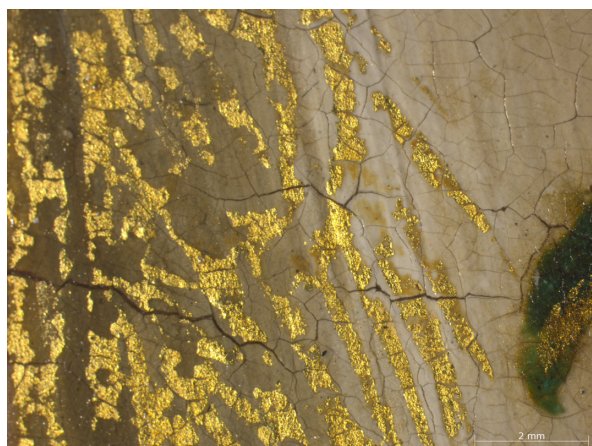
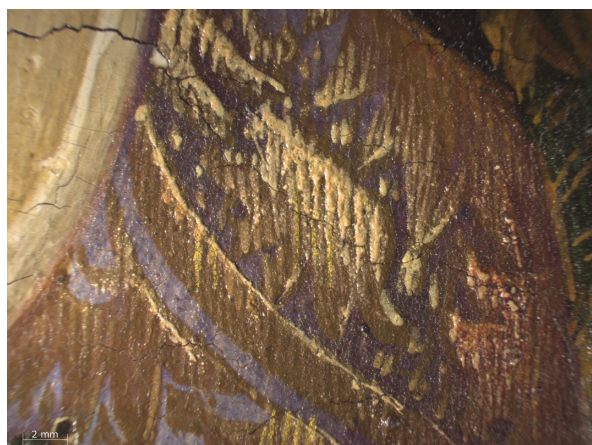


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Series editor Ashok Roy

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FRONT COVER

Andrea del Verrocchio, *The Virgin and Child with Two Angels*,  
NG 296, detail of fig. 18, page 16

TITLE PAGE

Andrea del Verrocchio, *The Virgin and Child with Two Angels*,  
NG 296, photomicrographs (see page 17 for details)

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# In Search of Verrocchio the Painter: The Cleaning and Examination of *The Virgin and Child with Two Angels*

JILL DUNKERTON AND LUKE SYSON

The woodcut frontispiece to Giorgio Vasari's 'Life of Andrea del Verrocchio' in the 1568 edition of the *Lives of the Most Excellent Italian Painters, Sculptors, and Architects* is inscribed beneath the portrait 'ANDREA DEL VERROCCHIO, PITTOR, SCUL. ET ARCH. FIOR.'. Verrocchio's career as the greatest Florentine sculptor of the later part of the fifteenth century has been extensively studied, with a firmly established core group of works, many of them documented. Disagreement extends only to the dating of some of these pieces and to sculptures of uncertain attribution.<sup>1</sup> While he is no longer commonly thought of as an architect, the design of the tomb of Cosimo de' Medici, in the Church of San Lorenzo, Florence, could qualify him as such.<sup>2</sup> It is, however, Verrocchio's identity as a painter that has generated the greatest dissent and uncertainty.<sup>3</sup> Bound in with this is the issue of his role as a teacher, for his other great distinction is in the training of several of the most important painters of the time, including, of course, Leonardo da Vinci, whose subsequent celebrity came very quickly to blight the painterly reputation of his master.

Verrocchio's status as a painter has long been coloured by Vasari's story in one of the more disorganised of his *Lives*. It tells of how Verrocchio came to paint *The Baptism of Christ* for the Vallombrosan monks of San Salvi in Florence with the assistance of his apprentice, Leonardo, who painted an angel 'so superior to the rest of the work that Andrea resolved he would never take up a brush again'.<sup>4</sup> Recent research and technical examination has shown that in fact Leonardo painted much more than the angel in profile on the left traditionally attributed to him, reworking large areas of the panel using a style and an oil-based technique that suggest that he was entrusted with completing the work as late perhaps as 1476–8. By this time he had 'graduated' from Verrocchio's workshop, although he may have

still been working under his master's commercial 'umbrella'.<sup>5</sup> Inevitably, less attention has been given to those parts of the painting not attributed to Leonardo, but the likelihood that the altarpiece was commissioned as early as 1468 by one of Verrocchio's brothers, Don Simone, on becoming Abbot of San Salvi, suggests that it may have been begun by Verrocchio and his workshop at about that moment (although its completion was delayed, probably as a result of his other projects for more prestigious patrons).

The only other painting specifically mentioned by Vasari is an altarpiece (now in the Szépművészeti Múzeum, Budapest) for the nuns of another Florentine church, San Domenico del Maglio, widely accepted as principally by Biagio d'Antonio.<sup>6</sup> Biagio very probably used drawings by Verrocchio for some figurative elements, and perhaps the overall composition.<sup>7</sup> Conversely, Vasari assigns the one painting for which there is a documented commission to Verrocchio – the altarpiece for Pistoia known as the *Madonna di Piazza* – to Lorenzo di Credi. Vasari was well informed on the life of Lorenzo, and examination of the picture surface confirms that the altarpiece was indeed entirely painted by him while employed as Verrocchio's senior assistant. Verrocchio had obtained the commission probably in the winter of 1474–5, and at the outset, he may again have played a part in the design process.<sup>8</sup>

There are, however, other contemporary documentary sources that confirm Verrocchio's involvement in the practice of painting. That archetypal Florentine patron Giovanni Rucellai called him 'scultore e pittore' in his list, probably drawn up in the late 1460s, of leading artists from whom he had commissioned works for his palace.<sup>9</sup> Eight years after Verrocchio's death, his other brother, Tommaso, made a list of Medici commissions for which his heirs had still not been paid, which includes 'lo stendardo per la giostra di Lorenzo', the





FIG. 1 *The Virgin and Child with Two Angels* (NG 296), c. 1476–8, before cleaning and restoration. Tempera on wood, 96.5 × 70.5 cm.



joust staged in Florence in February 1469, and also a panel portrait of Lorenzo's great chivalric love, Lucrezia de' Donati, probably made in connection with the same event.<sup>10</sup> It could be thought strange for Verrocchio to be producing paintings for a patron as important as Lorenzo de' Medici if he had not already demonstrated his abilities in this field. Later that year he was paid by the Mercanzia for a drawing of the figure of Faith, unsuccessfully submitted in the hope of obtaining the commission for the Virtues (or some of them).<sup>11</sup> By 1472, he was called 'dipintore e'ntagliatore' in the membership list of the re-formed Compagnia di San Luca.<sup>12</sup> More *stendardi* are recorded in 1475 (see FIG. 55),<sup>13</sup> and several paintings are listed among the contents of his workshop on his death.<sup>14</sup>

What may be the clinching argument in favour of Verrocchio as a painter of real ability is the list of celebrated artists, predominantly painters rather than sculptors, who passed through his workshop, as both apprentices and assistants, but also perhaps as young journeymen needing a base before setting up on their own; it is important not to imagine too rigid and formalised a structure for the painter's workshop at this date. Leonardo da Vinci, Pietro Perugino and Lorenzo di Credi are all shown by contemporary documents or other early sources to have worked with Verrocchio. Vasari, in his life of Lorenzo di Credi – certainly the youngest of the group – writes of all three being together in the workshop.<sup>15</sup> Another trio of painters, comprising Sandro Botticelli, Francesco Botticini and Biagio d'Antonio, would seem, on biographical, stylistic and technical grounds, to have passed through the workshop slightly earlier, probably in the late 1460s.<sup>16</sup> The anonymous Master of the Gardner Annunciation (probably, though not certainly, the young Pier Matteo d'Amelia) may also have been there in around 1470.<sup>17</sup> Domenico Ghirlandaio is often erroneously stated to have received his training as a painter from Verrocchio, though Vasari, again well-informed, states that he was taught painting and mosaic by Alesso Baldovinetti.<sup>18</sup> Like his brother David, Domenico would appear to have studied paintings by Verrocchio and his collaborators very closely, but it is worth insisting upon the distinction between pupils and collaborators on the one hand and informed followers on the other.

Verrocchio's impact upon painting in Florence in the last three decades of the fifteenth century is widely

acknowledged, yet there is still little agreement among scholars as to what he painted himself; some have constructed a relatively extensive hypothetical oeuvre,<sup>19</sup> while others have argued that he painted very little himself, taking on painters to carry out that part of workshop activity, and indeed that this routine delegation was part of the attraction of association with Verrocchio, as well as, of course, access to his prestigious clientèle.<sup>20</sup> Faced with this confusion, a third group of scholars has opted for the generic attribution of all these pictures to the 'Workshop of Andrea del Verrocchio', an appellation which is both strictly accurate and somewhat misleading. Among the paintings attributed to Verrocchio with various degrees of probability is a group of assorted Madonnas; of these a small but much-restored panel in Berlin, showing the Virgin with the Child seated on her lap, has gained the widest acceptance, largely on account of its perceived sculptural qualities.<sup>21</sup> Another is the much larger *Virgin and Child with Two Angels* (NG 296) in the National Gallery (FIG. 1).

### *Provenance and history of attribution*

*The Virgin and Child with Two Angels* was purchased by the National Gallery in October 1857 through the Florence dealer M.L. Humbert.<sup>22</sup> It had belonged to the Sensi Contugi family of Volterra, who had offered it to Sir Charles Eastlake and his travelling agent Otto Mündler – on one of their picture-buying expeditions on behalf of the Gallery – as a work by Piero della Francesca. They, however, believed it to have been painted by Domenico Ghirlandaio,<sup>23</sup> while Antonio Garagalli, a local Volterra antiquarian and restorer, in a printed pamphlet about the painting addressed to its recent owner, Cavaliere Giuseppe Contugi, extolled its virtues, lamented its loss and concluded that it could only be a work by Leonardo.<sup>24</sup> This attributional muddle is likely to make the painting difficult to identify in earlier sources, with the result that its provenance before 1857 may never be established. And it was to continue. Although the National Gallery initially displayed its acquisition as the work of Domenico Ghirlandaio, there were soon dissenters. By 1867 Otto Mündler seems to have changed his mind, deciding that it was the work of one of the Pollaiuolo brothers.<sup>25</sup> An

undated but early and apparently much-retouched photographic reproduction of the painting was issued by a German publisher as by 'Pesello'.<sup>26</sup> Crowe and Cavalcaselle in 1864 seem to have been the first to recognise the Verrocchiesque elements, attributing the work to the young Lorenzo di Credi while working in the Verrocchio workshop;<sup>27</sup> as will be seen later, their typically acute observations remain pertinent. Wilhelm von Bode believed the work to be close to Verrocchio,<sup>28</sup> while Maud Cruttwell rejected it entirely.<sup>29</sup>

In the later twentieth century, there seems to have been general agreement that the panel was the product of the Verrocchio workshop, but with oscillating opinions as to who may have been involved in its execution. The names most frequently advanced are those of two of his most notable supposed pupils, namely Perugino and Domenico Ghirlandaio, even though the presence of the latter in the workshop has never been more than supposition.<sup>30</sup> In 1969, Günter Passavant tentatively linked *The Virgin and Child with Two Angels* with 'una tavola di nostra Donna' that, according to a much later notarial record, was painted by Lorenzo di Credi in 1473–4 when he was in the Verrocchio shop.<sup>31</sup> Pietro C. Marani revived the suggestion, first made by Charles Holmes, that the picture involved a collaboration between Verrocchio and Leonardo.<sup>32</sup> In recent years, fewer connoisseurs have considered the possibility that it might have been entirely painted by Verrocchio himself. But these exceptions include Konrad Oberhuber,<sup>33</sup> who placed the picture in the 1460s, and Jean K. Cadogan, with the more precise date of c. 1466.<sup>34</sup> More recently, in 1987, Luciano Bellosi mentioned 'un gruppo di dipinto ben noti, attribuiti dal Longhi, dallo Zeri e da altri al giovane Perugino', all of which he believes to be actually by Verrocchio's own hand. Bellosi added, rather wonderfully: 'Tra essi brilla come una perla la 'Madonna a mezza figura con due angeli' della National Gallery', agreeing that it belongs to the 1460s.<sup>35</sup>

