

# Art History



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**Front Cover**  
Detail of the head of the Prima Porta statue of Augustus, precise date disputed (but perhaps c. 15 CE, after an earlier model of c. 19 BCE). Parian marble, height 2.04 m. Rome: Musei Vaticani (inv. 2290). Photo: Reproduced by kind permission of Susanne Muth.



et per quem salvati  
sumus. **ps** Deus mis  
eri et benedicat nobis.  
et vultum suum super





# Multiple Impressions: Christ in the Winepress and the Semiotics of the Printed Image

Elina Gertsman

Wounded, tormented, broken, Christ bends under the pressure of a formidable winepress in the late fifteenth-century German print now in the collection of the Städel Museum in Frankfurt (plate 1).<sup>1</sup> Included as one of two images in *The Life of the Virgin Lydwine* – a treatise published in Gouda by the members of the Brotherhood of Common Life – the woodcut and its versions circulated throughout the Netherlands.<sup>2</sup> The small print is striking.<sup>3</sup> Expressed by the astounding apparatus that bears down on his fragile frame, Christ's blood flows generously into a trough and collects in a chalice. His eyes are closed; his fingers pull at the skin around the wound in his side, enlarging it and assisting the flow of blood that falls down in heavy large globules. His other wounds do not bleed, although if the print had been coloured by hand, then drops of blood would likely have been added to his hands and feet to represent four more sanguine streams, as can be seen, for example, in a roughly contemporary woodcut (plate 2). But Christ here, although ostensibly the central figure, is hardly the main protagonist: it is the press, with its unequivocal power to crush and to stamp itself on vulnerable flesh that dominates the print. The blank expanse of its upper beam, which flattens Christ's back, stands out against the elaborate background: the windows, the walls, and especially the highly ornamented floor that all but engulfs the small chalice. The press frames and effaces the body it is destroying. The prominence achieved by this remarkable device highlights the centrality of the self-referential theme of imprinting inherent in this and other woodcuts that figure Christ in the Winepress. This essay explores this theme in terms of the printmaker's tools and sensorimotor processes, while discussing mimetic possibilities offered by the practices of image-, meaning-, and memory-making specific to the medium of print. In order to do so, I attend to the different 'turns' in art history – the pictorial, the material, and the cognitive – marshalling a variety of methodologies, from response theory to recent explorations in affective neuroscience.<sup>4</sup> I am particularly interested in two things: the semiotic structures of the Christ in the Winepress woodcuts that comment on the complex elision of the medium, the technique, and the iconography; and in the somatosensory implications of such an elision.

*Christ in the Winepress, from the Hours of Catherine of Cleves, c. 1440 (detail of plate 5).*

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## Pressing the Body: From Grape to Blood

Several biblical passages serve as reference points for the visual tradition of Christ in the Winepress. The image of crushed flesh stems from Isaiah's description of 'a man of sorrows' interpreted as a prophecy of Christ's Passion: 'But he was wounded for our iniquities, he was bruised for our sins: the chastisement of our peace was upon



*I Christ in the Winepress, c. 1490–1500, the Netherlands. Woodcut, 105 × 81 mm (image), 113 × 86 cm (sheet). Frankfurt am Main: Städtisches Kunstinstitut und Städtische Galerie. Photo: © Städel Museum, Frankfurt am Main.*



him, and by his bruises we are healed. . . . And the Lord was pleased to bruise him in infirmity: if he shall lay down his life for sin, he shall see a long-lived seed, and the will of the Lord shall be prosperous in his hand.<sup>75</sup> The Christ-as-a-grape topos, in turn, was chosen by Christian theologians from the book of Numbers 13:18–25, which describes the cluster of grapes brought by the children of Israel out of Canaan, the Promised Land. As a result, this image frequently appeared in sacramental contexts, as, for example, on the twelfth-century Mosan reliquary cross, which juxtaposes the grapes carried by Caleph and Joshua with the brazen serpent, Jacob's blessing, the Passover





2 Christ in the Winepress,  
c. 1460–70, Nördlingen or  
Nuremberg. Red lacquer  
and xylography, 134 × 71  
mm. Paris: Musée du Louvre  
(Rothschild Collection, 28  
LR). Photo: Réunion des  
Musées Nationaux/Art  
Resource, NY/Michèle Bellot.



3 Detail from lower panel of a Mosan reliquary cross showing Joshua and Caleb Carrying the Grapes from the Eshkol Brook, 1160–70, France or Belgium. Enamel, 372 × 256 mm. London: British Museum. Photo: © Trustees of the British Museum.

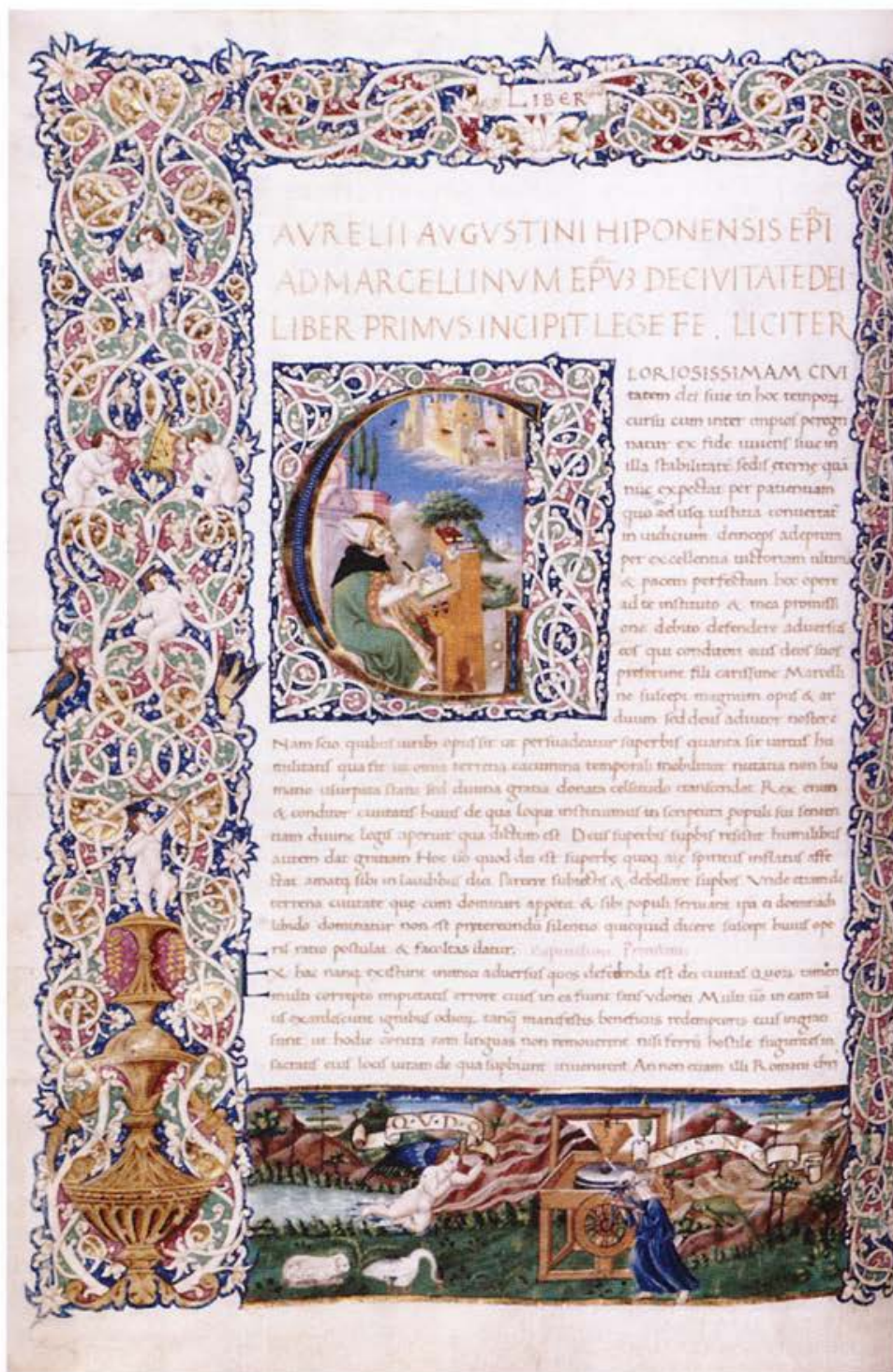


lamb, and Elijah's meeting with the Widow at Zarephath: all Old Testament episodes believed to have prefigured Christ's crucifixion (plate 3).<sup>6</sup> The pressing of grapes is subsequently mentioned in Isaiah 63:3: 'I have trodden the winepress alone ... I have trampled on them in my indignation, and have trodden them down in my wrath, and their blood is sprinkled upon my garment.' Here, the prophet's menacing discourse is again interpreted as prefigurative of Christ's Passion; typologically speaking, Isaiah's words are visually and exegetically recast as a prophecy of the New Law. In Christian elucidation, the Old Testament God becomes Christ; his vengeance, pity; and the blood of the smitten, the blood of Christ himself. The theme of retribution resurfaces in the Book of Revelation 19:15–16: 'And out of his mouth proceedeth a sharp two edged sword; that with it he may strike the nations. And he shall rule them with a rod of iron; and he treadeth the winepress of the fierceness of the wrath of God the Almighty. And he hath on his garment, and on his thigh written: KING OF KINGS, AND LORD OF LORDS.'

The Christological theme of the wine-treader has, therefore, a complex scriptural heritage, but its visual journey does not begin until the twelfth century, with the image of Christ standing in a vat with grapes or working the wine press. Thenceforth, Christ in the Winepress – a largely (although not exclusively) northern European phenomenon – began appearing in manuscript illuminations, sculpture, stained glass, tapestries, wall paintings, and prints. Its origins, however, are unclear; scholars have proposed that at its root stand such iconographies as the Fountain of Life, the



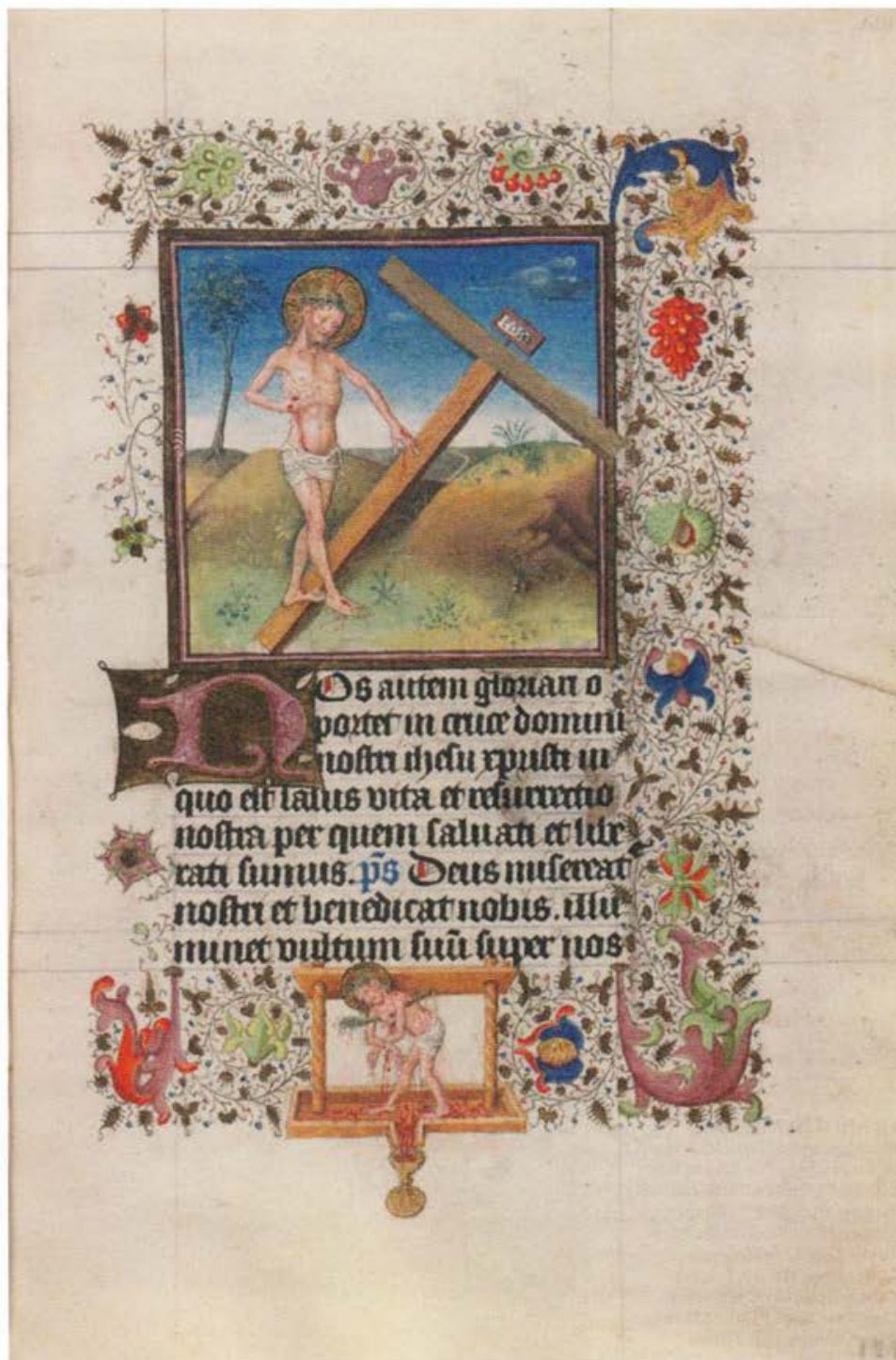
Tree Cross, and the Tree of Jesse.<sup>7</sup> Ontologically, the theme is related to imagery of the Mystic Mill, which has been interpreted to suggest Christ's sacrificial body – both the mill and the milled grain – as an intermediary between the Old and the New Testaments (for example, plate 4).<sup>8</sup> By the fifteenth century, the image had acquired decidedly sacramental characteristics as Christ's body replaced the grapes in the wine press, and became frequent in devotional contexts, perfectly suited as it was to emotive Eucharistic piety. Its focal point was always blood. For instance, in the *Hours of Catherine of Cleves* painted c. 1440, Christ is figured as his own doppelgänger:



