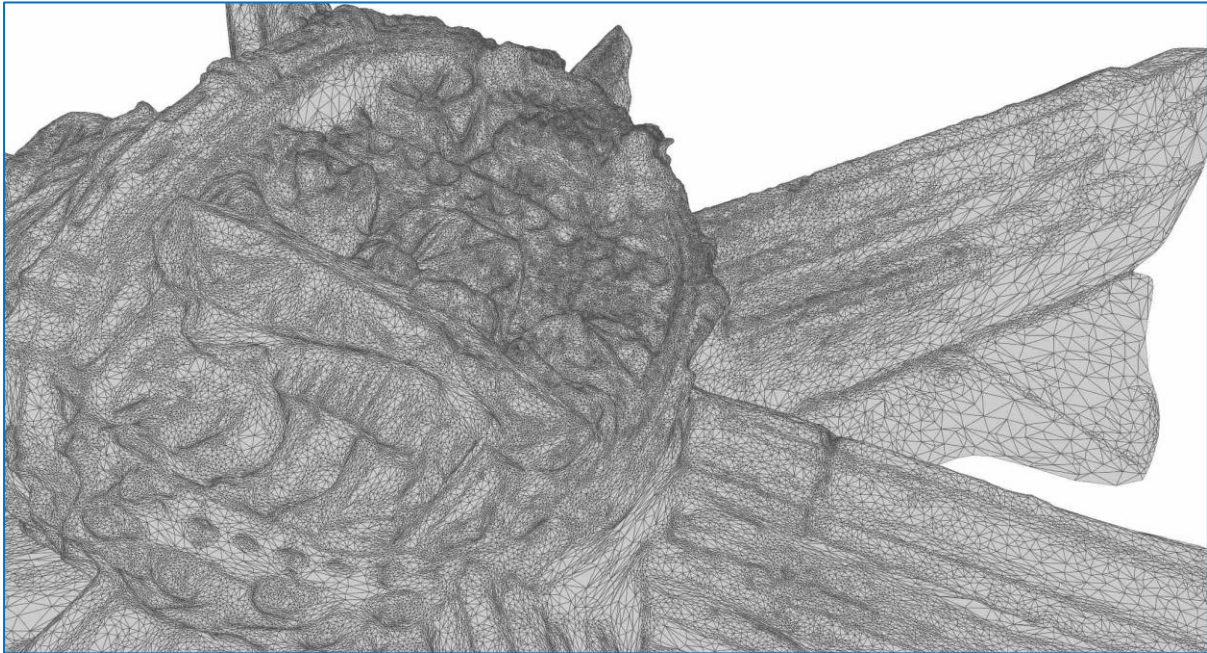


Figure 2 Render of photogrammetric wire-frame model, 2017. Photo: Robert Hawkins.