In the National Gallery's own catalogues, Martin Davies took a characteristically cautious approach, acknowledging the case for Verrocchio, but indicating his doubts by appending the qualifier 'Ascribed to'.<sup>36</sup> In recent years, the painting has been labelled as 'Workshop of Verrocchio', an appellation which is actually a step lower in the Davies hierarchy of attribution and one with inevitable implications of inferiority, suggestive of collaboration and even replication of

images.<sup>37</sup> In the 1999 National Gallery exhibition *Renaissance Florence: The Art of the 1470s*, Verrocchio's wide-ranging production and his role as a teacher were properly a central theme. *The Virgin and Child with Two Angels* was included, Nicholas Penny's catalogue entry drawing attention to the 'dazzling skill' of the rendition of certain passages, though questioning Verrocchio's authorship because of the evident infelicities of parts of the compositional design.<sup>38</sup>

Another factor that may have been underestimated is the extent to which the appearance of the panel was compromised by the deterioration of previous restorations. Although not extensive, these have turned out to be more disruptive than could be anticipated from superficial examination of the paint surface. When in 2008 the decision was made to clean the picture, it became the focus of a programme to investigate and, if necessary, to clean and restore the small group of panels in the collection which have generally been associated with Verrocchio and members of his workshop. One of the principal aims of this project was to take advantage of the opportunity for close and prolonged consideration of these paintings during their treatment, supported by the results of technical examination, so as to reconsider the problem of collaborative practices within Verrocchio's workshop, and his own role as its head and, perhaps, as a painter himself. The other pictures treated were *The Virgin and Child* (NG 593), an exceptionally well-preserved work, attributed unambiguously to Lorenzo di Credi,<sup>39</sup> and another smaller panel, also of *The Virgin and Child with Two Angels* (NG 2508), previously catalogued as a product of the 'Florentine School' but now identified with some confidence as an early product of Verrocchio's own hand.<sup>40</sup>

### *Conservation history*

On its acquisition in 1857, the larger version of *The Virgin and Child with Two Angels* was sent straight to Milan for restoration by Giuseppe Molteni, habitually employed by Eastlake and Müндler for their important Italian purchases. He began work on the painting in December 1857.<sup>41</sup> Müндler seems to have followed the process closely, seeing the painting in Milan at the end of the treatment in March 1858, when he declared that 'the complete success of the restoration can no longer be





FIG. 2 NG 296, photograph taken in 1931, with Giuseppe Molteni's restorations.

questioned'.<sup>42</sup> At no point does he mention any cleaning of the painting, and the entry recording the purchase in the 1858 National Gallery Annual Report describes it only as having been 'repaired, where necessary'.<sup>43</sup> Therefore it seems possible that the painting had already been cleaned to some extent before it was sold. Indeed Garagalli, in his account of the painting dedicated to Contugi, records, in all too familiar terms, that the head of the angel on the right was 'un tal poco meno danneggiato delle diverse altre parti nelle carni di tutte le figure, dalla mano sacrilega del barbaro e idiota ripulitura'.<sup>44</sup>

Photographs of the painting when it still bore Molteni's restorations indicate that he exercised uncharacteristic restraint when retouching, with relatively few signs of the additions and adjustments for which he was known even at the time.<sup>45</sup> The possibility that Mündler was wise to Molteni's tendency to embellish and 'improve' paintings is suggested by entries in his diary referring to the photography of an otherwise unknown 'Holy Family' by Ghirlandaio exactly at the time of the purchase and restoration of *The Virgin and*

*Child with Two Angels*.<sup>46</sup> If, as seems likely, the use of the term Holy Family was a slip of the pen, then this would be a very early example of the use of photography to document a restoration.

Molteni's retouchings had already discoloured when the painting was photographed in 1931 (FIG. 2), especially on the faces of the Virgin and the angel on the left. In December 1950, it was decided that it should be cleaned. The cleaning was undertaken by Sebastian Isepp, the Austrian painter and restorer who, from 1925 to 1936, was chief restorer at the Kunsthistorisches Museum in Vienna, before escaping to England following the *Anschluss* in 1938.<sup>47</sup> He worked for the National Gallery during the war years and until his death in 1954, but never became a full-time member of the newly formed Conservation Department. He was generally a cautious restorer, and the well-documented treatment of *The Virgin and Child with Two Angels* confirms that he was prepared to leave areas of previous restoration, especially if this would reduce the amount of retouching needed following cleaning. His approach



FIG. 3 NG 296, photograph taken in 1951 following cleaning and restoration by Sebastian Isepp.

was far from consistent, however, and this may have contributed to the somewhat unbalanced appearance of the painting, with the different levels of cleaning becoming increasingly apparent with time. In some parts, such as the sky and the flesh tints, he seems to have removed all of Molteni's varnish, which by 1950 was 'yellowed', especially where it had 'accumulated along the edges of the heavier craquelure'.<sup>48</sup> He also cleaned thoroughly the Virgin's blue mantle, noting in advance one of Molteni's little introductions, an extra fold down the shadowed side of the Virgin's right knee. He discovered that the whole of the mantle had been glazed with green watercolour; the cleaning swabs were investigated by the Scientific Department, which identified 'a natural vegetable green (sap green?) precipitated on aluminium sulphate'. Clearly Molteni had wished to tone the cool pale blue resulting from the mixture of ultramarine and lead white, but the toning layer also disguised fairly extensive abrasion in some parts of the drapery, especially on the projecting knees and over the Virgin's right arm. Removal of this layer left parts of the drapery with a somewhat raw appearance which was not

remedied by subsequent retouching. Conversely, Isepp left in place many of the old retouchings (adjusting them to tone in with the cleaned painting), and all of Molteni's restoration, including the varnish, on the curtain on the left, with its reconstructed area in the upper corner. The curtain, therefore, appeared heavy and dense against the thinly painted blue sky. In leaving the restoration, Isepp also retained part of his predecessor's reconstruction of the Virgin's halo of gold dots (now almost entirely lost), but only where it went over the paint of the curtain – illogically, since it is clear from the incision of the halo that originally it was behind the curtains, which should be imagined as suspended in front of the figure group. He also retained the new gold on the damaged parts of the Virgin's mantle and some gilded dots on the haloes of the two angels.

As was usual at that time, the retouching of the painting was carried out fairly rapidly, and with the general aim of reducing the visibility of the losses when the painting was viewed from a normal distance in gallery viewing conditions (FIG. 3). Unfortunately, Isepp's retouching technique, using a combination of watercolour with wax and dammar glazes, seems to have been particularly unstable, and his restorations on several National Gallery paintings have deteriorated over time,<sup>49</sup> usually becoming greyish and blanched, as on the areas of flesh and the Virgin's cloak in *The Virgin and Child with Two Angels* (FIG. 1). By 2008, the varnish – a single sprayed coat of dammar, according to the Conservation Record –<sup>50</sup> had also become surprisingly discoloured and, in spite of its thinness, its increasing opacity was beginning to distort spatial relationships within the painting.

### *The panel*

The panel is very probably of poplar, constructed from a wide vertical board with a narrower strip at the right and possibly a similar strip on the left.<sup>51</sup> This is a typical construction for Florentine panels of the period. It appears to have retained its original thickness, but the back and sides are obscured by a coating of gesso and yellow-ochre-coloured paint, almost certainly applied during the treatment by Molteni, who must also have secured the open joint at the right (as seen from the front), reinforcing it with butterfly keys (FIG. 4).



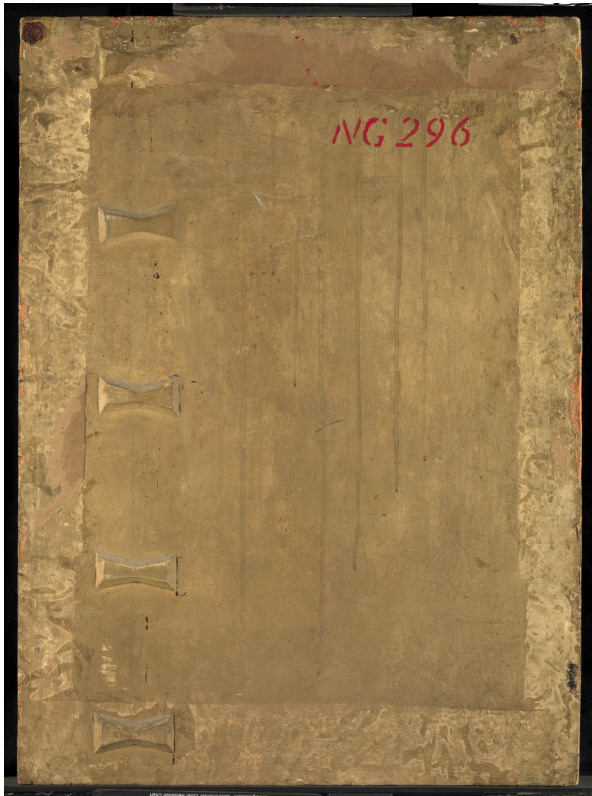


FIG. 4 NG 296, photograph of the reverse.



FIG. 5 NG 296, photomicrograph of the right edge, showing the paint and ground curving round the front edge of the panel.



FIG. 6 Hypothetical reconstruction of framing for NG 296 using Desiderio da Settignano's Sacrament tabernacle, c.1460–1. Marble, height c. 350 cm. Florence, San Lorenzo.

Although the gesso and paint on the reverse completely obscure any trace of the image on the front when the panel is X-rayed, the removal of these layers cannot be justified, since the structure has remained stable for the past 150 years and the fragile and worm-eaten parts of the panel remain well protected.

In the past, the tight composition and the asymmetry of the curtains have led to the general assumption that the panel has been cut.<sup>52</sup> This is not the case, however, since close examination shows that the gesso ground curves in a lip around all four edges (FIG. 5); had the sides not been subsequently coated, dribbles of gesso might have been visible. The paint film also extends to the very edges and, on the left and right sides in particular, includes important details that do not allow for covering by a frame rebate. This fact raises the question of the original function of the panel. It is considerably larger than the many Florentine Madonnas of the mid to late fifteenth century which are reasonably assumed to have been painted for domestic display and devotion. Although the dimensions of such works were beginning to increase, especially those for grand palaces (for





FIG. 7 NG 296, photograph during varnish removal.

example, the series of *tondi* by Botticelli), another factor distinguishes this work from these others: it is surely significant that *The Virgin and Child with Two Angels* is lit from the right<sup>53</sup> rather than from the left, as was more usual. All these factors suggest that it was painted for a specific location, perhaps mounted in a stone or marble tabernacle (rather than a wooden frame with a rebate, which would have concealed crucial details, particularly of the angel's lily on the left) and set perhaps on a small altar in an oratory or private chapel (FIG. 6). The conceit of the curtains, suspended in front of the panel and drawn apart to reveal the sacred image, reinforces this supposition. Although there are echoes of the composition in other works by painters believed to have had an association with the Verrocchio workshop,<sup>54</sup> its original location and earlier provenance are still unknown. There can, however, be little doubt that this was an expensive and prestigious commission, as will become apparent.