4 Initial G (St Augustine Writing), and Mystic Mill, from St Augustine, *The City of God*, c. 1470, Florence. Illuminated manuscript, 390 x 280 mm (page). New York: New York Public Library (Spencer Collection, Ms. 30, fol. 1v). Photo: Spencer Collection, The New York Public Library, Astor, Lenox and Tilden Foundations.



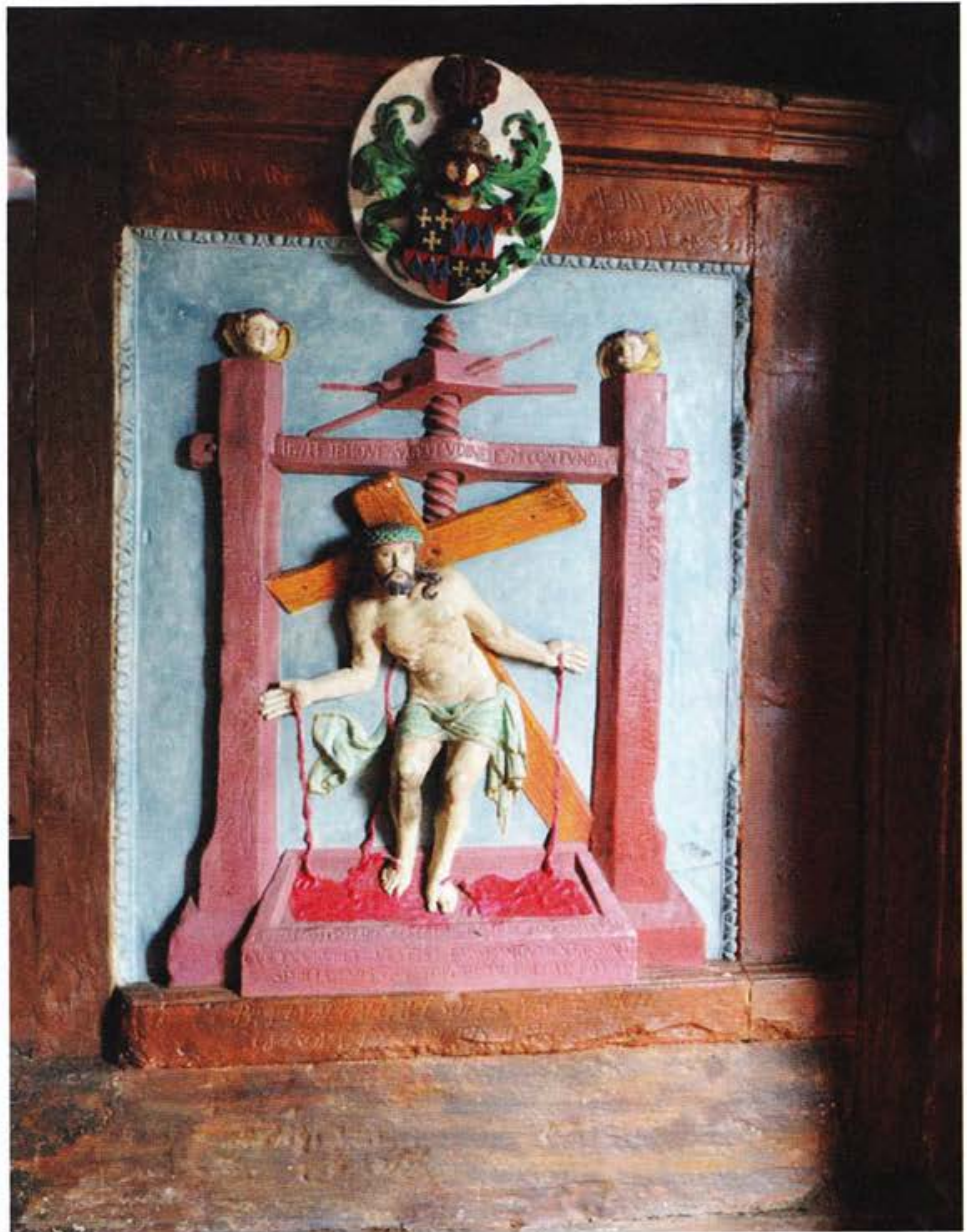
stepping atop a precariously balanced cross and displaying his wounds in the upper miniature, and, in the lower margin, bleeding even more profusely from numerous lacerations into the trough of the press (plate 5).<sup>9</sup> Blood, which finally gathers in the chalice, is underscored by the presence of the scourge and the reed held under Christ's limp arms. Similarly, at Ediger-Eller, in Moselle, where a vibrantly coloured Christ in the Winepress relief of about 1500 remains the focal point of the town's Kreuzkapelle, the sculpted and brilliantly saturated streams of viscous blood hang down from Christ's wounds and gather as a gelatinous liquid in a trough (plate 6).<sup>10</sup>



5 *The Man of Sorrows, and Christ in the Winepress*, from the Hours of Catherine of Cleves, c. 1440, Utrecht. Illuminated manuscript, 192 × 130 mm (page). New York: The Pierpont Morgan Library (Ms. M.917, fol. 129r). Photo: The Pierpont Morgan Library, New York.



6 *Christ in the Winepress*, c. 1500. Stone, 100 × 90 cm. Kreuzkapelle, Ediger-Eller, Moselle, Germany. Photo: Courtesy of Heinz Peierl.



A late fifteenth-century fresco at the Church of St Ursula in Cologne has Christ kneeling at the bottom of the press, a lamb resting on his shoulder, its legs grasped by Christ's wounded left hand. As the crossbeam bears down on the lamb, blood jets from the wound directly into the chalice held in Christ's right hand, its dazzling redness underscored by the crimson backdrop (plate 7). As Perrine Mane points out in her study of similar murals, 'blood pouring out of Christ's wounds becomes, in the fourteenth and the fifteenth centuries, one of the essential characteristics of the Christ in the Winepress image. Reflecting current mentalities, the iconography privileges suffering ... and exalts the virtue of blood.'<sup>11</sup>

But in the Frankfurt woodcut (see plate 1), blood – although still extraordinarily visible – yields centre stage to the press, suggesting that the translation of this iconography into print engenders an entirely different system of signification – one which intimates mimesis between the medium and the subject matter. Here, I will argue, the woodcut draws unmistakable parallels between the wine press and



7 Christ in the Winepress, fifteenth century. Mural, 110 × 104.5 cm. Church of St Ursula, Cologne, Germany. Photo: Courtesy of Aad Bastemeijer.



the printing press, between ink and blood, and between wood, paper, and flesh. Moreover, because Christ in the Winepress is essentially a sacramental image, it invites analogies between the multiplication of the Eucharistic and visible object species, and the reproductive quality of print – a particularly important point to consider for an age that both emphasized ocular communion and considered the material substance of the image as the potential stuff of and access to salvation. In turn, I will suggest, the autotelic facture of the print, which fosters a series of impressions – on paper, on flesh, on sight, and on memory – generates a self-referential system of making, seeing, and remembering.

#### **Making: Cutting and Pressing the Body**

In his recent essay, 'Sexing the canvas', Nicholas Chare suggests the importance of exploring the medium as a potent vehicle for the construction of meaning.<sup>12</sup> Self-reflexivity in a given medium is certainly not unique to the print; it is most commonly used by filmmakers whose comment on their own craft is frequently embedded into narrative or alluded to in shooting and editing.<sup>13</sup> The presence of the makers becomes tangible and mediatory: they stand between the viewer and the object, and between the object and its meaning, transforming the image into a sign of their presence and inflecting the way this image is read and perceived.

This mediatory signification is brought into focus when the very method of creating an object resonates uncannily with the iconographic content of the work – as



8 'How to Cohabit with a Woman', from Aldebrandino of Siena, *Le régime du corps*, c. 1285, Northern France (Lille?). Illuminated manuscript, 295 × 190 mm (page). London: British Library (Ms. Sloane 2435, fol. 9v). Photo: © The British Library Board.

9 Detail of lid of *The Royal Cup* showing the Martyrdom of St Agnes, c. 1370–80, Paris. Gold and enamel, 23.6 (height with cover) × 17.8 (diameter) cm. London: British Museum. Photo: © Trustees of the British Museum.



when, for instance, the viscous red paint used in a Crucifixion panel is made to trickle down the wooden cross, much in the manner of the glutinous blood it represents. Medieval image-making offered plentiful opportunities for such meta-commentary on the engagement with and the materiality of one's medium. A female body on a manuscript page, for example, was never purely virginal, created as it was with pen and parchment, commonly perceived in monastic circles as metaphors for the pressing phallus and the receptive flesh, respectively.<sup>14</sup> If, as Susan Schibanoff writes, 'in orthography, the pen (penis) inseminates the writing surface (*pagina* or *vagina*) with the seeds of meaning that bear the fruit of words on the page', then an image of copulation and the accompanying explanatory text on sexual intercourse – such as those in the thirteenth-century copy of Aldobrandino of Siena's *Régime du corps* – simply confirm the process of insemination already signified by the medium and the act of writing (plate 8).<sup>15</sup> But what happens when an act of creation is mimetically allied to an act of violence? When the enamelled image of St Agnes, who was martyred by fire, is placed in the flames that fuse powder to gold, and thereby torture, liquefy, and subsequently eternalize her body, as can be seen on the fourteenth-century royal cup probably commissioned by Jean de Berry for his brother Charles V (plate 9)?<sup>16</sup> Or

when a sculptor carves out two empty eye-sockets on the face of St Lucy, whose eyes were, in fact, gouged out? Or when an engraver incises a plate with an image of the suffering Christ, thereby inflicting tangible wounds on his represented body?

These questions become still more urgent if the raw material in question is wood: a porous, flexible, organic substance the equivalence of which to the body was clearly articulated in both scientific and devotional contexts in the late Middle Ages. Medieval bestiaries, for example, suggest that worms are born 'from any 'earthly thing' such as flesh and wood.'<sup>17</sup> In Greek, 'hylē' stands for both wood and matter, and so for Isidore of Seville, who was conversant both in Latin and Greek, wood was a generative body – 'All wood is called matter because from it something is made' – while matter itself takes its name from 'mother' ('*materia quasi mater dicit*').<sup>18</sup> The mimetic analogy between the wood of the cross and the body of Christ was a particularly common trope. Thomas Aquinas, for example, argued that because the wood of the cross 'represents to us the figure of Christ extended thereon', and because it came into contact with Christ's body and was 'saturated with His blood ... in each way it is worshipped with the same adoration as Christ ... And for this reason also we speak to the cross and pray to it, as to the Crucified himself.'<sup>19</sup> The wood of the True Cross was a precious *brandea*, a contact relic that attested to and extended Christ's presence on earth.<sup>20</sup>

The wood's perceived capability to closely mimic and transform into flesh is most clearly indicated by the growing popularity of, and the attendant malaise connected to, sculpture carved in the round. The late





10 Christ as the Charter, from the Carthusian miscellany, c. 1460–70, England. Illuminated manuscript, 273 × 203 mm (sheet). London: British Library (Ms. Additional 37049, fol. 23r). Photo: © The British Library Board.