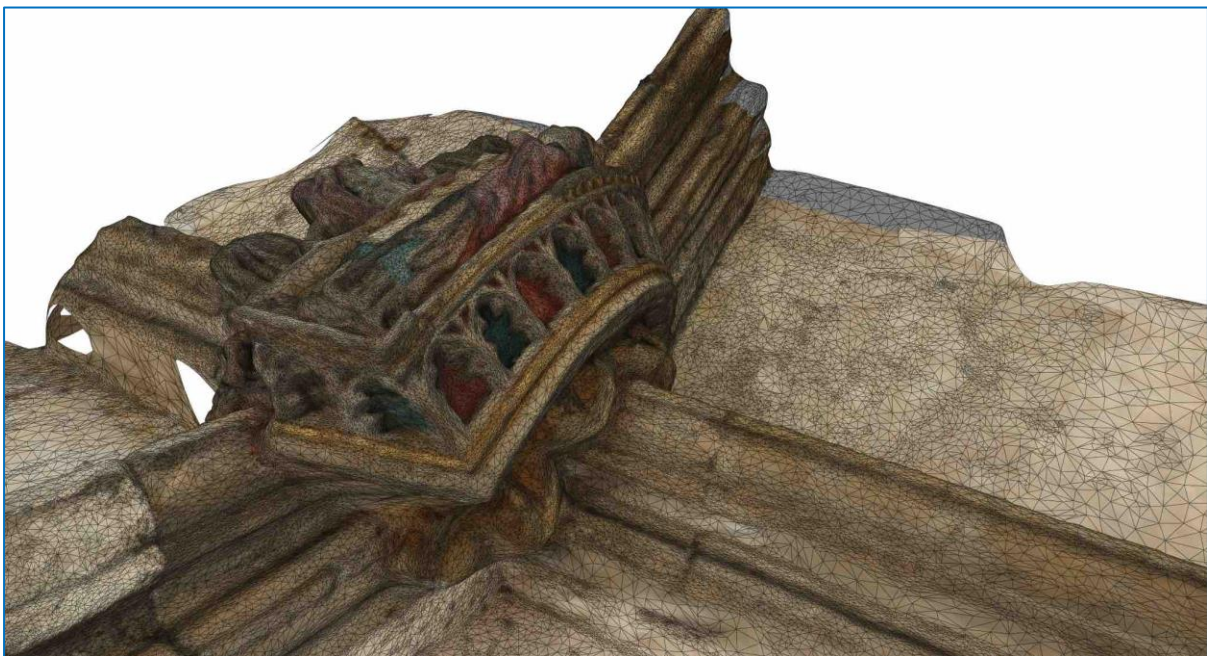


Figure 3 Render of photogrammetric model, 2017. Photo: Robert Hawkins.

stereographers: albums of the British Museum's collection were compiled by Roger Fenton. And, in the late 1800s, François Willème and Willy Selke discovered (as we are now rediscovering) the potential for a convincing 3D "surrogate" to emerge from the collation of a large number of static photographs. Photographing sculptures from many precise angles, and using these photographs as cutting templates, "photo sculptures" could be created: copies of complex forms, much like a modern 3D print.⁸ The greater the number of "planes" of an object captured, the more accurate the replication.

My work with the Norwich bosses now proceeds in a similar way to those initial experiments by Willème and Selke. I gather photographs of a boss on site from as many angles as possible (a minimum of *c.* 50 is usually sufficient). I then use modeling software which extrapolates the likely contours of the sculpture from the photographs, building a wire-frame model and then mapping the photographs back onto this shell to create a "surrogate" boss which can be manipulated and considered from different angles (**figs. 2, 3**). This is proving particularly useful as I begin to try to find other sculptures across Norfolk produced by the same workshop. Huge variations in lighting, weathering, levels of repaint, etc. make it very difficult to compare sculptural forms across geographically distant sites. Photogrammetric modeling offers a way to do this: I can set sculptures alongside one another which in reality are many miles apart, whilst retaining the ability to change my viewing angle *ad infinitum*, even choosing to remove potentially misleading polychromy (**fig. 4**).

This is not the first time that technological advancements have facilitated a change in the way we study these difficult, out-of-the-way sculptural objects. C.J.P. Cave, whose 1948 study of English bosses remains the most comprehensive to date, was conscious of

⁸ See Geraldine A. Johnson, "Photographing Sculpture, Sculpting Photography," in *Photography and Sculpture - The Art Object in Reproduction*, eds. Sarah Hamill and Megan R. Luke (Los Angeles: Yale University Press, 2017), and, more specifically, Robert A. Sobieszek, "Sculpture as the Sum of Its Profiles: François Willème and Photosculpture in France, 1859–1868," *The Art Bulletin* 62 (1980): pp. 617–30.