### *Cleaning and restoration*

As might be expected, the natural resin varnishes used by Isepp, and by Molteni in those areas not cleaned previously, were easily soluble, resulting in an immediate gain in the luminosity of the sky and the recession from the curtain to the figures and landscape (FIG. 7). Both these sets of retouchings could also be removed without difficulty. Analysis was carried out on samples from Molteni's reconstruction of the missing corner of the curtain, confirming the presence of egg tempera and mastic resin, possibly mixed to form an emulsion, which has previously been found in the restorations of other National Gallery paintings known to have passed through his studio.<sup>55</sup> The dull opacity of his restoration is also a common feature (still visible in the illustration in the uncleaned area at the upper left corner of the panel). In addition, a considerable amount of original





FIG. 8 NG 296, detail before cleaning.



FIG. 9 NG 296, detail of digital infrared reflectogram, before cleaning.

paint was recovered from beneath the excessive filling of the loss.

While unstable materials may have partly caused the deterioration of the 1950–1 restoration, its removal also revealed another explanation, especially in areas of flesh painting. Before the cleaning, the delicate modelling of the face of the Virgin was disturbingly disfigured by unrestored areas of abrasion, and still more so by heavy opaque retouchings (FIG. 8). Most of these were all too visible on the paint surface, but their extent could also be identified by their dark appearance in the infrared reflectogram made as part of the customary examination before treatment (FIG. 9). In his report on the painting, Isepp had noted the presence of retouchings in a water-soluble medium on the Virgin's face and neck; these were well matched in colour, and so he left them in place. These retouchings, assumed to be Molteni's, were indeed well matched, but they were also inappropriately thick and opaque because they had to cover the residues of a yet earlier campaign of restoration, which in the damaged flesh areas were revealed to have been coloured an unpleasantly pasty pink (FIG. 10). Around these earlier damaged and retouched areas, there are often very fine random scratch marks, evidence that some form of abrasive was

used in attempts to remove this phase of retouching. This paint must therefore have become very hard even by the mid-nineteenth century, when the picture was cleaned, most probably shortly before being assigned to Molteni for repair. Analysis of samples of these retouchings confirmed that they had been executed using oil paints.<sup>56</sup> Where lead white was present, their gritty appearance as a result of the formation of lead soaps made them easily identifiable. They not only covered areas of loss but had also been used for the unnecessary reinforcement of many details, including the edges of translucent veils (FIG. 11), and to add superfluous highlights to the pearls on the brooches worn by the Virgin (FIG. 12) and the angel on the left.<sup>57</sup> In every instance, they clearly passed over the fine cracks in the original paint.

Dark grey-brown touches had also been added to strengthen the deeper folds of the Virgin's headdress, which showed as black in the infrared reflectogram (FIG. 9), and smears of dark blue paint were present beneath Isepp's retouchings in several places on the Virgin's mantle. In the triangular corner of a fold over her left knee, strokes of Isepp's grey-blue retouching appeared to the right of a light turquoise-blue patch, recognisable from its colour and texture as Molteni's;<sup>58</sup>



FIG. 10 NG 296, photomicrograph of the layers of retouching on the Virgin's cheek.

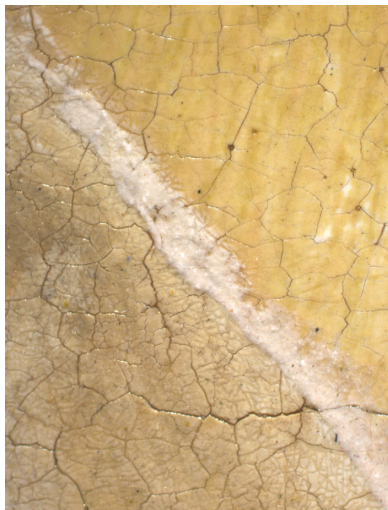


FIG. 11 NG 296, photomicrograph of a line of old repaint reinforcing the edge of the veil.

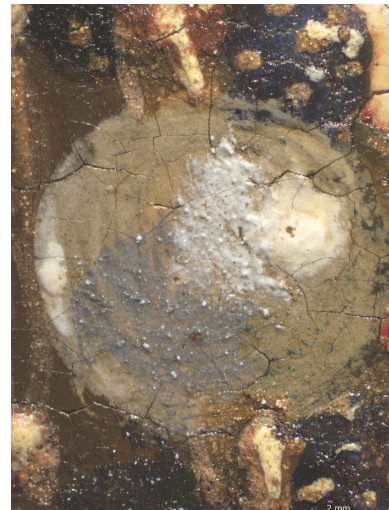


FIG. 12 NG 296, photomicrograph of retouchings on a pearl.

both lay over the older dark blue restoration (FIG. 13). The pigment from this area of pre-Molteni retouching has been identified as Prussian blue, of the coarser particle type which results from eighteenth-century methods of manufacture rather than the very fine particles formed in later processes.<sup>59</sup> Ironically, in this particular area, all three layers of restoration were found to be covering undamaged original paint. The removal of this hardened eighteenth-century oil paint from the delicate original surface was a slow and laborious process, carried out with scalpels under the magnification of a stereo-binocular microscope.

The elimination of the residues of all the previous restorations was essential in order to execute a new restoration that replicated the luminosity, economy and refinement of the original painting technique, above all for the flesh (FIGS 14–16). As the previous restorers had discovered, any retouching that masked the darkened eighteenth-century restoration was inevitably too thick and heavy to match the original colours. Such a match could only be achieved by using the thinnest of layers of translucent retouching applied over a light-reflecting surface – arguably more challenging to a restorer than the reconstruction of a missing area such as the upper left corner, where the pattern could quite easily be recreated by reversing a tracing of the better-preserved right side.<sup>60</sup> Other losses were all relatively small, although fairly extensive retouching was necessary to

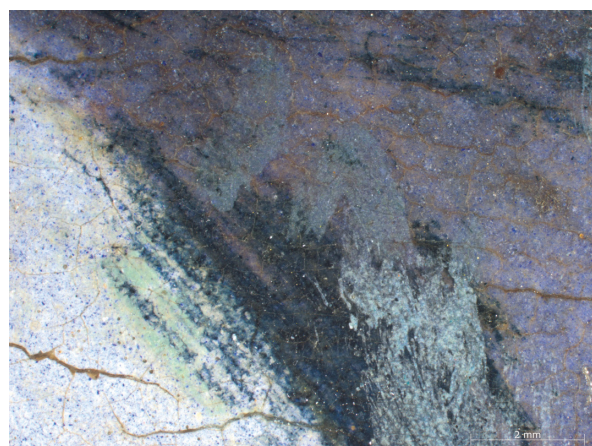


FIG. 13 NG 296, photomicrograph of three layers of retouching on the Virgin's mantle. The original paint was found to be undamaged.

reduce the abrupt transitions in the modelling of some of the folds of the Virgin's mantle caused by abrasion of the blue paint, probably the result of an earlier attempt to remove the Prussian blue overpaint.

A particular dilemma was presented by the contrasting condition of the haloes of the Virgin and angels. That of the angel on the left is well preserved, with only slight damage to the fine dots of gold leaf, which still stand out in front of the bushes on the slope behind. The other angel's halo is more worn, and so a few tiny points of new gold leaf have been added, always where traces of the thin yellow-brown mordant were





FIG. 14 NG 296, after cleaning, before restoration.

visible, and mainly in the area where the halo goes over the rock structure, with the aim of achieving some separation between the figure and the landscape. The Virgin, however, appeared at first sight to be without a halo, in common with the Christ Child, although in this latter instance the omission can be explained by the closeness of his head to that of the angel supporting him. Yet an ellipse incised into the paint and ground above the Virgin's head indicates that a halo was

planned, and under magnification a few dots of gold leaf can be seen to have survived where they were covered by strokes of paint from the fur trim of the curtains (FIG. 17). In the illustration, photographed during the cleaning, the bright gleam of the original mordant gilding of the dots can easily be distinguished from the duller gold paint of the remains of the halo added by Molteni, which went in front of the curtain. It was decided that a few flecks of new gold leaf should be





FIG. 15 NG 296, detail after cleaning, before restoration.



FIG. 16 NG 296, detail after cleaning and restoration.

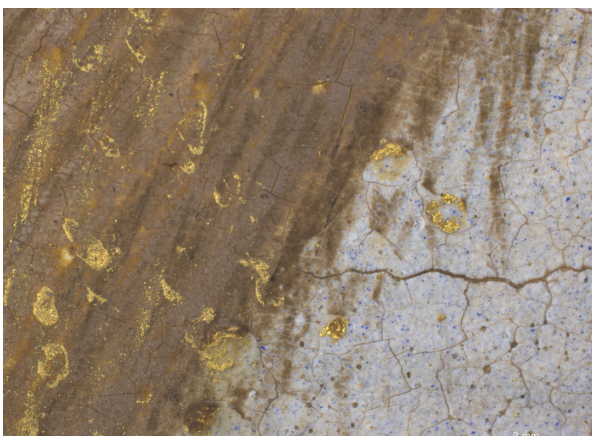


FIG. 17 NG 296, photomicrograph of the Virgin's halo during cleaning, showing traces of the original gilded dots and those added by Molteni in 1857–8.

added to the Virgin's halo, again as far as possible over the microscopically small traces of the original mordant. These catch the incident light, alerting the questioning viewer to the existence of the halo, which must always have sparkled discreetly since it is set against the pale blue of the sky.<sup>61</sup>

### *Gilding techniques*

*The Virgin and Child with Two Angels* (FIG. 18) depicts jewels and textiles that in reality would have cost huge sums. Fur-lined curtains of expensive red silk, woven with threads of gold, reveal the Virgin and angels dressed in other rich fabrics, with ornate trimmings and precious metal brooches set with jewels and pearls. Unusual virtuosity is evident in the employment of four different techniques for the representation of gold. It may be significant in this context that Verrocchio, in common with several of his Florentine contemporaries, not only received his initial artistic training as a goldsmith, but actually attempted to pursue this trade for a while.<sup>62</sup>

The cloth-of-gold textiles of the dark green lining of the Virgin's mantle and her lilac outer sleeves (FIGS 19 and 20) are represented entirely in paint, in imitation of the technique used to represent textiles in the Netherlandish paintings which were creating such a sensation in Florence in the 1460s and 1470s.<sup>63</sup> Even though the traditional Florentine egg tempera medium was retained, the highlighting of the gold threads with lead-tin yellow exhibits the precision and understanding of the light effects to be seen in the best Northern





FIG. 18 Andrea del Verrocchio and assistant (Lorenzo di Credi), *The Virgin and Child with Two Angels* (NG 296), c. 1476–8, after cleaning and restoration. Tempera on wood, 96.5 × 70.5 cm.





FIG. 19 NG 296, photomicrograph of the lining of the Virgin's mantle.



FIG. 20 NG 296, photomicrograph of the Virgin's sleeve.



FIG. 21 NG 296, photomicrograph of the halo of the angel on the left.

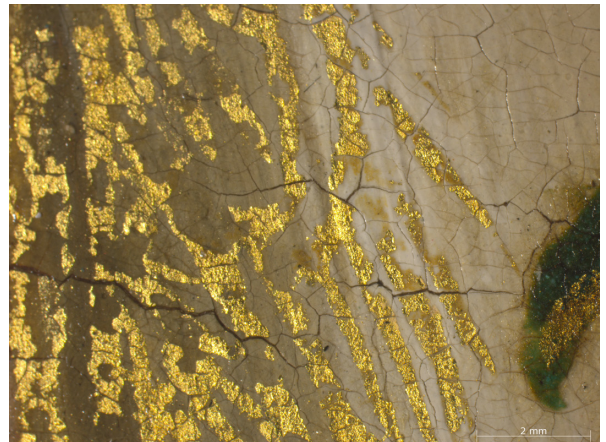


FIG. 22 NG 296, photomicrograph of the gold fringe of the sleeve of the angel on the left.