Middle Ages experienced a pan-European phenomenon in which images of Christ were perceived to have come to life: they bled, cried, sweated, moved their heads and lifted their arms, and sometimes, when touched, transformed into actual tissue.<sup>21</sup> Such persistent conflation between animate matter and inert material has been frequently attributed to the emergent naturalism and three-dimensionality of Romanesque and Gothic sculpture, and scholars have offered excellent discussions of the anthropology of such 'living' images, especially within the context of late medieval female convents.<sup>22</sup> Yet, what is equally important and relevant for this discussion is that the miraculous images that were said to metamorphose into flesh were by and large made of wood, and here I want to echo Herbert Kessler's assertion that the 'materials of medieval art had their own histories that, together with their inherent qualities, imparted meanings to the objects and images constructed of them'.<sup>23</sup> It is certain that both wood's facture and its spiritual history inflected and reinforced its potential to act as flesh, and therefore the potential for those who incised the outlines of Christ's suffering body into a woodblock to cut the wounds directly into this surrogate matter. Because a woodcut is made using a relief technique, it is dependent upon cutting away

negative surfaces meant to appear white on the final image, such as the exaggerated wounds, for example, carved out of the block used to make the Frankfurt print. Round and hollow, their negative space has been created by gouging the wood, scooping out its fibres – a violent act of their maker that echoes the violent acts of Christ's tormentors who similarly incised his body with scourges and nails.

The outlines of these wounds, along with other relief surfaces, would then have been coated with ink, suggesting another pointed association between Christ's original and indexical bodies. The fourteenth-century English poet William Herebert describes the wound in Christ's side as an inkhorn, while his contemporary, the passionate mystic Richard Rolle, writes that Christ's 'body is like a book entirely inscribed with red ink; compared to [his] body because that is entirely inscribed with red wounds'.<sup>24</sup> The blood-as-ink metaphor was common currency in late-medieval visual and literary traditions. It was, for instance, frequently used in texts, popular in England, that conceptualized Christ's body as a charter between God and humanity.<sup>25</sup> The early fourteenth-century handbook for preachers, *Fasciculus morum*, visualizes this unusual document thus: 'In this way Christ, when his hands and feet were nailed to the cross, offered his body like a charter to be written on. The nails in his hands were used as a quill, and his precious blood as ink.'<sup>26</sup> Such a document written in blood appears on the pages of the English Carthusian miscellany of c. 1460–70, in which Christ's wound is flipped on its side, and transformed into the charter's seal, inscribed with the blood-drenched sacred heart and the IHS monogram (plate 10).<sup>27</sup> And although here, as in other examples cited above, it refers to that applied with a pen, ink also certainly carried a loaded cultural and theological charge for early woodcuts, works which used the same water-based pigments and types of ink as those found in late-medieval illuminated manuscripts.<sup>28</sup>



A South German Christ in the Winepress print of 1460–70 attributed to Caspar effectively alludes to the transformative ink-to-blood-to-ink process (plate 11). At the bottom of the image, on the viewer's right, a man with wings – the symbol of St Matthew – writes the Gospel, while dipping his pen into a chalice, filled with Christ's copious blood. The inks used to print and paint the woodcut here stand for Christ's blood that then becomes the ink of Christian sacred text, encoded both by Matthew's angel and by the words of the *Breviarum Romanum* (Basel, 1493) into which the woodcut



11 Caspar (?), *Christ in the Winepress*, 1460–70, Southern Germany. Woodcut, 238 × 375 mm (image), 388 × 257 mm (sheet). Munich: Bayerische Staatsbibliothek (Rar. 327). Photo: Bayerische Staatsbibliothek, Munich.



is pasted.<sup>29</sup> For Christ in the Winepress in particular – a sacramental image that visualizes the transformation of Christ's blood into Eucharistic wine, subsequently transubstantiated into blood during the Mass – the parallel between blood and ink is especially compelling for wine was frequently used to make ink, as set out, for example, in a 1431 book of recipes by Jehan le Begue.<sup>30</sup> Blood and ink, then, share several material properties with and through wine: not only because they both flow, stain, and clot, but also because wine, as it were, was used as an ingredient for ink and for the contents of the Eucharistic chalice – an ingredient, as Rebecca Zorach points out, that 'was technologically associated with books and printing: the screw of the wine press had been appropriated to make printing presses'.<sup>31</sup>

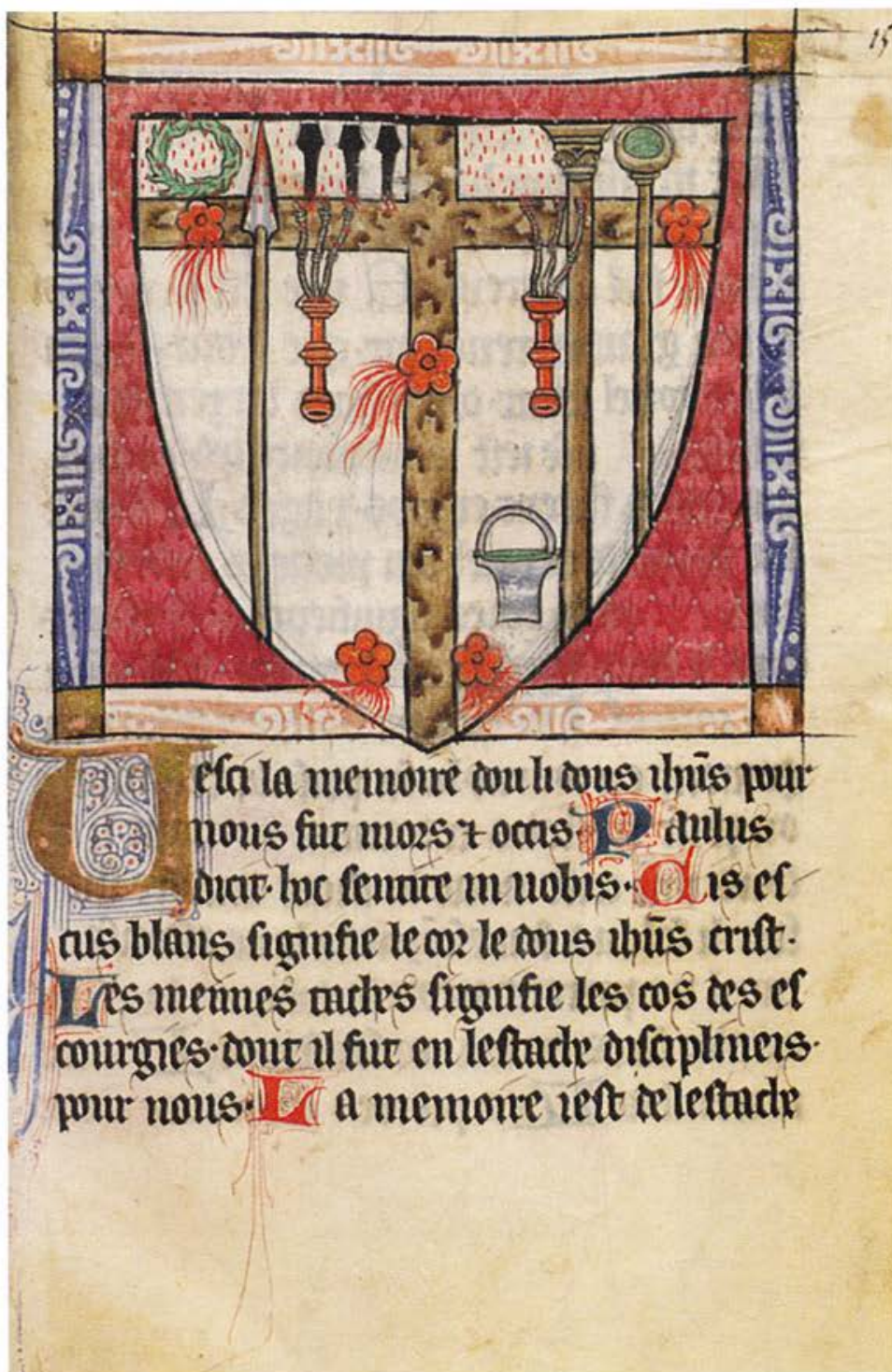
It is the operation of the press that marks yet another step in making the woodcut particularly evocative of its subject matter. When the blood of ink was rolled onto the flesh of the wood, the cross beam of the printing press would bear down on the sheet of paper, pressing the woodblock and the paper in much the same manner as the beam of the wine press bears down on Christ's body in the print itself (see plate 1).<sup>32</sup> Printing presses were adapted from screw-presses used, not surprisingly, to crush grapes and make wine: an allusion made clear in the Frankfurt woodcut where Christ's blood, which flows out of the side wound, is reminiscent of nothing so much as bunches of grapes.<sup>33</sup> Certainly, visual resonances between the wine press in the Frankfurt woodcut and one of the earliest images of a printing press from a 1499 Lyons incunabulum make clear their shared genealogies and *modi operandi* (plate 12). The Lyons woodcut forms part of the Dance of Death cycle, a late medieval visual theme that celebrated the equalizing force of death. But if its effect rests on the juxtaposition between the macabre narrative of embodied death carrying away the printers and a book seller, and the perfectly ordinary location of the shop with its perfectly ordinary press, in the Frankfurt allegory the press transforms into a conglomerate of Passion instruments: the screw post of the press explicitly recalls the column of Flagellation; its sharp end conjures an image of a nail; and the cross beam of the



12 'Death Comes for the Printers', *Grande danse macabre des hommes et des femmes*, Lyon: Matthias Huss, 1499. Woodcut, 178 × 135 mm. London: British Library (IB.41735). Photo: © The British Library Board.



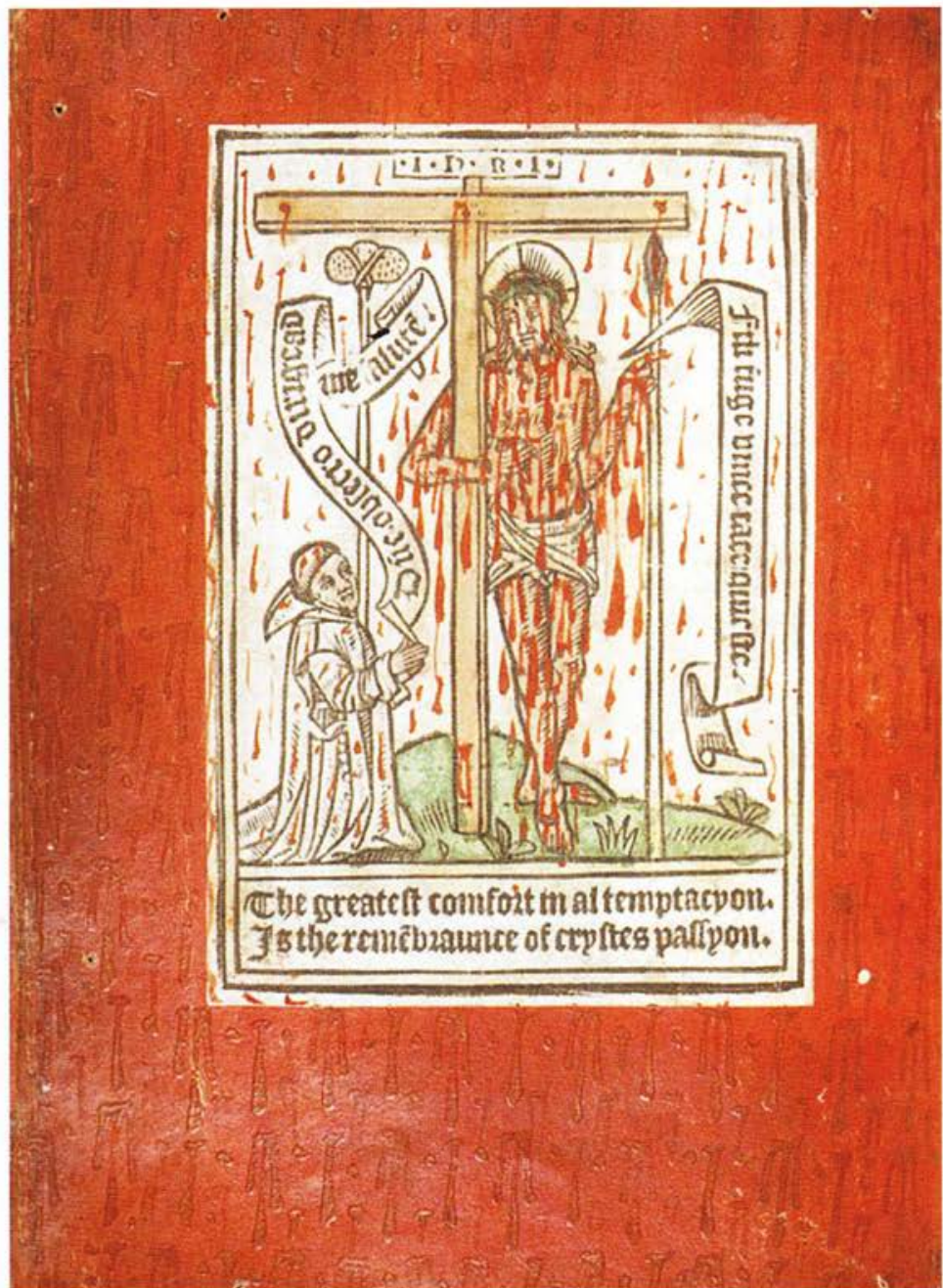
13 Heraldic *arma Christi*, from a book of hours, early fourteenth century, Eastern France. Illuminated manuscript, 144 × 103 mm. Paris: Bibliothèque de l'Arsenal (Ms. 288, fol. 15r). Photo: Bibliothèque nationale de France.