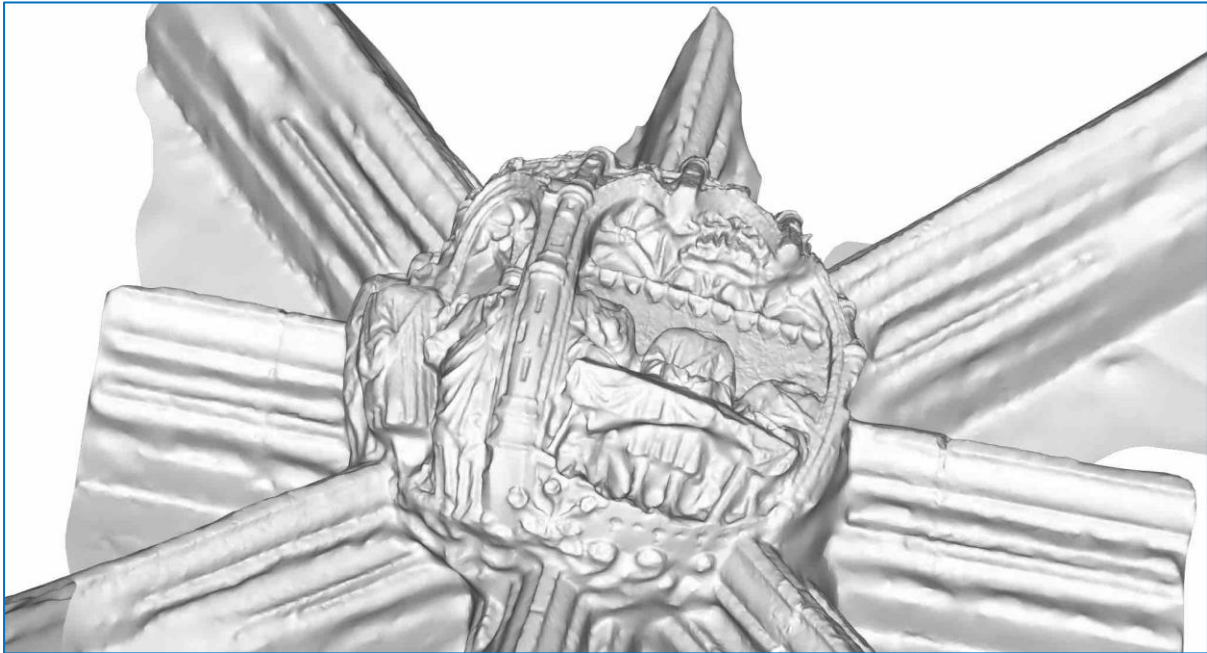


Figure 4 Render of photogrammetric model, 2017. Photo: Robert Hawkins.