FIG. 23 NG 296, photomicrograph of the border of the Virgin's mantle.



FIG. 24 NG 296, photomicrograph of the collar of the angel on the left.



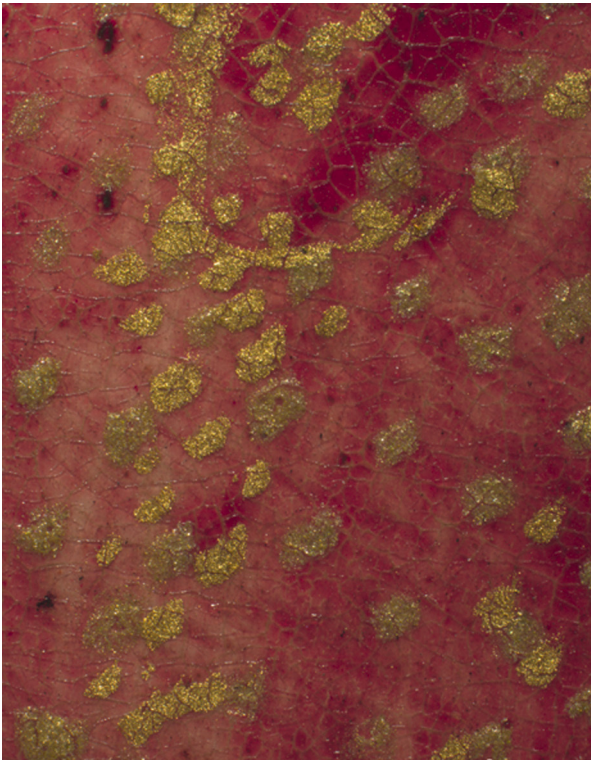


FIG. 25 NG 296, photomicrograph of the sleeve of the angel on the left.

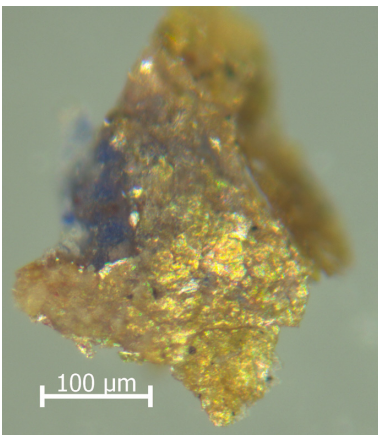


FIG. 26 NG 296, unmounted sample of mosaic gold from the wings of the angel on the right photographed in normal light.

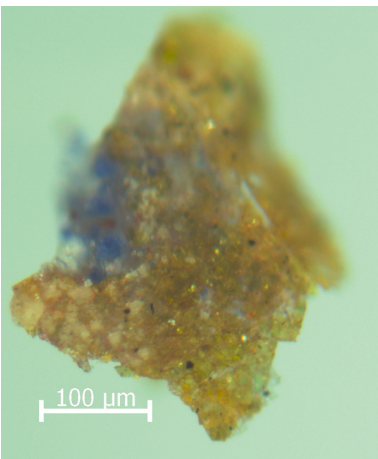


FIG. 27 NG 296, unmounted sample of mosaic gold from the wings of the angel on the right photographed in polarised light, showing that the particles seen in FIG. 26 are not in fact metallic.

examples executed in oil. The curtains are painted with the same technique, albeit with less refinement, in part perhaps because they are imagined as further forward, with the pattern consequently on a larger scale.

In the haloes (FIG. 21), however, and for a few other details – the star on the Virgin’s mantle and, most strikingly, the gilded fringe at the junction between the right sleeve and tunic of the angel on the left (FIG. 22) – real gold leaf was applied to a mordant (too insubstantial for samples to be taken for identification of the materials).<sup>64</sup> Further mordant gilding appears on the leaves and stem of his lily, but it appears less bright as a result of scattering of light by the coarse particles of green malachite beneath. The absence of any bright mordant gilt fringe around the top of the angel’s other sleeve, further back in the imagined space, confirms that the reflective properties of gold leaf, with its propensity to draw attention to the picture surface, were being carefully managed. This would explain why much of the decoration of the borders of the robes (FIG. 23), the collar (FIG. 24) and the fluttering ribbon of the angel on the left and the feathers of the one on the right were executed not with real gold, but with the more muted mosaic gold, what Cennino Cennini called ‘porporina’.<sup>65</sup>

Actually tin sulphide, mosaic gold was widely used in manuscript illumination, often in conjunction with real gold, which suggests that it was chosen more for its subdued shimmer than as a cheap substitute for the costly metal.<sup>66</sup> It has only rarely been found on panel paintings, most of them from northern Italy, and in particular from Ferrara, where the identification of mosaic gold on works by Cosimo Tura, Francesco del Cossa and Ercole de’ Roberti, all working for the ducal court, confirms that it cannot have been regarded as a low-grade material.<sup>67</sup> The mosaic gold on *The Virgin and Child with Two Angels* is the first example to be discovered on a Florentine painting in the National Gallery, and indeed it seems that no other instance has been reported at the time of writing.<sup>68</sup> It is not surprising, perhaps, that it should appear on a product of the Verrocchio shop, which worked in a wide range of media, and which undertook commissions for the Medici – operating, therefore, in a way similar to those of the north Italian court artists.

Mosaic gold is generally easily recognised under magnification by its characteristic glistening platelets and, unlike real gold, when a sample is viewed under a

polarised light source, the particles are no longer reflective (FIGS 26 and 27). Its colour and sparkle vary according to the hue of the paint layer beneath. Indeed, on the embroidered ribbon wound over the left angel's shoulder and arms, the mosaic gold appears to be mixed with the dull ochre which is also used as the base colour. Its shimmer still appears muted over the purple of his collar (FIG. 24), but painted over the lighter blue of the edge of the Virgin's mantle (FIG. 23) it appears brighter, yet in both the presence of mosaic gold has been confirmed by analysis.<sup>69</sup> In the latter instance, it is possible, however, that some (real) shell gold may have been added to increase the sparkle of the mosaic gold. Certainly this was the case on the spotted red sleeves of the angel on the left (FIG. 25); here the dots are all executed with mosaic gold, but, where the light catches the edges of the folds, touches of brighter shell gold were applied over the mosaic gold,<sup>70</sup> an exquisite effect that enhances the roundness of the arms and sleeves. More shell gold was used to pick out the delicate wisps of the left angel's hair, which cross in front of the gilded dots of the halo.

### *Painting techniques*

The command of volume and structure in the less damaged parts of the Virgin's blue cloak is notable, especially in the heavy folds across her knees and in the shadowed area on the left (FIG. 28). The deepest folds were shaded over the mid-blue tone with long hatched, and occasionally cross-hatched, strokes using pure lapis lazuli. This has resulted in some darkening and discoloration of the paint. The greenish tinge of some of the cast shadows might lead one to suppose that the greener blue pigment azurite had been used in these areas, but analysis of a sample has confirmed that ultramarine was employed throughout.<sup>71</sup> In addition, all the blue paint appears very light in infrared (see FIG. 35), confirmation that there is no azurite or black pigment in the shadows. All the colour areas sampled for identification of the paint medium were found to contain egg tempera alone,<sup>72</sup> and the pigments identified are all typical of Florentine painting of the later fifteenth century.<sup>73</sup> This is not the work of a painter who was interested in novel pigment mixtures and juxtapositions of colour. The expensive lapis was also used with



FIG. 28 NG 296, detail of the Virgin's blue drapery, showing the hatched shading.

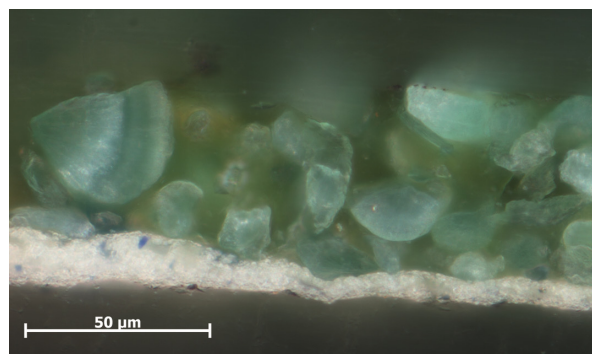


FIG. 29 NG 296, paint cross-section from the green tunic of the angel on the right, showing a green paint layer containing a copper mineral pigment, mostly malachite, over a thin pale blue layer of lead white with a little ultramarine. The sample was taken where the green paint slightly overlaps the angel's blue sleeve. The gesso layer is missing from the sample.

red lake and white in the lilac shades of the wings of the angels,<sup>74</sup> as well as the Virgin's sleeves and the infant Christ's drapery; here some fading of the red lake component – sourced from kermes, the most costly of the red dyestuffs<sup>75</sup> – has certainly occurred. There is also likely to have been some fading of the red lake where it has been applied in short hatched strokes over a white underlayer to model the fine folds of the Virgin's dress. Nevertheless, the general effect, including the shadows cast by her hands and the Christ Child's raised arm,





FIG. 30 NG 296, detail of the angel on the left, after restoration.

remains striking. The red sleeves of the angel on the left are brighter and more opaque as a result of the admixture of some vermilion to the red lake and lead white, while the lining of the cloak of the angel on the right has been painted with vermilion shaded with red lake. Where the vermilion is not protected by the red lake, there has been some blackening of the pigment.<sup>76</sup>

The dark green lining of the Virgin's cloak and the tunic of the angel on the right both contain malachite,<sup>77</sup> coarsely ground in order to retain the colour of the mineral (FIG. 29). Malachite and related green mineral pigments were still widely used in Florence at this date;<sup>78</sup> originally relatively light and cool in colour, the paints have almost invariably darkened as a result of

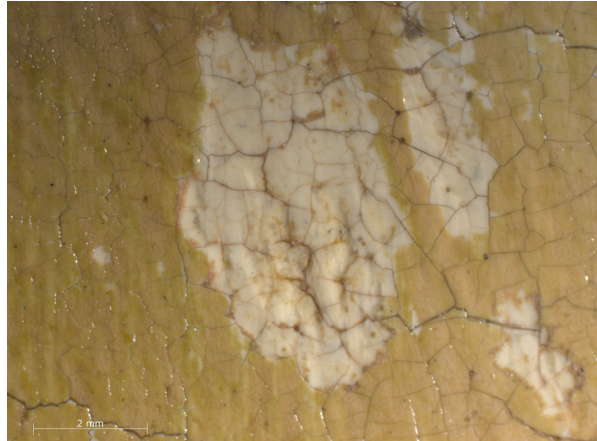


FIG. 31 NG 296, photomicrograph of the Virgin's neck, before restoration, showing the lead white underlayer.