press, which evokes the shaft of the cross Christ carried to Golgotha, rests on a ladder that suggests the one used during the Deposition. This press is a sophisticated vehicle for torture, designed as a mnemonic tool to stir several moments of the Passion in the viewer's mind. Its prominence in the Frankfurt woodcut, then, is far from accidental: the correspondence between the printer's tools and movements, and the implied movement of the wine press is made explicit, and the press, in all its immediate materiality, activates not only the woodblock and ink, but also the paper on which the image is printed as an indexical sign of Christ's body.



14 A Carthusian Kneels before the Man of Sorrows, from a devotional book, c. 1490, England. Illuminated Manuscript, 120 x 90 mm. London: British Library (Ms. Egerton 1821, fol. 9v). Photo: © The British Library Board.



The whiteness of the paper, *semper accipienda*, to borrow again from Isidore – ‘always accepting’ – signified the holy body in the same way that vellum did before the advent of paper. The body-as-vellum trope almost always accompanies the blood-as-ink one, as, for example, in the *Fasciculus morum*.<sup>34</sup> It was often the material substance of vellum that lent itself to the comparison, but just as often it was the colour of the parchment, the whiteness that functioned similarly in images on paper. For example, in an early fourteenth-century devotional manuscript now in Paris, the *arma Christi* are arranged in a heraldic fashion, against a white shield; the accompanying text explicates each element of this unusual coat of arms, identifying the white ground – not the vellum itself but specifically its whiteness – as the body of Christ (plate 13).<sup>35</sup> A rather more visually violent example of an elision of page and flesh is found in the late fifteenth-century BL Egerton 1821, which includes eight folios completely covered by



red paint to simulate wounds and blood. On fol. 9v, the pasted woodcut represents a Carthusian monk kneeling before the Man of Sorrows, whose body is covered by streaming blood that visually echoes the pages: in this way, the equation between the bleeding page and Christ's body is made explicit (plate 14).

That paper, just as much as vellum, could carry somatic potential, is made evident by any number of prints depicting the Sacred Heart. In these prints, the image of the wounded heart is itself wounded by a sharp cut, probably made by the Holy Lance, one of Nuremberg's most famous relics.<sup>36</sup> One such print survives pasted into Hartmann Schedel's collection of prayers, accompanied by the inscription 'This heart is punctured / by the Lance of our Lord Jesus Christ' (plate 15).<sup>37</sup> The red pigment, which leaked through the sheet and stained its obverse, suggests that the paper acts as pierced flesh harbouring the wounded heart within. 'Made by printing, painting, and piercing, the resulting image is not so much a reproduction as a simulation', writes Areford, but 'a means of material transformation, turning the paper sheet into Christ's body'.<sup>38</sup>

The image-maker, then, deals in the stuff of indexical bodies to create a simulated experience of sacramental space. To make the Frankfurt print, the body/wood was cut, and the blood/ink was expressed on the flesh/paper by the weight

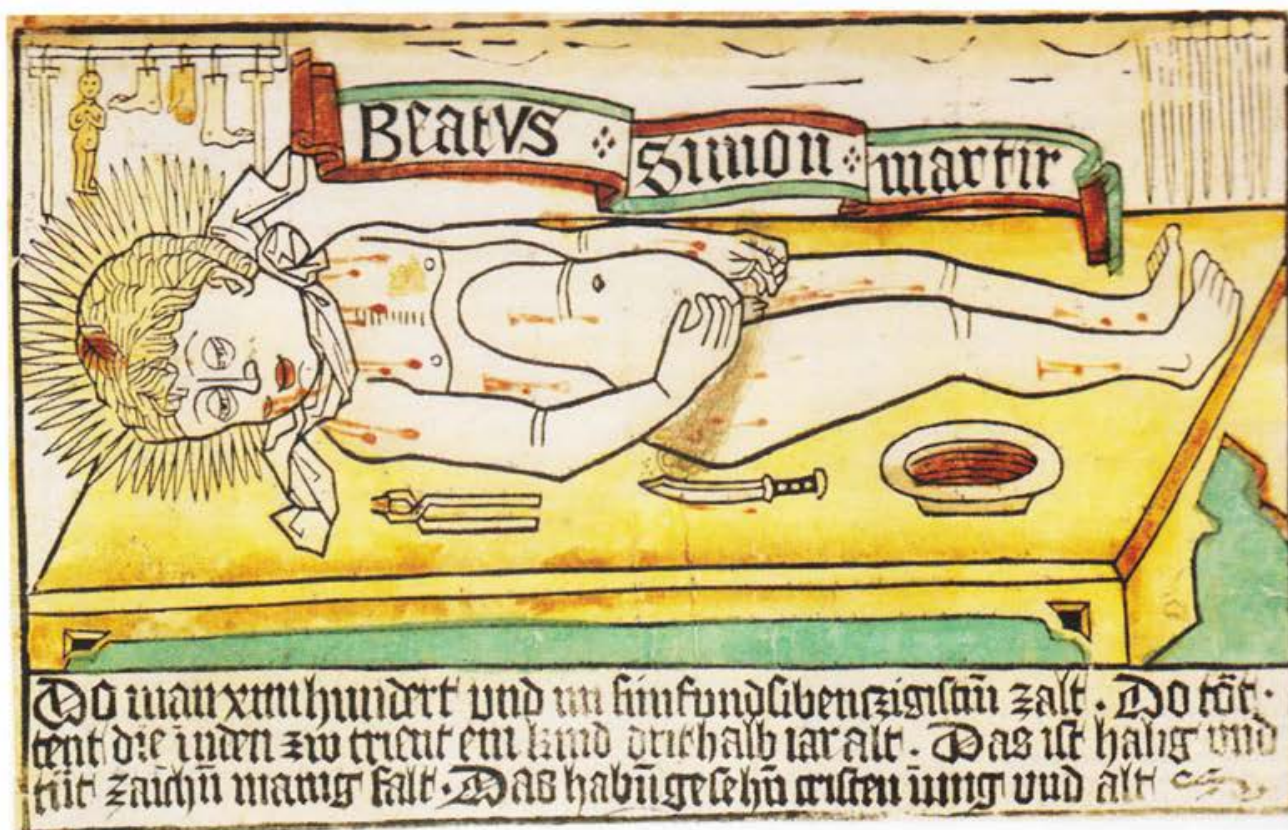


15 Sacred Heart Pierced by the Holy Lance, 1460, Germany. Woodcut, 95 x 73 mm. Munich: Bayerische Staatsbibliothek, (CIm 692, fol. 73v). Photo: Bayerische Staatsbibliothek, Munich.



of the press akin in its mechanism to the winepress. In other words, the visual and semantic structures of the image mirror the structures of its production. For Christ in the Winepress, an emphatically Eucharistic printed image, the meaning is particularly closely tied to the process of making, inasmuch as the production of woodcuts – multiple prints engendered by one woodblock – ontologically references both the production of Eucharistic bread (multiple hosts imprinted by one mould) and the multiplication of the Eucharistic species (multiple wafers transubstantiated into a single body).<sup>39</sup> Simultaneously, the theme of multiplying clearly resonates with the medieval optical theory of intromission – treated in more detail below – which specifies the multiplication of each object into visible species that coalesce into a single image and then imprint it upon the eye of the beholder.<sup>40</sup> Jeffrey Hamburger has termed the fifteenth-century fixation on reproducibility ‘the culture of the copy’, pointing to the Veronica – Christ’s image made not by human hands but miraculously transferred to a cloth – and its varying representations as a revealing example that has the capability to foreground ‘a sophisticated and unexpectedly self-conscious discourse on the nature and meaning of the copy as such’.<sup>41</sup> He further suggests that the resulting images were not so much reproductive as productive, and indeed they were: the printed image was understood to retain the sacred qualities of the original it reproduced. It was not a representation but a substitute, one in the long ‘chains of substitutions’, as Christopher Wood calls them, ‘taken for an authoritative index of something in the world’.<sup>42</sup> In this commutative model, Wood and Alexander Nagel propose, one image did not just stand for another, it constituted another: ‘the work did not merely repeat the prior work ... Rather, the work simply is its own predecessor’.<sup>43</sup> A print of the Veronica was in itself an original Veronica to be worshipped; a print that copied the Man of Sorrows icon in Santa Croce in Gerusalemme was just as

16 Blessed Simon Martyr,  
c. 1479, Germany  
(Nuremberg?). Woodcut,  
238 × 375 mm (image), 243  
× 380 mm (sheet). Munich:  
Staatliche Graphische  
Sammlung Photo: Staatliche  
Graphische Sammlung,  
Munich.





efficacious in granting indulgences as was its original model.<sup>44</sup> But the transference of authority, of being-ness, is not limited to an image as its source: the original can just as well be a body. A print of Simon of Trent, for example, was a surrogate, a stand-in for a murdered child, whose body was a miracle-working relic – and so the woodcut, too, was seen to possess some thaumaturgic powers (plate 16).<sup>45</sup> The chain of substitution squarely defines the Frankfurt woodcut as a tangible artefact of the sacramental metaphor: the body cut, pressed, imprinted, and multiplied.

### Seeing: Multiple Impressions and the Somatosensory Engagement

That printmakers were aware of the complex resonances between medium and meaning is evident in Albrecht Dürer's etching *Sudarium Held by an Angel*, another variation on the theme of the Veronica (plate 17). The very choice of subject matter points to printing's exalted, miraculous origins, of a kind that no other medium can compete with. The first prints – the Veronica and the mandylion (the cloth that converted and healed King Abgar of Edessa) – were contact relics. St Luke may have painted a portrait of the Virgin, but Christ-the-printmaker stamped his features on cloth and transformed it into an *acheropita*, an image not made by human hands.<sup>46</sup> In Dürer's etching, Christ's face on the thin cloth, all but obscured by fine hatched lines, flutters delicately in the sky. Joseph Koerner points out the unmistakable parallel to be drawn here between the angel lifting the sudarium from the firmament, and the printer peeling the image from an incised type and hanging it to dry, suggesting that Dürer 'fashions the Christian *non manufactum* to mythicize the process and the product of printing'.<sup>47</sup> This process, which started with the woodcutter's knife that pressed into the block, and the raised lines of the block that pressed into the paper, did not cease once the print was completed. On the contrary, it continued, transcending the body of the image-maker and continuing in the body of the viewer.