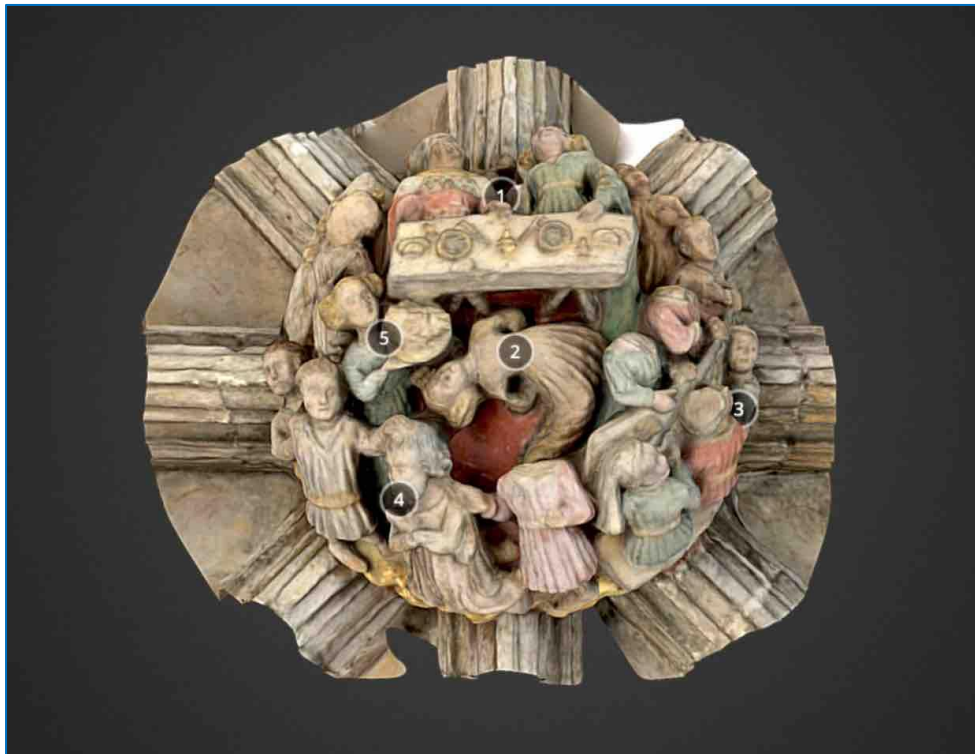


Figure 5 Boss depicting *Herod's Feast*, c.1425. Cathedral Cloister, Norwich.
Sketchfab model: Robert Hawkins, <https://skfb.ly/67ZNT>.

the enabling role that technological developments had played in the compilation of his catalogue.⁹ Where his predecessors had struggled to capture satisfactory images of the dark and distant sculptures, Cave had at his disposal a telephoto lens and a powerful spotlight, permitting the collation of a comprehensive survey. But whereas Cave could hope only to make a legible plate of each sculpture, forming the basis of a discussion of iconography and composition, the photogrammetric model now permits the study of three-dimensional effects. Digital models of the bosses allow me to communicate the complexity of their spatial devices to a reader, and to pass on the experience of roving around them, slowly appreciating their complex forms (fig. 5). 🐼

Bibliography

Cave, Charles John Philip. *Roof Bosses in Medieval Churches: An Aspect of Gothic Sculpture*. Cambridge: Cambridge University Press, 1948.

Hildebrand, Adolf von, and Max Friedrich Meyer. *The Problem of Form in Painting and Sculpture*. New York: G. E. Stechert & Co., 1907.

Jeffs, Amy, Amy Jeffs, Fern Insh, Erich Hatala Matthes, Tom Flynn, Daniel Pett, Tim Ayers, *et al.* "Disciplining the Digital: Virtual 3D Reproduction, Pilgrim Badges, and the Stuff of Art History." *British Art Studies*, Issue 6 (2017), <https://doi.org/10.17658/issn.2058-5462/issue-06/conversation> (accessed June 29, 2017).

Johnson, Geraldine A. "Photographing Sculpture, Sculpting Photography." In *Photography and Sculpture - The Art Object in Reproduction*, edited by Sarah Hamill and Megan R. Luke. Los Angeles: Yale University Press, 2017.

— — —. "'(Un)richtige Aufnahme': Renaissance Sculpture and the Visual Historiography of Art History." *Art History* 36 (2013): pp. 12–51.

⁹ Charles John Philip Cave, *Roof Bosses in Medieval Churches: An Aspect of Gothic Sculpture* (Cambridge: Cambridge University Press, 1948).

- Jung, Jacqueline. "The Kinetics of Gothic Sculpture: Movement and Apprehension in the South Transept of Strasbourg Cathedral and the Chartreuse de Champmol in Dijon." In *Mobile Eyes: Peripatetisches Sehen in Den Bildkulturen Der Vormoderne*, edited by David Ganz and Stefan Neuner, pp. 133–73. Eikones. Munich: Wilhelm Fink, 2013.
- Lubbock, Jules. *Storytelling in Christian Art from Giotto to Donatello*. New Haven, CT: Yale University Press, 2006.
- Schröter, Jens. *3D: History, Theory and Aesthetics of the Transplane Image*. Revised edition. New York: Bloomsbury Academic, 2014.
- Sekules, Veronica. "Religious Politics and the Cloister Bosses of Norwich Cathedral." *Journal of the British Archaeological Association* 159, no. 1 (2006): pp. 284–306.
- Sobieszek, Robert A. "Sculpture as the Sum of Its Profiles: François Willème and Photosculpture in France, 1859–1868." *The Art Bulletin* 62 (1980): pp. 617–30.
- Wölfflin, Heinrich. "How One Should Photograph Sculpture." Translated by Geraldine A. Johnson. *Art History* 36 (2013): pp. 52–71.