FIG. 32 NG 296, photomicrograph of the mouth of the angel on the left.

discoloration of the egg medium surrounding the pigment particles. In the case of *The Virgin and Child with Two Angels*, therefore, the tonality of the green areas must once have accorded with the brighter blues and reds in the painting. The only other pigments present are yellow and brown earths, a black pigment, lead white and the lead-tin yellow used to highlight the golden threads. The variety of warm and cool greys in the angel's tunic on the left has been achieved not through complex pigment mixtures but by working with thin scumbles of dilute tempera over a yellow-brown undermodelling, probably a mixture of yellow earth, lead white and a little black, which registers in infrared images.<sup>79</sup>



A similar mixture was used with great delicacy to model the shadowed areas of the flesh of the figures (FIG. 30), but instead of the traditional pale green underlayer of green earth and lead white, there is a layer of lead white alone (FIG. 31).<sup>80</sup> Even though the products of Verrocchio's workshop consistently demonstrate a high level of execution, the command of the tempera medium and the economy with which the forms are modelled in some of the areas of flesh in the National Gallery panel is quite exceptional. Details such as a mouth are constructed from a few liquid strokes of translucent colour (FIG. 32), while the internal modelling and structure of a hand is suggested by the slightest and subtlest modulation of pink, white and yellow, the paint applied in the thinnest of layers, making most other tempera paintings seem almost laborious.

### *Finding Verrocchio*

Exactly this economy of technique and total command of form, inclusive of contour and volume, can be found in some of the superb drawings of heads that are universally agreed to be Verrocchio's. Two of these – the most beautiful of all, the Christ Church *Head of a Young Woman* (FIG. 33)<sup>81</sup> and the Berlin *Head of a Youth looking Upwards* (FIG. 34),<sup>82</sup> both of which can be dated to the mid to late 1470s – are particularly close stylistically and, despite the different media, also technically to parts of *The Virgin and Child with Two Angels*. The Christ Church drawing appears at first sight to be elaborate and highly worked, yet the complex structure of the woman's dressed hair is actually described with rapid, confident lines of black chalk, while, for the shading of her temple and the curves of her cheek, the chalk is smudged and softened, the gradations of tone perfectly controlled. The *Head of a Youth* is even more directly comparable to the National Gallery picture, especially to the angel on the left. Though seen from different sides, both heads demonstrate total mastery of this especially difficult pose with its foreshortened upward gaze, including the correct placement of the further eye and convincing rendition of the structure of the nose. The description of the fall of light on the tilted jaw, including the reflected light on the underside, is also strikingly similar in both drawing and painting.

The scale of the heads in both these drawings is



FIG. 33 Andrea del Verrocchio, *Head of a Young Woman*, c. 1476–8. Black chalk (or charcoal?), grey wash on paper, pricked, 40.8 × 32.7 cm. Oxford, Christ Church Picture Gallery.



FIG. 34 Andrea del Verrocchio, *Head of a Youth looking Upwards*, c. 1476–8. Black chalk (or charcoal?) with white heightening on paper, pricked, 18.4 × 15.5 cm. Berlin, Kupferstichkabinett, Staatliche Museen zu Berlin-Preussischer Kulturbesitz, Inv. 5095.





FIG. 35 NG 296, digital infrared reflectogram, after cleaning and restoration.



FIG. 36 NG 296, detail of digital infrared reflectogram.

relatively large, and indeed very close to that of the heads in the National Gallery painting. Both drawings have also been pricked for transfer. It is not surprising, therefore, to find that an infrared reflectogram of the painting (FIGS 35 and 36) shows that the outlines of all the heads and hands, and the limbs of the Christ Child, have been transferred to the surface of the panel by means of pricked cartoons. As always, the pounce dots

can be difficult to detect – in the detail illustrated they are best seen on the eyelids and brow of the angel. The rest of the composition, however, was sketched onto the panel freehand, with the drawing, all executed with a brush and a liquid medium, serving only as a rough guide for painting. Drawn drapery folds seldom coincide with the painted ones, and there are several other differences between the underdrawing and the painting,





FIG. 37 NG 296, detail of the angel on the left.



FIG. 38 Detail of fig. 39 showing hands.

for example the raising of the sash beneath the Virgin's breasts, so as to emphasise her belly (and her womb) and increase the sense of the image being viewed from below. The haloes of the Virgin and the angel on the left were indicated with wider ellipses. Reference must have been made to drapery studies: the folds across the Virgin's knees are reminiscent of the highly elaborated drawings (particularly associated with the Verrocchio

workshop) of fabric dipped in liquid plaster and allowed to set.<sup>83</sup>

The set of drawings made specifically for the painting must have included not only the heads (probably very like the Berlin *Head of a Youth* in their technique), but also the hands, some of which may have been studied from plaster casts or other sculpted models. The beauty of these lost drawings for the hands can only be





FIG. 39 Andrea del Verrocchio, *Lady with Flowers*, c. 1475. Marble, height 61 cm. Florence, Museo Nazionale del Bargello.



FIG. 40 Andrea del Verrocchio, figure of Christ, detail from Niccolo Forteguerra's monument. Marble. Pistoia, Duomo.

imagined, but the painted versions (FIG. 37) can be usefully compared with the hands in one of Verrocchio's most celebrated sculptures, the marble bust of a *Lady with Flowers* in the Bargello, Florence (FIGS 38 and 39).<sup>84</sup> Not only do the hands share the same elegant proportions, slightly flattened backs, shapely fingers and curved and unusually pointed thumbs, but when the sculpture is viewed in certain lighting conditions (not those in which it is commonly photographed) the structure of the face shows strong similarities with that of the Virgin in the painting, especially in that difficult area where the curve of the cheek meets the upper lip and the base of the nose. Smaller details are also comparable, for instance the curly fringes at the ends of the Virgin's veil and the fine scarf carried by the lady. It is even possible to see something of the opalescence of polished white marble in the luminosity and smooth transitions of the flesh tints in the painting.

The *Lady with Flowers* is generally dated on grounds of style and costume to about 1475. Another, slightly later, marble sculpture can also be compared with the



FIG. 41 Andrea del Verrocchio, *Bozzetto* for the Forteguerra monument, 1476. Terracotta, 44.6 × 31.8 cm. London, Victoria and Albert Museum, Inv. 7599–1861.





FIG. 42 NG 296, detail of the angel on the left.

National Gallery panel: the figure of Christ from the Forteguerra Monument in Pistoia (FIG. 40), one of the few figures from this ambitious project that Verrocchio almost certainly carved himself in the later 1470s.<sup>85</sup> In both this and the small terracotta *bozzetto* made for the monument in 1476–7, now in the Victoria and Albert Museum, London (FIG. 41),<sup>86</sup> Christ's draperies form sharp triangular folds with scooped-out indentations where they are bunched above his waist, just as in the tunic of the angel on the left in the National Gallery painting. These connections, and also those with the Christchurch and Berlin drawings, all point to a similar date of around 1475–6 for *The Virgin and Child with Two Angels*. This is later than the date often assigned to it, and it becomes particularly significant when explaining certain less successful aspects of the work as a whole.

#### *Evidence for a collaborator*

While it is widely accepted that many great medieval and Renaissance paintings were made with some degree of workshop participation, there is a widely held assumption that the most important figures were usually painted by the master at the head of the workshop. It has not, therefore, been observed previously that prominent parts of *The Virgin and Child with Two Angels* do not attain the level of distinction apparent in the figures of the Virgin and the angel on the left – indeed the disparity, even if not hitherto clarified, may have caused previous reluctance to identify Verrocchio's hand in any part of the picture.<sup>87</sup> This diminution of quality is not, however, marked by any loss of competence in the handling of the painting materials; nor is



FIG. 43 NG 296, detail of the angel on the right.

there any real difference in technique. The underdrawing, pigments, paint structure and the refined handling of the tempera medium remain consistent.

However, when comparisons between details are made (FIGS 42 and 43), it becomes clear that a second painter must be involved. The hand of the angel on the right, who supports the Christ Child, lacks the superb understanding of the underlying anatomy, let alone the expressive elegance, of the hands of the angel on the left. Instead the fingers seem flaccid and boneless and there is little sense of the structure of the wrist and back of the hand. Moreover, the limited tonal range of Verrocchio's modelling of flesh, so effective in indicating volume, has been extended very slightly by this painter. The pigments for the flesh tints and the hatched strokes of the tempera are very similar, but the shadowed parts appear fractionally darker, and there is a tendency to add brown contour lines for emphasis. The greater contrast with the lighter parts of the flesh painting, an effect more apparent on the body of the Child, results in a shiny, almost polished surface, clearly an attempt to imitate the

luminous quality of the figures by Verrocchio, as well as to suggest the volume of the plump limbs of a baby.

This painter, moreover, does not think sculpturally in the way that was natural for Verrocchio, a difference that extends even to the painting of small-scale details such as eyes (FIGS 44 and 45). The eye of the angel on the left exhibits Verrocchio's usual economy of technique, and the placement of the catchlights – the dense one on the iris but also those over the white part of the eye – describes brilliantly the glistening spherical surface of the eyeball. The light blue-grey eyes of the angel on the right are also beautifully painted, but the way that the fine brushstrokes for the white of the eye follow the circumference of the iris, instead of the eye as a whole, indicates a painter who thinks differently about form. The touches of pink at the inner corners are a naturalistic detail which may come from observation of Netherlandish painting. The eyelids seem slightly swollen, the skin thicker, and the modelling exaggerated in the same way as that of the limbs of the Christ Child.

Another indication that two hands were engaged in





FIG. 44 NG 296, photomicrograph of the eye of the angel on the left.

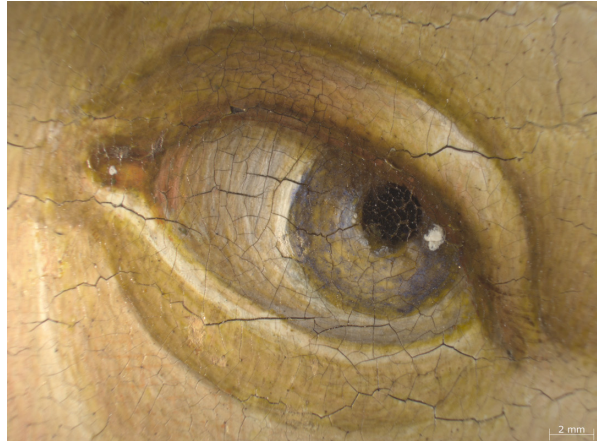


FIG. 45 NG 296, photomicrograph of the eye of the angel on the right.

the execution of *The Virgin and Child with Two Angels* is the differing degrees to which the heads of the angels are integrated with the landscapes behind them (FIGS 47 and 48). The dark green paint of the slope on the left follows precisely the contour of the angel's head and also his wings, and there is a consistency in the sequence of paint application, starting with the base layers of green for the landscape and yellow earth for the hair, followed by details such as the trees and bushes, then the gilded dots of the halo, the tendrils of the angel's hair and finally the spray of lilies. On the right, however, the paint of the landscape – including the rocky outcrop which has clearly been added over the fields and river valley – peters out around the head of the angel, as though it was being applied up to an approximate area that was to be left in reserve. When the angel was painted, his brown curls only just filled the reserved area, leaving very thin areas of landscape paint that have been slightly damaged in a past cleaning. The effect was therefore best seen before the recent restoration. The paint of the landscape also extends under most of this angel's wing, added almost as an afterthought; its little loops of mosaic gold decoration are no match for the glorious pink and purple feathers of the angel on the left.