The initial organ to be imprinted was the eye. In the fifteenth century, the concept of seeing as it had been formulated some two hundred years prior by the Franciscan friar Roger Bacon held fast. Bacon essentially attempted to synthesize a great variety of vision theories in order to argue for the unity of human knowledge, but the key component of his synthesis remained Alhazen's theory of intromission.<sup>48</sup> Alhazen (died c. 1039), a prolific Arabic philosopher who wrote on everything from meteorology to metaphysics, contributed greatly to the medieval understanding of optics. In refuting the extramission theory, which proposed the emission of visual rays that reached out and returned visual objects to the eye in order to see, Alhazen embraced the theory that, instead, allowed for 'the forms of light and colour in the visible object [to] reach the eye' and be admitted into the glacial humour that then takes on the object's qualities.<sup>49</sup> The visual species received by the eye are not in any way somatic; Bacon clarifies that 'a species is not a body, nor is it moved as a whole from one place to another ... that which is produced in the first part of the air is not separated from that part ... rather, it produces a likeness to itself in the second part of the air, and so on'.<sup>50</sup> But the glacial humour is nonetheless altered after '[experiencing] a feeling from the impressions [species] that is a kind of pain': after a proliferation of these likenesses – the species multiplied – finally impresses itself on the eye, the eye becomes, in the words of Suzannah Biernoff, 'an organ of pictorial reproduction'.<sup>51</sup>

For Alhazen, the process of imprinting does not stop there; 'he admits that the final perception and interpretation of visual impressions are', as David Lindberg summarizes his theories, 'achieved in the brain, as the result of the propagation of a form or an impression from the eye to the brain'.<sup>52</sup> After coming into contact



17 Albrecht Dürer, *Sudarium Held by One Angel*, 1516. Etching, 182 × 130 mm. Cambridge, MA: Harvard Art Museums/Fogg Museum (anonymous loan in honour of Jacob Rosenberg, 4.1986). Photo: Katya Kallsen, © President and Fellows of Harvard College.



with the exterior of the eye, the visual forms continue on: 'the forms arrive at the vitreous humour arranged as on the surface of the visible object, and this body receives them and perceives them ... This sensation and these forms pass through this body' – that is, through the optic and common nerves – 'until they reach *ultimum sentiens*'.<sup>53</sup> Western medieval thought inherited a similar understanding of eye–brain transmission and imprinting. A fourteenth-century diagram of the brain now in Cambridge explicitly connects the eyes to the compartment labelled '*ymaginatio vel formalis*', which is needed, as the accompanying text explains, 'to receive the impressions and inscriptions' conveyed by external objects.<sup>54</sup> Similar diagrams, both drawn by hand and printed, appear in numerous collections in the later Middle Ages, and especially in the late fifteenth and early sixteenth centuries (plate 18). The power to retain impressions was attributed to the respective moistness or dryness



of various brain cells; this is an idea that dates back to Aristotle who suggested that 'moist' people, such as phlegmatics, do not remember well (their recollection skills are fluid, and out of control), but 'dry' people do.<sup>55</sup> Melancholy, conversely, was associated with the earth, 'a dense medium, in which the impressions of the species are held for the memory', as Ramon Llull puts it, 'and therefore melancholy men are disposed to acquiring great learning through the multiplication of many species'.<sup>56</sup> So, in a manuscript copy of Albertus Magnus's *Parvulus philosophiae naturalis*, roughly contemporary with the Frankfurt woodcut (c. 1473), the first and the fourth cells are indicated as being moist and so the content slips from them, but the second, third, and fifth are dry, and they preserve their contents well.<sup>57</sup> The fifth cell, used for storage, is the compartment responsible for memory.

It should come as no surprise then that memory, too, was discussed throughout the Middle Ages in terms of imprinting. As the Cambridge diagram amply demonstrates, impressions of memory were directly connected to visual impressions. In his *De memoria artificiali*, Thomas Bradwardine writes: 'Memory is most powerfully affected by sensory impression, most strongly by vision; wherefore something occurs in memory as it customarily occurs in seeing.'<sup>58</sup> The model of memory as wax – a *tabula memoriae* that receives impressions – has endured in western thought since antiquity, remaining a persistent paradigm. Here metaphor and physiology elide: mental images, as Mary Carruthers writes, 'were thought in some way to occupy physical space. They are "incised" or "stamped" into matter.'<sup>59</sup> Cicero likens the script that 'consists of marks indicating letters and of the material on which those marks are imprinted' to 'the structure of memory',

which is like 'a wax tablet'. This model is taken up again by the scholastics, Thomas Aquinas most notably, in his commentaries on Aristotle's *De anima* when he discusses 'a cognitional and spiritual mode [of being]' and engages with Aristotle's metaphor of 'the imprint of a seal on wax'.<sup>60</sup> Mnemonic stamping is similarly a common trope in St Bonaventure's writings – whether he writes about St Francis's memory imprinted with 'whatsoever had once been presented unto his mind' or about a mystic's memory impressed with God's image, which one contemplates as the third step on the ascent to union with God.<sup>61</sup> The concept of stamping was not limited to scholastic treatises and mystical writings – it is not likely that either genre was accessible to the lay consumer of Christ in the Winepress prints – rather, it was part and parcel of late-medieval preaching, frequently found in those sermons that concerned Christ's suffering. In referring to homilies on the Passion, for example, an anonymous preacher explains their goal in imprinting the memories of Christ's torments and death on the hearts of the devout.<sup>62</sup>

One must note that the terms 'memory' and 'heart' were used interchangeably in much of medieval literature; Jerome specifically suggests that 'cor' in some biblical passages refers to memory.<sup>63</sup> Augustine's notion that the stamping of Christ's

18 'Senses and their Corresponding Parts of the Brain', from Gregor Reisch, *Margarita Philosophica*, Freiburg: Johann Schott, 1503. Woodcut, 220 × 165 mm. London: Wellcome Library. Photo: Wellcome Library, London.

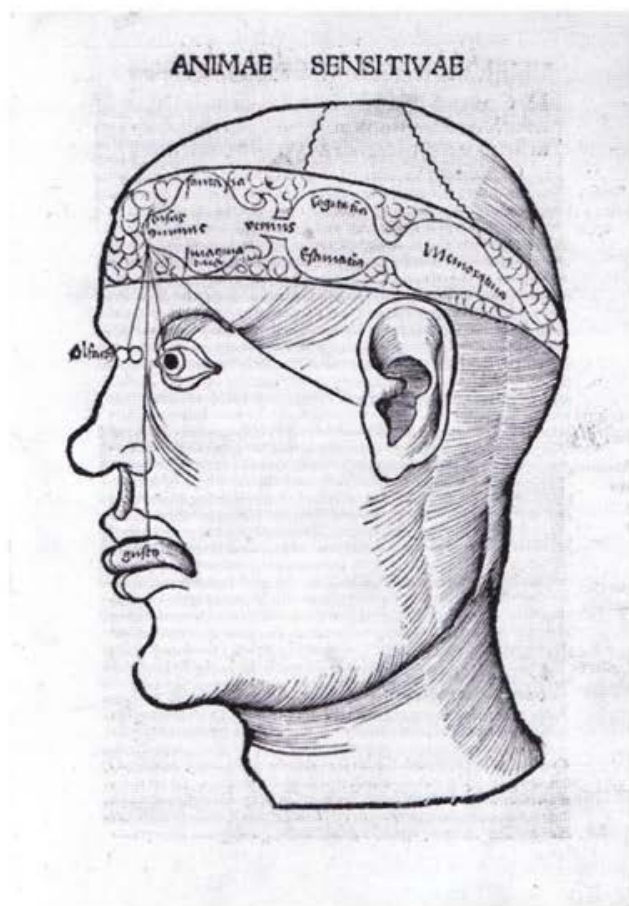




image on one's memory means stamping it on one's heart receives extraordinary interpretation in the works of female mystics such as Gertrude of Helfta, who wished for the 'memory of Christ's wounds to ever remain in the hidden places of [her] heart', or Mechthild of Hackeborn, who softens in God's love and becomes imprinted by Christ 'like a seal in wax'.<sup>64</sup> The imprint of things we see is formative and reforming, physiologically and spiritually, an idea already present in Bacon's *De multiplicatione specierum* and, in a different context, in Jan van Ruusbroec's declaration in his celebrated treatise *Die geestelike brulocht* that 'if a person is to see corporeally [he must have] a ready willingness to let the things he is to see re-form his eyes'.<sup>65</sup> Ruusbroec (died 1381) exercised tremendous influence on Geert de Grote, a founder of the Brotherhood of Common Life, with which the Frankfurt print is primarily associated. Grote, who edited Ruusbroec's treatise and provided its translation into Latin, similarly suggests, in his sermon 'On Four Classes of Subjects Suitable for Meditation', that all things material – that is to say, available to our senses – engender all things spiritual. 'Sensible representations are necessary for us', Grote writes. He continues:

[The] conformity between the sensible and mental powers renders and holds men fixed under the cross of Christ so that they can glory in nothing else. They seek with their every desire to conform themselves within and without to that cross so that, as the Apostle says they may always bear in their body the death of Christ, and so that also the life of Jesus may be manifested in their body and mortal flesh.<sup>66</sup>

The implication of what both Ruusbroec and Grote suggest is considerable. In the words of Bret Rothstein, 'To see enables us to know, and knowledge leads one towards redemption.'<sup>67</sup> The chain of imprints and incisions that begins with the woodcutter's knife, and continues with impressions on paper, the eye, the brain, the memory, and the heart, culminates in the imprinting and transformation of one's entire soul.

What is expected from the viewer, then, is nothing less than embodied participation. The required kind of seeing is somatic, structured as a fulcrum between what one beholds and how one processes it. The contemporary field of analytical somaesthetics, described by Robert Shusterman as a 'descriptive and theoretical enterprise devoted to explaining the nature of our bodily perceptions and practices and their function in our knowledge and construction of the world', seems extraordinarily well-suited to address this kind of beholding.<sup>68</sup> Somaesthetics seeks to integrate the cultural and the biological, and has proved justifiably seductive for those medievalists who seek to understand the mechanisms of response. I quote at length Daniel Lord Smail's elegant summation of the value of neurobiological work for the study of reception, in which he suggests that

... cultural practices and psychoactive chemicals ... are translated into the language of the nervous system. That language consists of synapses, neurochemicals, and a hideously complex grammar. At the level of the synapse, the effect of cultural traits and practices is similar to the effect of psychoactive substances. Culture, in this sense, is like a drug. But drugs themselves are part of culture. ... Patterns of use can and do change significantly from one historical society to another.<sup>69</sup>



This judicious methodology of elision between history and biology is remarkably useful for the consideration of the subject at hand. In order to understand the nature of the viewer's response to the Christ in the Winepress print specifically, I propose to augment the consideration of medieval theories of perception by engaging with contemporary studies in affective neuroscience, or in what might be more accurately called cognitive phenomenology.<sup>70</sup>

These studies stress the importance of sensorimotor systems that respond through the presence of mirror neurons, which enable human beings to respond empathetically to the actions – sensory and emotional – of others.<sup>71</sup> George Lakoff, a proponent of mirror neuron theory, describes 'our mirror neuron circuitry and related pathways' activating when we witness someone performing a particular action, especially if that action is familiar and immediately relevant: 'Our emotions are expressed in our bodies, in our muscles and posture, so that mirror neurons can pick up visual information about the feelings of others.'<sup>72</sup> The resulting connection is both emotional and physical. One need not see the action performed; it is enough to imagine this performance in order to activate 'several body parameters [that] behave similarly to when we actually carry out the same action'.<sup>73</sup> Moreover, the same mirror neuron systems that are activated when watching an action are also activated when looking at a static image.<sup>74</sup> The ramifications for the study of images are appreciable, and in the past decade historians of medieval art and theatre have begun to argue that the concept of mirroring can be fruitful in exploring neuro-affective responses to works of art.<sup>75</sup> Those images that, like the Christ in the Winepress print, are meant to stimulate affective devotion, are particularly implicated in this empathetic receptive structure: the imprinting of the wine press on Christ's flesh would kindle a physical reaction in the beholder, and so, as a result of somatosensory engagement, a stronger identification with Christ's suffering.