Verrocchio himself, therefore, appears to have been responsible for the landscape. It is quickly and confidently painted, with the tempera applied with the delicacy of watercolour in the further distance (FIG. 46). It has been observed that its construction, with its rocky

outcrops and patchwork of small fields, and the unusual way of representing trees and bushes with rapid curved flicks of the brush, are strikingly similar to the landscape in the earliest firmly dated drawing by Leonardo, his *View of the Arno* of 1473 (FIG. 49).<sup>88</sup> Indeed it has even been suggested that Leonardo may have contributed the landscape in the National Gallery panel.<sup>89</sup> If the picture does date from as late as 1475 or 1476, however, a contribution by Leonardo would be highly unlikely, since by then his landscape style had developed considerably and he seems to have been fully committed to an oil technique. When he made his pen and ink sketch the young Leonardo perhaps based his style on that of his master.<sup>90</sup> Alternatively, Verrocchio seems always to have been open to new stimuli and was certainly prepared to learn from his gifted pupils.



FIG. 46 NG 296, photomicrograph of the landscape on the left.





FIG. 47 NG 296, detail of the angel's head and landscape on the left, after cleaning, before restoration.

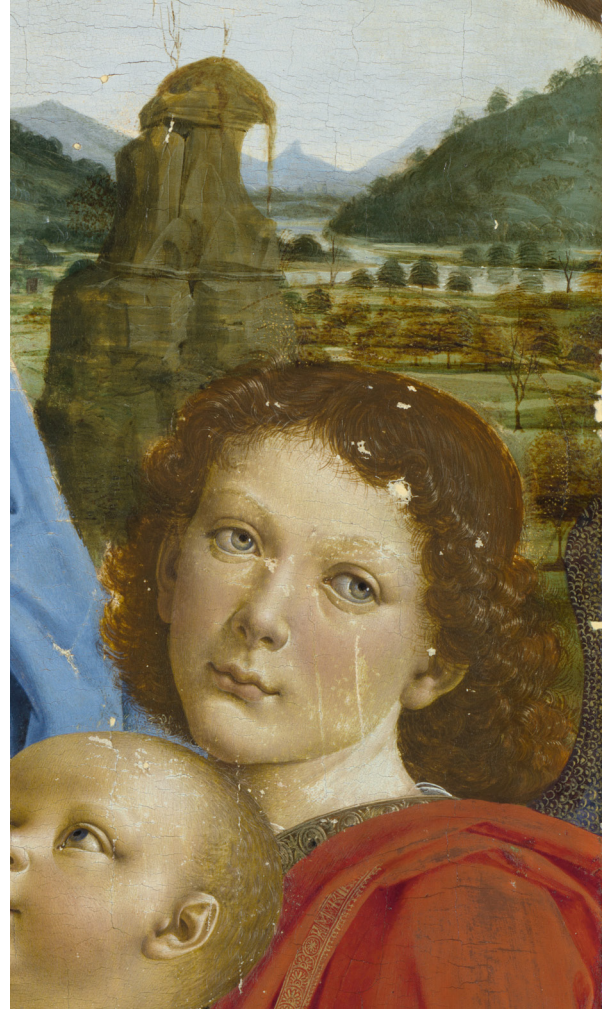


FIG. 48 NG 296, detail of the angel's head and landscape on the right, after cleaning, before restoration.

### *Lorenzo di Credi*

It is another of Verrocchio's precociously talented pupils who can be identified as his collaborator on *The Virgin and Child with Two Angels*: Lorenzo di Credi. His date of birth is uncertain, but it may have been as early as 1457;<sup>91</sup> if Vasari is to be believed (and there is no good reason to doubt him), Lorenzo was already in the workshop in about 1473, since he was there at the same time as the slightly older Leonardo and Perugino (both born in 1452).<sup>92</sup> Lorenzo di Credi had previously been apprenticed to a goldsmith, so the suggestion that he entered the *bottega* at the age of about sixteen or seventeen seems entirely credible. Certainly he was working there (very poorly remunerated) by 1480, and he was



FIG. 49 Leonardo da Vinci, *View of the Arno*, 1473. Pen and ink on paper, 19.4 × 28.6 cm. Florence, Gabinetto dei Disegni e delle Stampe, Galleria degli Uffizi.





FIG. 50 NG 296, detail.

to remain with Verrocchio until his master's death in 1488, running the Florence workshop while Verrocchio was in Venice, and eventually winding up his affairs, including overseeing the casting and completion of the great Colleoni monument in Venice. Even if Verrocchio was probably responsible for the innovative general design of the *Madonna di Piazza*, he was prepared to entrust the design of individual figures and the overall execution to Lorenzo, who may have been barely twenty years old.

As early as 1865, Crowe and Cavalcaselle, in attributing the whole of *The Virgin and Child with Two Angels* to Lorenzo di Credi, then a much-admired painter, wrote of the work: '... one of the fine productions of the Florentine school of this time is the Virgin adoring the infant which lies naked on her lap, between two angels . . . the ornament of our National Gallery. The artist's manner is akin to that which may be traced in the Baptism of Verrocchio. The stature and contours of the Virgin, the outlines of the head and hands are

more like those of Verrocchio than those of the Pollaiuoli. If one should be required to describe an infant by Lorenzo di Credi, he could not do so more appropriately than by sketching out this of the National gallery, an infant whose excessive plumpness of flesh, absence of neck and ponderosity of head, whose curves of outline are essentially an exaggeration of those in the sketches of Verrocchio and Leonardo.' Their description of the angels is coloured by their belief that the whole work was by Lorenzo, but they too noted the hand of the angel on the left, which 'though bony and slender, is designed with much finesse', and praised 'the cleanness and pureness of the gay colours', indicating to them 'the manner of Credi', before concluding that the style had its starting point in 'that of the bronze of S. Thomas at Orsanmichele',<sup>93</sup> on which Verrocchio appears to have worked from 1476 to 1479, when it was cast.<sup>94</sup> It is a pity that this last remark, with such important implications for the dating of the work, has subsequently been largely ignored.





FIG. 51 Lorenzo di Credi, *Study for an Infant Christ*, c. 1475–80. Black chalk, silverpoint heightened with white on prepared paper, drawn in pen and ink with touches of red chalk, 22.9 × 15.8 cm. Cambridge, Fitzwilliam Museum, Inv. 2930.



FIG. 52 Lorenzo di Credi, *Saint Donatus and Studies of Heads*, c. 1476–8. Metalpoint with white heightening (partly blackened), pen and brown ink and wash on pink prepared paper, 28.5 × 20.1 cm. Edinburgh, The National Gallery of Scotland, Inv. D642 recto.

An obstacle to recognition of Lorenzo's hand in the painting is that he is currently known primarily, indeed exclusively, as a highly skilful user of the oil medium, including, judging by its surface appearance, for the *Madonna di Piazza*.<sup>95</sup> Yet his high-key palette and the colour modelling techniques employed in his oil paintings are indicative of training in the conventions of tempera painting. He clearly had a considerable capacity to imitate not only his master but also his peers, leading to confusion between him and Leonardo in the attribution of some of their early production.<sup>96</sup> Under the control of his master, there is no reason why he should not have been able to handle egg tempera paints in a very similar way.

As with Verrocchio himself, comparison of details from the National Gallery painting with drawings attributed to Lorenzo is instructive. These also exhibit the technical mastery that he learnt in the workshop. The study of a baby's arm (FIG. 53) places the same emphasis on the rotundity of the limbs, with their creases of fat, as

in the painting, and the white heightening on the drawing (now disrupted by blackening of the lead white) produces a corresponding over-polished finish.<sup>97</sup> A delightful study of a child's head at the Fitzwilliam Museum, Cambridge (FIG. 51), though sometimes



FIG. 53 Lorenzo di Credi, *Baby's Arm*, probably 1480s. Metalpoint with grey-brown wash, heightened with white (partly blackened), on pale grey prepared paper, 11.9 × 11.4 cm. London, The British Museum, Inv. 1906.0124.1.





FIG. 54 Andrea del Verrocchio, *Sketch for Virgin and Child with Two Angels*, c. 1476. Metalpoint (?), with traces of red chalk on paper, 18.8 × 18.7 cm. Florence, Gabinetto dei Disegni e delle Stampe, Galleria degli Uffizi, inv. 445E.

attributed to Verrocchio himself, actually demonstrates Lorenzo's real accomplishment as a draughtsman, and confirms that it would be perfectly possible for him to have produced the very fine head of the angel on the right in the painting.<sup>98</sup> The similarities in the construction of the eyelids, and also the eyes with their pale irises, are striking.

The study for the figure of Saint Donatus in the *Madonna di Piazza* (FIG. 52) is also a fine drawing,<sup>99</sup> but it demonstrates one of Lorenzo's chief weaknesses; there is very little sense of the articulation of the body of the saint underneath the swathes of drapery. Exactly the same problem affects the angel on the right in *The Virgin and Child with Two Angels*. The figure, squeezed into the admittedly small space left for him, is made up of disparate elements: a head which is out of scale with that of the other angel, given that he is supposed to be further back in the composition, a body without back and shoulders, and a disjointed arm supporting the Child. His right arm is missing entirely. This awkwardly additive construction is somewhat ineffectively disguised by the scarlet cloak flung back over his shoulder, a device, probably separately studied, which had become something of a cliché in the Verrocchio workshop,<sup>100</sup> appearing also in the drawing for Saint Donatus. The motif was to have a long afterlife in the oeuvre of Lorenzo di Credi.<sup>101</sup>

In contrast, the two figures that can be ascribed to Verrocchio himself seem to exist in three dimensions; their volume is convincing, with real spaces – reinforced by use of cast shadows – created between the Virgin's praying hands and her body, or described by the supremely elegant gesture of the angel's left hand. It would seem, therefore, that Lorenzo was not only responsible for painting his part of the panel – that is, the wedge-shaped area comprising the Christ Child and the angel who supports him – but that he was also entrusted with the design of these elements.

### *Master and pupil*

It is rather difficult to reconstruct the mechanics of this collaboration. The very first stage is probably represented by the rapid metalpoint sketch by Verrocchio in the Uffizi (FIG. 54) which has correctly been associated with the National Gallery panel.<sup>102</sup> The angel on the right holds up the Christ Child, but in a pose reminiscent of the angels supporting the mandorla in the *modello* for the Forteguerrri monument (FIG. 41), further evidence for a similar date for the painting. The pose of the Virgin is the same, but she becomes grander and more formal, and the angel on the left has no wings and does not carry a lily. The design was probably developed a little further before Verrocchio and Lorenzo di Credi began their work (not seemingly terribly well-coordinated), on the cartoons for the heads and hands and studies for other details such as the lily.<sup>103</sup> It may seem strange that the less experienced painter was assigned the infant Christ, but perhaps this was because the figure could be developed from extant drawings by Verrocchio. On the evidence of the final painted Christ, little remains, however, of the lively depiction of real children that characterises Verrocchio's own drawings and sculptures. It is therefore easy to believe that this baby was studied at second hand, or perhaps developed more independently, allowing Lorenzo to introduce quirks such as the turned-up toes which appear in his later works (and which were probably taken from Netherlandish examples) and to give the Child a notably more Leonardesque caste (consistent with Lorenzo's known esteem for his fellow pupil). By the time Lorenzi di Credi painted the National Gallery *Virgin and Child* (NG 593), probably in the mid 1480s, these traits had become still more exaggerated.<sup>104</sup>

The transfer of the pricked cartoons to the painting surface cannot have been carried out without some light freehand underdrawing to locate the heads and hands. This was presumably executed by Verrocchio, and in a few areas on the infrared reflectogram faint and sketchy lines can be detected which may relate to this preliminary process. The right contour of the Virgin's neck has the careful character of a line linking pounced dots, but well inside this is another, fainter line, perhaps part of the first placement of the figure. A fine diagonal line ending in a pothook appears among the underdrawn folds of fabric below the Virgin's girdle, but running in a contrary direction. More lightly drawn lines occur across the Virgin's knees, later reinforced with the heavy marks which are so evident in the reflectogram (FIG. 35).