But the identification does not necessarily stop here, with the content of the image: it may continue, if the empirical research is correct, with what David Freedberg and Vittorio Gallese have recently termed 'the felt effect of particular gestures made in producing [works of art]'.<sup>76</sup> In discussing the aesthetic implication of the internal simulation of image-makers' actions, Freedberg and Gallese argue that 'viewers frequently experience a sense of bodily involvement with the movements that are implied by the physical traces' – a hypothesis corroborated by recent fMRI tests that identified the activation of the premotor cortex by the mere sight of letters as indistinguishable from that experienced when the test subject wrote the same letters.<sup>77</sup> The authors hypothesize that similar activation would take place before abstract expressionist action painting. But the Christ in the Winepress print, too, preserves traces of the image-maker's trade: in this case, the cutting, the gouging, and, finally, the impressing. The Frankfurt print is especially emphatic in the stressing of its origin as a worked piece of wood brought down upon paper: the trough into which the blood flows replicates a pattern of wood grain, and the vigorous hatching marks the print and contrasts with the blank expanses of the cross-bar and the frame. If the hypothesis of imitating action is correct, then the beholders of the Frankfurt woodcut not only sensed the pressure by looking at the image of Christ's body in the wine press, but also may have felt themselves exerting this pressure by mirroring the implicit movements of the burin and, most importantly, of the printing press. Sometimes, woodcuts supplied a readily – if ultimately multivalent – visual echo of the maker and his movement: a print at Musée du Louvre has God the Father setting the press into motion in an act of filicide (see plate 2), while, as Gisèle Lambert has shown, in the woodcut



drawn from the *Auslegung des lebens Jesu Christi* (Ulm), it is the two torturers who turn the crank on the press, their position and faces clearly modelled on the tormentors who place a crown of thorns on Christ's head (plate 19 and plate 20). The Frankfurt woodcut has no such operators present: it is the press itself that inhabits the main space of the print, simultaneously indexing the human sins that weigh heavily upon Christ's flesh and appearing as an instrument of man's salvation. The viewer is, in essence, a printmaker and a printing press, stamping the holy body and being stamped by it.



**I**hr habend durch bewerte geschriff das dz inwendig innerlich liden vnserz hepfen herren sil vnnnd witt grösser ist gesin dann das vßwendig liphlich liden. vnd das vmb mengerley vrsach willen die ich hie in kürz erzelen will so du vor verstanden haust wie dz hier ding in der gemain gewest syend in cristo dem herze von denē im das gailtlich crüz das vnnmessentlich liden geformieret vnd zugefieg worden ist. Das erst ist gewest ain volkomne versentueß die er hett der vergangne der gegen wirtige vnd der künnftige ding. Das and ain vnnmessentliche liebe die er hett zu got sinem hymelschlichen vatter vnd zu dē menschen siner geschöpf. Das dritt ain vnnmessentlicher

19 'Christ in the Winepress', from *Geistliche Auslegung des lebens Jesu Christi*, Ulm: Johann Zainer der Ältere, c. 1482. Woodcut, 185 mm × 260 mm (page). Paris: Bibliothèque nationale de France (Rés. A. 16995, fol. 146r). Photo: Bibliothèque nationale de France.



20 'The Crowning with Thorns', from *Speculum Humanae Salvationis*, c. 1450, Cologne. Pen drawing, 75 × 74 mm (image), 295 × 210 mm (sheet). The Hague: Koninklijke Bibliotheek (MMW 10 B 34, fol. 44v). Photo: Koninklijke Bibliotheek.



The Christ in the Winepress print, then, structures its meaning through a chain of multiple impressions – visual, physical, spiritual, and affective. It is a meta-image that comments on itself: on its content; on its mode of making; and on its reception. It also calls attention to what Jane Bennet has recently termed 'liveliness intrinsic to the materiality of the thing formerly known as an object'.<sup>78</sup> Here, the potential for image reproduction and imprinting is made palpably mimetic of sacramental and optical species, themselves imprinted and multiplied. Much criticism has been levelled upon Walter Benjamin's suggestion that the 'aura' of a work of art – its permanence, its authenticity, its authority – 'wither[s] in the age of mechanical reproduction'.<sup>79</sup> But Benjamin followed this declaration with another, which rings particularly true for late-medieval devotional woodcuts such as the one explored here: 'in permitting the reproduction to meet the beholder ... in his own particular situation', writes Benjamin, 'it reactivates the object reproduced'. It is this (re)activation of Christ's body in all of its tormented sensations that predicates the series of impressions transforming wood and paper into flesh, ink into blood, and image into a physically and spiritually formative force that registers the maker's movements within the viewers' bodies. Here, the image-making processes and traces traverse and embed themselves into the anthroposemiotic environment of the woodcut, imprinting the beholders, and implicating their vision, memories, and hearts in the embodied process of seeing.<sup>80</sup>



# Notes

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- 1 For literature on the theme of Christ in the Winepress, see Gertrud Schiller, *Iconography of Christian Art*, trans. Janet Seligman, 2 vols, Greenwich, CT, 1971–72, vol. 2, 128–9, and 228–9; James Marrow, *Passion Iconography in Northern European Art of the Late Middle Ages and Early Renaissance*, Kortrijk, 1979, 83–94; essays in Danièle Alexandre-Bidon et al., eds, *Le Pressoir Mystique*, Paris, 1990, esp. Gisèle Lambert, 'Étude iconographique du thème du pressoir mystique à travers la gravure du XVe au XXe siècle', 107–28; Alois Thomas, *Die Theologie des mystischen Kelterbildes*, Düsseldorf, 1936; Marilyn Aronberg Lavin, 'The Mystic Winepress in the Mérode Altarpiece', in Irving Lavin and John Plummer, eds, *Studies in Late Medieval and Renaissance Painting in Honour of Millard Meiss*, 2 vols, New York, 1977, vol. 1, 297–301; and Alfred Weckwerth, 'Christus in der Kelter: Ursprung und Wandlungen eines Bildmotives', in Ernst Guldán, ed., *Beiträge zur Kunstgeschichte: Eine Festgabe für Heinz Rudolf Rosemann*, Munich and Berlin, 1960, 95–108. As Heidrun Stein-Kecks points out in "'Gratiam habere desideras': Die 'Mystische Kelter' in Kapitelsaal der Zisterzienserinnen von Sonnenfeld", short studies on this theme seem to be almost invariably present in festschrifts; her own article, which explores a wall painting in the Sonnenfeld Cistercian abbey and includes an excellent bibliography, itself appears in a festschrift for Berndt Hamm: Gudrun Litz, Heidrun Munzert, and Roland Liebenberg, eds, *Frömmigkeit, Theologie, Frömmigkeitstheologie: Contributions to European Church History*, Leiden, 2005, 253–68.
- 2 This particular print was first published by Gerard Leeu in Gouda and was also included in Petrus de Os's Psalter printed in Zwolle, both c. 1480. For the Frankfurt print, see: Lambert, 'Étude iconographique du thème du pressoir mystique', 11–13; and Jan Willem Holtrop, *Monuments typographiques des Pays-Bas au quinzième siècle; collection de fac-simile d'après les originaux conservés à la Bibliothèque royale de La Haye et ailleurs*, The Hague, 1868, 82, pl. LXXX. The life of the Blessed Lydwine is characterized by her extreme bodily suffering (she shed bits of her flesh when moved from one place to another, and so had to be bound by her attendants) and Eucharistic devotion (she was believed to subsist on the Eucharist alone for the last nineteen years of her life): these may have been the reasons that the Christ in the Winepress print would be particularly fitting for the narrative of her life. See Thomas à Kempis, *St Lydwine of Schiedam*, trans. Dom Vincent Scully, London, 1912.
- 3 The dimensions of the woodcut are 105 × 81 mm; the sheet itself is 113 × 86 mm.
- 4 For the pictorial turn, see first and foremost W. J. T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation*, Chicago, IL, 1994 11–35; and Gottfried Boehm, 'Die Wiederkehr der Bilder', in *Was ist ein Bild?*, Munich, 1994, 11–38. For the material turn, see, for example, essays in Dan Hicks and Mary C. Beaudry, eds, *The Oxford Handbook of Material Culture Studies*, Oxford, 2010. For the cognitive turn, see Pamela Sheingorn, 'Making a cognitive turn in art history: A case study', in Melissa Bailar, ed., *Emerging Disciplines: Shaping New Fields of Scholarly Inquiry in and beyond the Humanities*, Houston, TX, 2010, 145–200. All of the above, of course, engage with Richard Rorty's enduring formulation of the 'linguistic turn'; see his *The Linguistic Turn: Recent Essays in Philosophical Method*, Chicago, IL, 1967. I refer the reader to notes 69–80 for further sources on some of the methods used in this essay.
- 5 Isaiah 53:3, 5, and 10. Here and further I quote from the Reims-Douai version.
- 6 The cross is discussed in Neil Stratford, *Catalogue of Medieval Enamels in the British Museum, Volume 2: Northern Romanesque Enamels*, London, 1993, 70–7. More recently, see: Barbara Baert, *A Heritage of Holy Wood: The Legend of the True Cross in Text and Image*, trans. Lee Preedy, Leiden, 2004, 80–132, on Mosan cross reliquaries, esp. 103–11; and Martina Bagnoli et al., eds, *Treasures of Heaven: Saints, Relics, and Devotion in Medieval Europe*, New Haven and London, 2010, cat. no. 87, 86.
- 7 See Régine Pernoud, 'De la Fontaine de Vie au Pressoir mystique', in *Le Pressoir Mystique*, 17–25; and Dominique Alibert, 'Aux origines du Pressoir mystique. Images d'arbres et de vignes dans l'art médiéval (IXe–Xve siècle)', in *Le Pressoir Mystique*, 27–42.
- 8 A sustained study of this iconography is yet to be written. See Christopher G. Hughes, 'Art and exegesis', in Conrad Rudolph, ed., *A Companion to Medieval Art*, Malden, MA, 2010 [2006], 180–1, on scholarly debate about the Pauline Allegories window at St Denis, which included the Mystic Mill roundel. On the famous capital at Vézelay, see Kirk Ambrose, 'The "Mystic Mill" Capital at Vézelay', in Steven A. Walton, ed., *Wind & Water in the Middle Ages: Fluid Technologies from Antiquity to The Renaissance*, Tempe, AZ, 2006, with recent bibliography and historiographic overview, who considers Louis Grodecki's view that the image, in fact, is metaphorical for literal and spiritual readings.
- 9 Most recently on the Hours of Catherine of Cleve, see two volumes published in conjunction with recent exhibition of the manuscript at the Museum Het Valkhof, Nijmegen, The Netherlands, and the Morgan Library & Museum, New York: Rob Dückers and Ruud Priem, eds, *The Hours of Catherine of Cleves: Devotion, Demons and Daily Life in the Fifteenth Century*, Antwerp, 2009, and Anne Margreet W. As-Vijvers, ed., *From the Hand of the Master: The Hours of Catherine of Cleves*, trans. Kathryn M. Rudy, Antwerp, 2009.
- 10 See Thomas, *Die Theologie des mystischen Kelterbildes*, 125; and E. Burg, 'Wie das Bild "Christus in der Kelter" entstand. Eine Geschichte E. an der Mosel', *Heimat-Hunsrück*, 5, 1957–58, 9.
- 11 Perrine Mane, 'Le pressoir mystique dans les fresques et les miniatures médiévales', in *Le Pressoir Mystique*, 93–106, at 100 (my translation). On the significance of colour red, see Michel Pastoureau, 'Ceci est mon sang: Le Christianisme médiéval et la couleur rouge', in the same volume, 43–56.
- 12 In this case, Chare is discussing gender; see Nicholas Chare, 'Sexing the canvas: Calling on the medium', *Art History*, 32, 2009, 664–89.
- 13 See on this subject Gloria Withalm, "'How did you find us?' – 'We read the script!': A special case of self-reference in the movies", in Winfried Nöth, ed., *Semiotics of the Media: State of the Art, Projects, and Perspectives*, New York, 1997, 255–68.
- 14 The act of creation that culminates in word or image or both commonly functioned as a metaphor for (pro)creative and generative forces in medieval culture. As Michael Camille writes in 'Manuscript illumination as the act of copulation', in Karma Lochrie, Peggy McCracken and James A. Schultz, eds, *Constructing Medieval Sexuality*, Minneapolis, MN, 1997, 'traditional association between the act of copulating and the act of writing ... was taught to every schoolboy in his first Latin lessons about conjugations and the gender of nouns', n. 41; on the topic, see also Elizabeth Pittenger, 'Explicit ink', in Carla Freccero and Louise Fradenberg, eds, *Premodern Sexualities*, London, 1995.
- 15 Susan Schibanoff, 'Sodomy's Mark: Alan of Lille, Jean de Meun, and the medieval theory of authorship', in Glenn Burger and Steven F. Kruger, eds, *Queering the Middle Ages*, Minneapolis, MN, 2001, 28–56, at 34. For the discussion of this miniature, see Michael Camille, 'Manuscript illumination and the art of copulation', 58–90 at 60–7, 87, nn. 8, 15, fig. 4.1.
- 16 Françoise Baron et al., *Les fastes du gothique: le siècle de Charles V, Galeries nationales du Grand Palais*, 9 octobre 1981–1 février 1982, Paris, 1981, no. 213, and Herbert Maryon, 'New light on the Royal Gold Cup', *British Museum Quarterly*, 16: 2, 1951, 56–8.
- 17 We read in the Aberdeen bestiary: 'Vermis est animal quod plerumque de carne vel de ligno vel de quacumque re terrena' (Aberdeen University Library MS 24, fo. 72r), c. 1200. For full bibliography and excellent analysis, transcription and translation of the text, see the Aberdeen Bestiary Project at [www.abdn.ac.uk/bestiary/index.htm](http://www.abdn.ac.uk/bestiary/index.htm) (accessed 31 May 2011).
- 18 Isidore of Seville, *Isidori Hispalensis episcopi Etymologiarum sive originum libri XX*, ed. W. M. Lindsay, 2 vols., Oxford, 1911, vol. 2, 321–2, book 19, section 19.3–19.5. I am grateful to Ryan Netzley for drawing my attention to the meaning of 'hyle'.
- 19 Thomas Aquinas, *Summa theologiae*, part III, question 25, article 4, 'Of the Adoration of Christ'. Latria is the highest form of adoration reserved for God only; Aquinas defines it as such in part II/II, question 84, article 1 ('Of Adoration') and question 103, article 3 ('Of Dulia').



- 20 On the veneration of the true Cross and the true Cross reliquaries, see, most recently, Guido Cornini, "'Non est toto sanctorum orbe locus': Collecting relics in early medieval Rome", in Bagnoli et al., *Treasures of Heaven*, esp. 71–2, and numerous entries from the catalogue.
- 21 Examples of such metamorphoses are numerous; perhaps among the most famous ones are the transformations of Margaretha Ebner's Christ Child doll into a flesh-and-blood infant; see Margaret Ebner, *Major Works*, trans. and ed. Leonard P. Hindsley, New York, 1993, 132–4.
- 22 Image animations recorded in miracle stories, visions, convent chronicles, and pilgrimage accounts are considerable in number, as is the literature that treats them. I quote just a few. Classic considerations are to be found in: Hans Belting, *Likeness and Presence: A History of the Image before the Era of Art* (originally published as *Bild und Kult*), trans. Edmund Jephcott, Chicago, IL, 1994, 261–96 (on Byzantine 'living paintings'); Michael Camille, *Gothic Idol: Ideology and Image-Making in Medieval Art*, Cambridge, 1989, especially 220–39; and David Freedberg, *The Power of Images: Studies in the History and Theory of Response*, Chicago, IL, 1989, 283–316. More recently, see Erik Thunø and Wolf Gerhard, eds, *The Miraculous Image in the Late Middle Ages and Renaissance*, Rome, 2003; Barbara Newman, 'The visionary texts and visual worlds of religious women', in Jeffrey Hamburger and Susan Marti, eds, *Crown and Veil: The Art of Female Monasticism in the Middle Ages*, trans. Dietlinde Hamburger, New York, 2008, 151–71; and Caroline Walker Bynum, *Christian Materiality: An Essay on Religion in Late Medieval Europe*, New York, 2011, 44–61 and 105–21.
- 23 Herbert Kessler, *Seeing Medieval Art*, Toronto, 2004, 20; for such histories, see Thomas Raff, *Die Sprache der Materialien. Anleitung zu einer Ikonologie der Werkstoffe*, Berlin, 1994.
- 24 Richard Rolle, the English Writings, trans. and ed. Rosamund S. Allen, New York, 1988, 114. On Herebert, as well as on the many examples of the ink-as-blood trope, see Marlene Villalobos Hennessy, 'Aspects of blood piety in a late medieval English manuscript: London, British Library Additional 37049', in Rachel Fulton and Bruce Holsinger, eds, *History in the Comic Mode: Medieval Communities and the Matter of Person*, New York, 2007, esp. 182–91; and 'The social life of a manuscript metaphor: Christ's blood as ink', in Joyce Coleman, Mark Kruse, and Kathryn Smith, eds, *The Social Life of Illumination: Manuscripts, Images, and Communities in Late Medieval Europe*, Turnhout, forthcoming. On the poetic theme of Christ in the Winepress, see Paul Franssen, 'Le Pressoir mystique dans la littérature anglaise', in *Le Pressoir Mystique*, 187–95.
- 25 See, most recently, Jill Averil Keen, *The Charters of Christ and Piers Plowman: Documenting Salvation*, New York, 2002. For 'the flow of blood across juridical and iconographic spaces' that 'has blurred the boundaries between Christendom and the Others of its exterior', see Kathleen Biddick, 'Genders, bodies, borders: Technologies of the visible', *Speculum* 68: 2, 1993, 389–418 here at 409.
- 26 Siegfried Wenzel, ed. and trans., *Fasciculus Morum: A Fourteenth-Century Preacher's Handbook*, University Park, PA, 1989, 213.
- 27 See Kathryn Smith, 'The monk who crucified himself', in Elina Gertsman and Jill Stevenson, eds, *Thresholds of Medieval Visual Culture: Liminal Spaces*, Woodbridge, 2012, 44–72; Jessica Brantley, *Reading in the Wilderness: Private Devotion and Public Performance in Late Medieval England*, Chicago, IL and London, 2007, 189–91; and Villalobos Hennessy, 'The social life of a manuscript metaphor'.
- 28 For the discussion of pigments in hand-painted woodcuts, see Shelley Fletcher, Lisha Glinsman, and Doris Oltrogge, 'The pigments on hand-colored fifteenth-century prints from the collections of the National Gallery of Art and the Germanisches Nationalmuseum', in Peter Parshall, ed., *The Woodcut in Fifteenth-Century Europe*, Washington, DC, 2009, 276–97. Specifically for woodcut painting, the authors suggest that 'the transfer of craft from illuminators to painters of woodcuts was a natural continuum' (277). The metaphor is not limited to red ink alone: as early as the ninth century, Rabanus Maurus describes Christ's tormented body as 'full of black and red letters' ('litteris nigris et rubeis plenum'); see his 'Opusculum de Passione Domini', in PL 112, col. 1427C.
- 29 Originally published in Wilhelm Ludwig Schreiber, *Handbuch der Holz- und Metallschnitte des XV. Jahrhunderts. Stark vermehrte und bis zu den neuesten Funden ergänzte Umarbeitung des Manuel de l'amateur de la gravure sur bois et sur métal au XVe siècle*, 8 vols, Leipzig, 1926–30, 841a; *Origins of European Printmaking*, cat. no. 77, 255–7, which includes scant bibliography on this print.
- 30 See BN, MS Lat. 6741, transcribed and translated in 'Manuscripts of Jehan Le Begue: Experimenta de Coloribus', in Mary P. Merrifield, ed., *Medieval and Renaissance Treatises on the Arts of Painting: Original Texts with English Translations*, Mineola, NY, 1999 [1849], 68.
- 31 Rebecca Zorach, *Blood, Milk, Ink, Gold: Abundance and Excess in the French Renaissance*, Chicago, IL, 2005, 28.
- 32 I take the view that this was not a hand-stamped print. In hand-stamped prints, as Arthur M. Hind describes in his *Introduction to a History of Woodcut: With a Detailed Survey of Work Done in the Fifteenth Century*, the ink lines would demonstrate 'a somewhat mottled character with irregular edges; and the centre of the block would generally print less darkly and clearly than the edges'; some lines would have been duplicated as well. Nor is this a rubbed print, which would have been made in grey and brown tones; 2 vols, New York, 1963 [1935], vol. 1, 4–5.
- 33 On the invention of the printing press and the adaptation of the wine press, see James Moran, *Printing Presses: History and Development from the Fifteenth Century*, Berkeley, CA, 1978 [1973], chapter 1; and Hind, *Introduction to the History of Woodcut*, vol. 1, chapters 1 and 2.
- 34 For an elegant summary, see David Areford, *The Viewer and the Printed Image in Late Medieval Europe*, Burlington, VT, 2010, 79–80. For a Byzantine version of a bleeding page is found in the ninth-century Chludov Psalter, where blood stands as an intermediary between the page and the viewer; see Glenn Peers, *Sacred Shock: Framing Sacred Experience in Byzantium*, University Park, PA, 2004, chapter 2.
- 35 Schiller in *Iconography of Christian Art* (vol. 2, 192) and Kathryn Smith in *Art, Identity, and Devotion in Fourteenth-Century England: Three Women and their Books of Hours*, London, 2003, 175–7, discuss the shield as Christ's body in this and other illuminations; Smith also provides an excellent bibliography on the subject. For parchment as body, see Dieter Richter, 'Die Allegorie der Pergamentbearbeitung: Beziehungen zwischen handwerklichen Vorgängen und der geistlichen Bildersprache des Mittelalters', in Gundolf Keil, ed., *Fachliteratur des Mittelalters: Festschrift für Gerhard Eis*, Stuttgart, 1968, 83–92; and entry 49 in *Origins of European Printmaking*, 185–8. Jeffrey Hamburger draws attention to a striking and unusual version of such an identification in Henry Suso's *Exemplar* (BNUS, MS 2929, fol. 7r) where the IHS monogram, previously incised into Suso's own chest, is inscribed into the text, copiously shedding streams of blood; Jeffrey F. Hamburger, *The Visual and the Visionary: Art and Female Spirituality in Late Medieval Germany*, Cambridge, MA, 1998, 262.
- 36 See Thomas Lentz, 'Nur der geöffnete Körper schafft Heil', in Christoph Geissmar-Brandt and Eleonora Louis, eds, *Glaube, Hoffnung, Liebe, Tod*, Vienna, 1995, 152–5.
- 37 David Areford, 'Multiplying the sacred: The fifteenth-century woodcut as reproduction, surrogate, simulation', in *The Woodcut in Fifteenth-Century Europe*, 141–7.
- 38 Areford, 'Multiplying the sacred', 143–4, 145.
- 39 For seminal studies on medieval practices of the Eucharist, see Miri Rubin, *Corpus Christi: The Eucharist in late Medieval Culture*, New York, 1991; and Gary Macy, *The Banquet's Wisdom: A Short History of the Theologies of the Lord's Supper*, New York, 1992.
- 40 Foundational studies on medieval optics and modes of seeing remain: David C. Lindberg, *Theories of Vision from al-Kindi to Kepler*, Chicago, IL, 1981 [1976] and Roger Bacon and the Origins of Perspective in the Middle Ages: A Critical Edition and English Translation of Bacon's *Perspectiva*, Oxford, 1996; and Katherine Tachau, *Vision and Certitude in the Age of Ockham: Optics, Epistemology, and the Foundations of Semantics, 1250–1345*, Leiden, 1988. Art historians have explored this subject thoroughly; see especially Michael Camille, 'Before the gaze: The internal senses and late medieval practices of seeing', in Robert S. Nelson, ed., *Visuality Before and Beyond the Renaissance: Seeing as Others Saw*, Cambridge, 2000, 197–223; and Cynthia Hahn, 'Vision', in *Companion to Medieval Art*, 44–64, with excellent recent bibliography.
- 41 Hamburger, "'In gebeden vnd in bilden gescriben': Prints as exemplars of piety and the culture of the copy in fifteenth-century Germany', in *The Woodcut in Fifteenth-Century Europe*, 156.
- 42 Christopher S. Wood, *Forgery, Replica, Fiction: Temporalities of German Renaissance Art*, Chicago, IL, 2008, 40. Although it is beyond the scope of this paper, one may consider, within the context of the Frankfurt