In the angle formed by the Child's feet and the sleeve of the angel on the left, there are two fine curved lines. These may represent a first plan for the location of the Child's heels. Had the cartoon for the Child been similarly positioned on the panel, then both his feet would have been well behind the angel's arm, avoiding the juxtaposition which is one of the less happy features of the final design. If, however, the cartoon had been raised, then the Child might have been even less convincingly seated on his mother's lap (a problem which is partially resolved when the painting is viewed from below, as would originally have been the case). Another alternative might have been to tilt the Child slightly back, but then the collision with the head of the angel would have been more marked. In Lorenzo's part of *The Virgin and Child with Two Angels* the disadvantages of assembling a composition from what have been termed 'single element cartoons' become all too uncomfortably apparent.<sup>105</sup>

Verrocchio's cartoons, on the other hand, are perfectly integrated with the bodies of their respective figures, and must surely have been transferred to the panel first, leaving a space for the pupil to add his contribution. Verrocchio was probably also responsible for the emphatic indications of folds on the Virgin's mantle, while the bold and free brush drawing of the angel's tunic approaches that of the earlier National Gallery panel, now attributed to him, also showing *The Virgin and Child with Two Angels* and datable to the mid to late 1460s.<sup>106</sup> Lorenzo di Credi seems to have tried to imitate this freedom in the rather chaotic bubbles of the curls

belonging to his angel. The spiralling locks of the angel on the left (FIG. 36), on the other hand, are truly sculptural in their underdrawn form, more so indeed than the soft springy hair in the final painting.

This division between master and assistant was evidently retained in the application of the paint layers, with each bringing their allotted zones to completion, including even the various forms of gilded decoration, usually the last stage in the execution of a painting. The simplified pattern and pseudo-kufic script on the drapery of Lorenzo's angel on the right, not to mention the wings, does not measure up to the extraordinary quality of the gold (and 'gold') ornamentation of the other angel. While Verrocchio always took the lead, it appears that to some extent the two painters must have alternated their sessions of work on the panel, which was not quite large enough for them to work side by side. Essentially, Verrocchio painted most of the Virgin and left-hand angel, together with the landscape, before Lorenzo stepped in. He must also have brushed in the sky; this paint extends slightly under the curtains, which were almost certainly delegated to his assistant. He surely also took the decision to extend the turned-back lining of the Virgin's mantle (the original underdrawn folds of the outer side are visible in the infrared reflectogram), perhaps to make the Child sit better on his mother's lap. Subsequently the lower edge of the Child's loincloth was brought back over the green lining, to some extent negating the previous alteration. Further adjustments were made to the Virgin's blue mantle in the problematic area between the top of the Child's head and the hair and chin of the angel, contradicting the logical construction of the folds over her left arm.

These less satisfactory consequences of the collaboration between Verrocchio and Lorenzo di Credi raise questions as to how the finished painting – evidently an expensive commission – might have been received by its patron, and how much importance was attached to whether a painting was the product of a single hand, preferably that of the master.<sup>107</sup> Seemingly the most unusual aspect of this relationship, the assignment to the assistant of a distinct – figurative – part of the painting, for which he was apparently responsible at every stage, might be partly explained by the fact that Verrocchio remained primarily a sculptor. Large sculptural projects inevitably called for participation by



assistants, who could be involved at every stage, but to whom might also be delegated whole figures. Indeed, for ensembles that included pairs of flanking angels, such as tomb monuments or tabernacles, there seems to have been something of a tradition in Florence for one angel to be executed by the master sculptor, the other by the most senior and talented assistant.<sup>108</sup>

However, *The Virgin and Child with Two Angels* also illuminates another aspect of Verrocchio's career: his generosity as a teacher. Confirmation that it was his practice to entrust to his best pupils whole figures in works on which he was engaged is supplied by the recognition that, when producing the exquisite *modello*

of the standard – very likely for Lorenzo de' Medici's *giostra* of 1475 (FIG. 58) – he himself drew the sleeping nymph while asking Leonardo to contribute the cupid and the already characteristic swirling plant forms.<sup>109</sup> Examination of the drawing shows that Verrocchio first drew his figure, sketching lightly in metal point the complete outline of the nymph's right forearm, but when he came to reinforce the contours in ink he left a gap so that Leonardo could insert the cupid's outstretched arm. Verrocchio took precisely this approach to the shared execution of the National Gallery panel.



FIG. 55 Andrea del Verrocchio and Leonardo da Vinci, *Sleeping Nymph and a Cupid*, 1475. Metalpoint, black chalk and brown ink on paper, 14.8 × 25.9 cm. Florence, Galleria degli Uffizi, Gabinetto Disegno e Stampe, inv. 212E.

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We have benefited greatly from discussions in front of *The Virgin and Child with Two Angels* with the many scholars of Florentine painting, sculpture and drawing who visited the Conservation Department while it was undergoing treatment, as well as with members of the audience at the Institute of Fine Arts in New York when this research was presented by Jill Dunkerton as the Samuel H. Kress Lecture. While they may not all necessarily agree with our conclusions, we would particularly like to thank Denise Allen, Carmen Bambach, Roberta Bartoli, Andrea Bayer, Andrew Butterfield, Alessandro Cecchi, Hugo Chapman, Keith Christiansen, Caroline Elam, Everett Fahy, Marzia Faietti, Chris Fischer, Cecilia Frosinini, Jane Martineau, Peta Motture, Christina Nielsen, Nicholas Penny, Neville Rowley, Patricia Rubin, Carl Strehlke, Kathleen Weil-Garris Brandt, Alison Wright and Patrizia Zambrano. We are particularly grateful to Alison Wright for her helpful comments on the text and to Babette Hartweg, Franziska Hourriere, Antonio Natali, Dominique Thiébaud, Stefan Weppelmann and Aidan Weston-Lewis for making available to us for close study those paintings in their collections that are by or are closely associated with Verrocchio. Roberto Bellucci, Martin Clayton, Lisa Monnas and Nancy Turner also supplied useful information. At the National Gallery, Scott Nethersole carried out preliminary research into the provenance in the Volterra archives, Rachel Billinge made the infrared reflectograms, David Peggie and Rachel Morrison analysed the paint media, Jo Kirby the dyestuffs, and Marika Spring investigated the inorganic materials. Rachel Billinge and Marika Spring also very kindly read and commented on the text.

## Notes

- 1 The Carreggi *Resurrection* relief (Bargello, Florence) is sometimes thought, for example, to be his earliest surviving work, sometimes dated as late as c. 1480. Attributional disputes are focused principally on two marble pieces. For the Frick bust of a young woman, ex-Dreyfus collection, see D.A. Covi, *Andrea del Verrocchio: Life and Work*, Florence 2005, pp. 60–3 (with full bibliography). Widely (though not unanimously) accepted as autograph, its display in Washington (see E. Luciano in D.A. Brown (ed.), *Virtue and Beauty: Leonardo's Ginevra de' Benci and Renaissance Portraits of Woman*, exh. cat., National Gallery of Art, Washington 2001, pp. 162–8, cat. 22–3) allowed direct comparison with the infinitely superior Bargello bust of a *Lady with Flowers* (see below) for the first time, fostering doubt in some quarters as to the Frick bust's correct attribution and indeed its authenticity. We are grateful to Denise Allen for the opportunity to re-examine the bust in the Frick's conservation studio in March 2010, when these worries were reinforced. There is a certain feebleness of the anatomy, particularly of the neck and upper chest, seeming anachronisms in the costume and hairdressing, and often rather crude carving of ornament and textiles, which indicate that, if this bust is indeed fifteenth-century – surely open to question – it was not carved by Verrocchio, even at the beginning of his career. The relief 'portrait' of Alexander the Great, at the National Gallery of Art in Washington, is more regularly assigned to the workshop, though its autograph status has recently been championed by D.A. Brown (*Leonardo da Vinci: Origins of a Genius*, New Haven and London 1998, pp. 70–2, as possibly assisted by Leonardo) and again by Covi 2005, pp. 138–42 (with full earlier bibliography). Though the piece is admittedly uneven, on seeing it again displayed in Atlanta in December 2009, we would agree with Andrew Butterfield's assessment of the work as a shop product. See A. Butterfield, *The Sculptures of Andrea del Verrocchio*, New Haven and London 1997, pp. 230–2, cat. 25.
- 2 Butterfield 1997 (cited in note 1), pp. 34–44, 205–7; Covi 2005 (cited in note 1), pp. 38–45.
- 3 This is not the place to cite the very ample bibliography dedicated to this subject. Most earlier views are summarised by Covi 2005 (cited in note 1), pp. 173–214.
- 4 'E in questa opera aiutandogli Lionardo da Vinci, allora giovanetto e suo discepolo, vi colori un Angelo di sua mano, il quale era molto meglio che l'altre cose; il che fu cagione che Andrea si risolvette a non volere toccare più pennelli, poichè Lionardo così giovanetto in quell'arte si era portato molto meglio di lui'. G. Vasari (ed. P. Barocchi), *Le vite de più eccellenti pittori, scultori e architettori*, Verona 1971, III, p. 539. This story of Andrea's decision to renounce painting was added for the 1568 edition and it is unlikely to be completely true. It may, however, be the case that Verrocchio did stop painting in the late 1470s, a date that does approximately coincide with the reworking of the *Baptism* by Leonardo, no longer of course an apprentice.
- 5 See A. Natali, *Leonardo: Il giardino di delizie*, Milan 2002, pp. 15–24. When Leonardo was accused of sodomy in April 1476, he is recorded as 'Lionardo di ser Piero da Vinci, sta con Andrea del Verrocchio' and in Latin in June that year, when charges were dropped, 'Leonardo ser Pieri de Vincio manet cun Andrea del Verrocchio'. See E. Villata (ed.), *Leonardo da Vinci. I documenti e testimonianze contemporanee*, Milan 1999, pp. 8–9, doc. 7–8. There is a clue as to how senior assistants might operate with a certain autonomy within a painter's shop in Vasari's story of Botticelli and one Biagio: '... si racconta che avendo un suo creato, che aveva nome Biagio, fatto un tondo simile al sopradetto [a Madonna and angels tondo by Botticelli himself], che Sandro lo vendé sei fiorini d'oro a un cittadino ...'. See Vasari (ed. Barocchi) 1971, cited in note 4, III, p. 517.
- 6 See R. Bartoli, *Biagio d'Antonio*, Milan 1999, pp. 31–6, 186–7, and, most recently, D. Sallay and V. Tátrai in D. Sallay, V. Tátrai,