- print, the idea of Christ as the original to be reproduced by the printing press—or, conversely, that the 'copies' of his body are not necessarily mimetic but are themselves productive.
- 43 Alexander Nagel and Christopher S. Wood, *Anachronic Renaissance*, New York, 2010, 11.
- 44 On Israel van Meckenem's print, one of the more celebrated examples that denotes the printed copy of the Roman icon as 'imago contrafacta', see, among others: David Landau and Peter Parshall, *The Renaissance Print, 1470–1550*, New Haven and London, 1994, 57–8; and Herbert Kessler, 'Face and firmament: Albrecht Dürer's Angel with the Sudarium and the limit of vision', in Christoph L. Frommel and Gerhard Wolf, eds, *L'immagine di Cristo dall'Acheropita alla mano d'artista: dal tardo medioevo all'età barocca*, Città del Vaticano, 2006, 143–65, at 145.
- 45 Discussed in Areford, 'Multiplying the sacred', 131. On the factuality of the early print, see Peter Parshall, 'Imago Contrafacta: Images and facts in the northern Renaissance', *Art History* 16, 1993, 554–79; and Charles Talbot, 'Prints and the definitive image', in Gerald P. Tyson and Sylvia S. Wagonheim, eds, *Print and Culture in the Renaissance: Essays on the Advent of Printing in Europe*, Newark, DE, 1986, 189–205.
- 46 On the Veronica and mandylion, see essays in Herbert L. Kessler and Gerhard Wolf, eds, *The Holy Face and the Paradox of Representation: Papers from a Colloquium Held at the Bibliotheca Hertziana, Rome, and the Villa Spelman, Florence, 1996*, Bologna, 1998.
- 47 Joseph Leo Koerner, *The Moment of Self-Portraiture in German Renaissance Art*, Chicago, IL, 1996, 222–3. See further Kessler's interpretation of Dürer's obscuring of Christ's face in the etching: 'The implication is clear: Dürer's own art is an aid, but only for this world; like its archetype, "not-made-by-hand", it will cede to "the invisible truth of [God's] face"', in 'Face and firmament', 165.
- 48 Lindberg, *Theories of Vision*, 107–16, 122–46. Extromission remains a presence, however, especially in early modern literature at least through the seventeenth century.
- 49 Alhazen, *De aspectibus*, in *Opticae thesaurus. Alhazeni Arabis libri septem, nuncprimum editi...*, New York, 1972, book 1, chapter 5, section 23, 14, also discussed in Lindberg, *Theories of Vision*, 60–7.
- 50 Roger Bacon, *De multiplicatione specierum*, in *The 'Opus majus' of Roger Bacon*, ed. John Henry Bridges, 3 vols, Oxford, 1897–1900, vol. 2, part 1, chapter 1, 405–552, at 409–10.
- 51 Bacon, *De multiplicatione specierum*, 445–6, translated and discussed in Suzannah Biernoff, *Sight and Embodiment in the Middle Ages*, New York, 2002, 73–84 at 74.
- 52 Lindberg, *Theories of Vision*, 80.
- 53 Alhazen, *De aspectibus*, book 2, chapter 1, section 5, 26.
- 54 CUL Ms G.g.I.i., f. 490v. Paul Meter, *A Catalogue of the Manuscripts Preserved in the Library of Cambridge*, Cambridge, 1867, 282; and discussed in Michael Camille, 'Before the gaze', 197–202. The diagram is re-drawn by Collin McKinney and explicated by Mary Carruthers in Mary Carruthers and Jan M. Ziolkowski, eds, *The Medieval Craft of Memory: An Anthology of Texts and Pictures*, Philadelphia, PA, 2002, 120, 122–3.
- 55 Aristotle, *De Memoria et Reminiscencia*, 453a 14 (Bekker).
- 56 Ramon Llull, 'De astronomia', 1.1, in M. Pereira and T. Pindl-Bücher, eds, *Raimundi Lulli Opera Latina*, vol. 17, Brepols, 1989, 108–9, translated and discussed in Rebecca Zorach, *The Passionate Triangle*, Chicago, IL, 2011, 118. It should be said, however, that Llull associated melancholics with both water and earth; ostensibly, the combination of the two elements would make for the most effective impressions-retaining medium.
- 57 Edwin Clarke, Kenneth Dewhurst and Michael Jeffrey Aminoff, *An Illustrated History of Brain Function: Imaging the Brain from Antiquity to the Present*, second edn, San Francisco, CA, 1996, Chapter 3, 8–58, at 2, for the Cambridge diagram and at 34 for the Albertus drawing.
- 58 Thomas Bradwardine, *De Memoria Artificiali (On Acquiring a Trained Memory)*, Fitzwilliam Museum, Cambridge, MS McClean 169, translated in Mary Carruthers, *The Book of Memory: A Study of Memory in Medieval Culture*, second edn, Cambridge, 2008, appendix C, 281–8, at 281.
- 59 Carruthers, *Book of Memory*, 27.
- 60 Thomas Aquinas, *Commentary on Aristotle's De anima*, book 2, Lectio 24, paragraphs 553–4.
- 61 Saint Bonaventure, 'The Life of Saint Francis', in *The Little Flowers of St Francis: The Mirror of Perfection. The Life of St Francis*, London, 1910, Chapter 11, 368; and 'The Soul's Journey Into God', in *The Soul's Journey into God; The Tree of Life; The Life of St. Francis*, trans. Ewert Cousins, New York, 1978, chapter 3.
- 62 For example, Bayeux, MS 48, f. 123v, sermon 43, cited in Hervé Martin, 'Les Procédés didactiques en usage dans la prédication en France du nord au XVe siècle', in *La Religion populaire. Colloques Internationaux du Centre National de la Recherche Scientifique*, no. 576, Paris, 1979, 65–76, at 66.
- 63 Discussed in Carruthers, *Book of Memory*, 48–9. For the inscriptions on the heart and the heart as the book, see Eric Jaeger, *The Book of the Heart*, Chicago, IL, 2000.
- 64 See Gertrude the Great, *Le Héraut*, trans. Margaret Winkworth as *The Herald of Divine Love*, New York, 1993, 100; on Gertrude's soul reformed by stamping see Eve B. Jenkins, 'St Gertrude's synecdoche: The problem of writing the Sacred Heart', *Essays in Medieval Studies*, 14, 1997, 29–37, esp. 32. Mechthild of Hackeborn, *Liber specialis gratiae*, book 1, chapter 1, is discussed in terms of Aquinas's metaphor of imprinting of the divine image on man's mind in Marjorie O'Rourke Boyle, *Divine Domesticity: Augustine of Thagaste to Teresa of Avila*, Leiden, 1997, 99. For the discussion of both experiences within the framework of Eucharistic devotion, see Caroline Walker Bynum, *Jesus as Mother: Studies in the Spirituality of the High Middle Ages*, Berkeley, CA, 1982, 193–4, 210.
- 65 Jan van Ruusbroec, *Opera Omnia*, ed. Guido de Baere, trans. Helen Rolfsen, vol. 3, Turnhout, 1988, 156–9.
- 66 'A Treatise on Four Classes of Subjects Suitable for Meditation: A Sermon on the Lord's Nativity', *Devotio Moderna: Basic Writings*, trans. John van Engen, New York, 1988, 98–118, at 116–17. See the discussion of Grote's theories of corporeal and spiritual vision in Kees Waaijman, 'Image and imagelessness: A challenge to [the modern] devotion', in Hein Blommesteijn, Charles Caspers and Rijcklof Hofman, eds, *Spirituality Renewed: Studies on Significant Representatives of the Modern Devotion*, Louvain, 2003, 29–40.
- 67 Bret L. Rothstein, *Sight and Spirituality in Early Netherlandish Painting*, New York, 2005, 32.
- 68 Robert Shusterman, 'Somaesthetics and the second sex: A pragmatist reading of a feminist classic', *Hypatia*, 18: 4, 2003, 106–36, at 112.
- 69 Daniel L. Smail, 'An essay on neurohistory', in *Emerging Disciplines*, 210–11.
- 70 This approach, in a way, engages with what Bruce R. Smith calls 'historical phenomenology', which 'must inevitably be a present phenomenology, but not a presentist phenomenology if that means willingly turning one's back on the past' (*Phenomenal Shakespeare*, Malden, MA, 2010, 36). For cognitive phenomenology (also called 'neurophenomenology') and its reconciliation with earlier phenomenological studies, see note 78.
- 71 On mirror neurons, see Vittorio Gallese and George Lakoff, 'The brain's concepts: The role of the sensory-motor system in reason and language', *Cognitive Neuropsychology*, 22: 3–4, 2005, 455–79; essays in Maxim I. Stamenov and Vittorio Gallese, eds, *Mirror Neurons and the Evolution of Brain and Language*, Amsterdam, 2002; and Giacomo Rizzolatti and Corrado Sinigaglia, *Mirrors in the Brain: How Our Minds Share Actions and Emotions*, trans. Frances Anderson, Oxford, 2008.
- 72 George Lakoff, *The Political Mind: Why You Can't Understand 21st-century Politics with an 18th-century Brain*, New York, 2008, 117.
- 73 Gallese and Lakoff, 'The brain's concepts', 464.
- 74 Cosimo Urgesi et al., 'Mapping implied body actions in the human motor system', *Journal of Neuroscience*, 26, 2006, 7942–9; and Scott Johnson-Frey et al., 'Actions or hand-object interactions? Human inferior frontal cortex and action observation', *Neuron*, 39, 2003, 1053–8, discussed in David Freedberg and Vittorio Gallese, 'Motion, emotion and empathy in aesthetic experience', *Trends in Cognitive Sciences*, 11: 5, 2007, 197–203, at 200.
- 75 See, for example, David Freedberg, 'Choirs of praise: Some aspects of action understanding in fifteenth century painting and sculpture', in David Levine and Jack Freiberg, eds, *Medieval Renaissance Baroque: A Cat's Cradle for Marilyn Aronberg Lavin*, New York, 2009, 65–81; and Sheingorn's 'Making a cognitive turn'. For the application of these theories to medieval theatre, see Jill Stevenson, *Performance, Cognitive Theory, and Devotional Culture*, New York, 2010. Among key studies that address intersections between art history and cognitive science, although not dedicated to either medieval or early modern periods, are: John Onians, *Neuroarthistory: From Aristotle and Pliny to Baxandall and Zeki*, New



- Haven and London, 2008; Barbara Stafford, *Echo Objects: The Cognitive Work of Images*, Chicago, IL, 2007; essays in Mark Turner, ed., *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, Oxford, 2006; and Semir Zeki, *Inner Vision: An Exploration of Art and the Brain*, Oxford, 1999.
- 76 Freedberg and Gallese, 'Motion, emotion and empathy', 197, which includes a useful historiography of art historians' engagement with the concept of empathy in the works of art.
- 77 fMRI is the functional magnetic resonance imaging that measures brain activity. Marieke Longcamp et al., 'Premotor activations in response to visually presented single letter depend on the hand used to write: A study on left-handers', *Neuropsychologia*, 43, 2005, 1801–9.
- 78 Jane Bennet, *Vibrant Matter: A Political Ecology of Things*, Durham, NC, 2009, xvi. I am grateful to Gerry Guest for pointing me towards this stimulating book.
- 79 Walter Benjamin, 'The work of art in the age of mechanical reproduction' (1936), in Hannah Arendt, ed., *Illuminations*, trans. Harry Zohn, New York, 1969, 186. See, for example, Horst Bredekamp, 'Der simulierte Benjamin: Mittelalterliche Bemerkungen zu seiner Aktualität', in Andreas Berndt et al., eds, *Frankfurter Schule und Kunstgeschichte*, Berlin, 1992, 117–40, who focuses on Benjamin's assertion that a copy reduces the scale of the original object, and discusses it in terms of late medieval sculpture; or Areford, *The Viewer and the Printed Image*, 9–10, for a critique of Benjamin's ideas about the work's 'aura' within the context of prints.
- 80 Such perception processes, in other words, suggest a revised version of Husserlian *Lebenswelt* underpinned, after all, by the unmistakable mechanisms of cognition. In explaining *Lebenswelt* ('Lifeworld'), Husserl wrote: 'in whatever way we may be conscious of the world as universal horizon, as coherent universe of existing objects, we, each "I-the-man" and all of us together, belong to the world as living with one another in the world; and the world is our world, valid for our consciousness as existing precisely through this "living together." We, as living in wakeful world-consciousness, are constantly active on the basis of our passive having of the world ... The we-subjectivity ... [is] constantly functioning'; see Edmund Husserl, *The Crisis of the European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, trans. David Carr, Evanston, IL, 1970 [1936], 108–9. The apparent disagreements and uneasy overlaps of cognitive theory with classic phenomenological studies, including Edmund Husserl's and Maurice Merleau-Ponty's (see, for example, *Phenomenology of Perception*, the unfinished *Visible and the Invisible*, etc.), have been resolved in recent approaches to the so-called 'neurophenomenology'; see in particular Francisco J. Varela, 'Neurophenomenology: A methodological remedy for the hard problem', *Journal of Consciousness Studies*, 3, 1996, 330–50; Shaun Gallagher and Dan Zahavi, *The Phenomenological Mind: An Introduction to Philosophy of Mind and Cognitive Science*, London, 2008; and Evan Thompson, *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*, Cambridge, MA, 2007.