- A. Vécsey (eds.), *Botticelli to Titian: Two Centuries of Italian Masterpieces*, exh. cat., Szépművészeti Múzeum, Budapest 2009, pp. 130–1, cat. 6 (with previous bibliography), who argue that though Biagio may have participated, the design was Verrocchio's.
- 7 Gabinetto dei Disegni Stampe Uffizie (GDSU), Florence, inv. 1254E. See R. Bartoli in M. Gregori, A. Paolucci, C. Acidini Luchinat (eds.), *Maestri e botteghe. Pittura a Firenze alla fine del Quattrocento*, exh. cat., Palazzo Strozzi, Florence 1992, p. 87, cat. 2.21. Bartoli correctly notes discrepancies of scale and (in the lower face) design between painting and drawing. The assumption that it copies a lost drawing (for the features at least) by Verrocchio is strengthened by the observation that the pricking of the drawing does not follow its lines in all places. In particular the pricking in the hair does not coincide with the drawn lines. There is no pricking in the headdress or veil. Therefore this image appears to be transferred from an earlier drawing rather than to a secondary cartoon, panel or wall. White heightening is used for corrections.
  - 8 For a useful account of the Madonna di Piazza, attributing the work to Lorenzo di Credi, see L. Fornasari, 'Andrea del Verrocchio e le botteghe toscane: l'atelier del Rinascimento' in L. Fornasari and C. Starnazzi (eds.), *Leonardo e dintorni: il Maestro, le botteghe, il territorio*, exh. cat., Palazzo del Comune, Arezzo, Florence 2001, pp. 11–90, esp. pp. 18–24, which includes interesting details of the X-radiograph (the heads of the Virgin and Saint Donatus) and infrared reflectogram (the head of Donatus).
  - 9 A. Perosa (ed.), *Giovanni Rucellai ed il suo Zibaldone*, I, "Il Zibaldone Quaresimale", London 1960, pp. 23–4.
  - 10 Covi 2005 (cited in note 1), p. 287, doc. 28.
  - 11 For which see, most recently, L. Melli in A. Natali and A. Tartuferi (eds.), *La stanza dei Pollaiuolo. I restauri, una mostra, un nuovo ordinamento*, Florence 2007, pp. 126–9, cat. 7.
  - 12 Covi 2005 (cited in note 1), p. 277, doc. 11. We are grateful to Scott Nethersole for re-checking this celebrated document and confirming that this is not evidence of Verrocchio 'joining the painters' guild' as has sometimes been claimed.
  - 13 Including, according to his brother, 'uno stendardo [ch'] uno Spiritello per la giostra di Giuliano [de] Medici'. Because of the presence of a Cupid – the 'Spiritello' – and its triangular shape, it is often reasonably assumed that the Uffizi drawing of a Nymph and Cupid (inv. 212E), now usually attributed to Verrocchio and Leonardo working together (see below), can be taken as a preliminary design for this project. The head of the Nymph is more fully worked up on the verso of the great double-sided sheet at the British Museum (1895.0195.785), in which her supporting hand is only loosely sketched. Both these drawings can therefore be dated with some certainty to c. 1475. The female head drawn from life on the recto of the British Museum drawing has been connected with the Virgin in the Madonna di Piazza, and there is indeed a real physiognomic similarity as well as a link in pose and illumination (though the Virgin's hairstyle is very much simpler). The appearance of both heads on the same sheet helps, therefore, to confirm the theory that the design process of the Madonna di Piazza was already underway by 1475, shortly after the death of the donor. See, most recently, I. Rossi in H. Chapman and M. Faietti, *Fra Angelico to Leonardo: Italian Renaissance Drawings*, exh. cat., British Museum, London 2010, pp. 182–5, cat. 40.
  - 14 Covi 2005 (cited in note 1), pp. 285–7, doc. 27. These include what might have been a self portrait.
  - 15 In his first 1550 life of Lorenzo, Vasari writes: 'Fu compagno, caro amico e molto dimestico di Lionardo da Vinci, che insieme, sotto Andrea del Verrocchio, lungo tempo impararono l'arte.' In his second, much expanded version published in 1568, Vasari introduces Perugino into the mix: 'Cresciuto dunque l'animo a Lorenzo, si pose con Andrea del Verrocchio, che allora per un suo così fatto umore si era dato al dipignere; e sotto lui, avendo per compagni e per amici, se bene erano concorrenti, Pietro Perugino e Lionardo da Vinci, attese con ogni diligenza la pittura. See Vasari (ed. Baracchi) 1971 (cited in note 4), IV, p. 299.
  - 16 Biagio was born in c. 1444–6. In 1470, the date given to Benedetto Dei's *Memoria*, he may have been working with the older Cosimo Rosselli. Certainly he too was a member of the Compagnia di San Luca in 1472, in which year he was already renting a workshop with Jacopo del Sellaio. See Bartoli 1999 (cited in note 6), pp. 23, 243–4, docs 5–6. Botticini had received his first training from Neri di Bicci, entering his workshop in 1459–60. In 1469 he was acting on Neri's behalf in the valuation of an altarpiece, suggesting his independent career was already underway. See L. Venturini, *Francesco Botticini*, Florence 1994, pp. 226–7. Botticelli was famously paid for his figure of Fortitude in 1470.
  - 17 Though sometimes denied in recent publications, there can surely be little doubt that the Madonna and Child in Frankfurt (inv. 702) is by the same hand as the Gardner *Annunciation*. See F. Zeri, 'Il Maestro dell' *Annunciazione* Gardner', *Bollettino d'arte*, 38, 1953, pp. 125–39, 233–49, esp. pp. 136–7. This work can probably be dated to the early to mid 1470s.
  - 18 See J.K. Cadogan, *Domenico Ghirlandaio: Artist and Artisan*, New Haven and London 2000, p. 30. Vasari's statement accords with the *ricordo* written in 1513 by Francesco Baldovinetti, a distant cousin of the painter. Cadogan sensibly divines the 'lingering influence of what was probably an early training with Baldovinetti', even if Ghirlandaio quickly adopted a more 'progressive' style modelled in part on Verrocchio's innovations.
  - 19 K. Oberhuber, 'Le problème des premières oeuvres de Verrocchio', *Revue de l'art*, 42, 1978, pp. 63–76; J.K. Cadogan, 'Verrocchio's Drawings Reconsidered', *Zeitschrift für Kunstgeschichte*, 46, 1983, pp. 367–400; P. Scarpellini, *Perugino*, Milan 1984, p. 70; L. Bellosi. in L. Bellosi (ed.), *Pittura di luce. Giovanni di Francesco e l'arte fiorentina di metà Quattrocento*, exh. cat., Casa Buonarroti, Florence, Milan 1990, pp. 177–9. See also F. Viatte, 'Verrocchio et Leonardo da Vinci: à propos les "têtes idéales"' in E. Cropper (ed.), *Florentine Drawing at the Time of Lorenzo the Magnificent*, Bologna 1994, pp. 45–53, esp. p. 49.
  - 20 Brown 1998 (cited in note 1), pp. 23–56; Covi 2005 (cited in note 1), pp. 173–214.
  - 21 Inv. 104A. Covi 2005 (cited in note 1), pp. 188–92, for earlier bibliography. Close examination of this picture in natural light, X-ray and infrared, confirms Verrocchio's authorship of the picture. Its striking, 'sculptural' chiaroscuro is, however, partly the result of what appear to be successive campaigns of restoration. The X-radiograph clearly demonstrates that the paint surface was extended on all four sides, probably at a very early date, now covering areas which would originally have had an engaged frame. Under the microscope, it becomes clear that the strong contrasting highlights around the Virgin's eyes, applied in a rather sticky, thready paint, were added by a later hand. Those parts remaining unaltered suggest an earlier date for the picture than 1475, closer to 1470, with a system of shading rather like the drawing of the head of an Angel in the Uffizi (130E) of a similar date.
  - 22 M. Davies, *National Gallery Catalogues. The Earlier Italian Schools*, rev. edn., London 1961, pp. 554–5.
  - 23 On 13 September 1857 Eastlake and Müндler went to see the painting on an 'excursion to Volterra, where we find, in casa Contugi the Domenico Ghirlandajo, Virgin and two angels adoring the Infant Christ lying on her lap. This chef-d'oeuvre need, not be described more minutely as it has become the property of the nation and will soon be exhibited publicly'; C. Togneri Dowd (ed.), 'The Travel Diaries of Otto Müндler', *The Walpole Society*, 51, 1985, p. 166. Eastlake affirmed his belief that the panel was by Ghirlandaio in a letter of 22 August 1858 to the Keeper, Ralph Wornum (National Gallery Archive ref. NGA1/3/3/42).
  - 24 A copy of this undated pamphlet is included among the Sensi Contugi papers deposited in the Biblioteca Guarnacci di Volterra in 2000, where it was found by Scott Nethersole during a preliminary investigation of these as yet unsorted papers.
  - 25 O. Müндler, Review of 'J.A. Crowe and G.B. Cavalcaselle, A New History of Painting in Italy, III, London, 1866', *Zeitschrift für*

- Bildenkunst*, 2, 1867, pp. 301–2. In rejecting Crowe and Cavalcaselle's attribution to Lorenzo di Credi in Verrocchio's workshop, Mündler mentions that even Eastlake began to incline towards an attribution to Pollaiuolo. Curiously, in continuing his argument against the Lorenzo attribution, he listed a group of paintings that he believed to be early works by Lorenzo, including the Berlin *Madonna* (inv. 108, see note 26 below), and the painting in Frankfurt now usually attributed to the Master of the Gardner Annunciation (see note 17). We are grateful to Mara Hofmann for assistance with this note.
- 26 Published by Photographische Gesellschaft of Paris, Berlin and London. A copy of the photograph is in the National Gallery History File for NG 296. The attribution in Germany of the National Gallery picture to the still-mysterious Pesello can be explained by the fact that the Berlin *Madonna supporting the Child in a standing Pose* (inv.108, ex-Solly), now often thought to have been painted by Perugino in Verrocchio's shop, was catalogued and labelled by 1851 as a painting by Pesello. See G.E. Waagen, *Königliche Museen. Verzeichniss der Gemälde-Sammlung*, Berlin 1851, p. 33; J.A. Crowe and G.B. Cavalcaselle, *A New History of Painting in Italy from the Second to the Sixteenth Century*, London 1864, II, p. 410. By 1865 the Frankfurt *Madonna* was also attributed to Pesello. *Ibid.*, p. 411.
- 27 *Ibid.*, p. 412.
- 28 W. Bode, 'Verrocchio und des Altarbild der Sacramentskapelle in Dom zu Pistoia', *Repertorium für Kunstwissenschaft*, 22, 1899, pp. 390–5, esp. p. 391.
- 29 M. Cruttwell, *Verrocchio*, London and New York 1904, pp. 118–20, along with both Berlin *Madonnas* and the National Gallery *Tobias and the Angel*, 'a naïve work'.
- 30 Those who favour Perugino include: Zerl 1953 (cited in note 17), p. 134, and Brown 1998 (cited in note 1), pp. 43–5. Supporters of the Ghirlandaio attribution include: A. Bertini, *Verrocchio e la scultura del '400*, Turin 1965, pp. 114–6; G. Passavant, *Andrea del Verrocchio als Maler*, Düsseldorf 1959, pp. 136–7, and Covi 2005 (cited in note 1), p. 200, who adds, interestingly, 'though I have a nagging suspicion that Credi may also have a hand in this work'. The picture is assumed by many scholars to have been painted by the same hand as Berlin 108 (see notes 25–6 above). See, most recently, T. Mozzati in V. Garibaldi and E.F. Mancini (eds.), *Perugino: Il divin pittore*, exh. cat., Galleria Nazionale dell'Umbria, Perugia 2004, p. 170, cat. 1.2 (with earlier bibliography in which of course the identification of that hand varies considerably). Mozzati, cautiously supporting the attribution to Perugino, takes pains to point out what he sees as various stylistic differences between the two pictures. We, however, agree that they share many characteristics and, though the Berlin *Madonna* is very slightly earlier, it too was executed by Verrocchio in collaboration with the same assistant (responsible for the figure of the Christ Child). See below.
- 31 G. Passavant, *Verrocchio: Sculpture, Paintings and Drawings*, London 1969, pp. 209–10, Cat. App. 38.
- 32 P.C. Marani, *Leonardo: un' carriera di pittore*, Milan 1999, pp. 23–5, and also N. Penny, 'Le Peintre et l'atelier dans l'Italie de la Renaissance' in R. Cassanelli (ed.), *Ateliers de la Renaissance*, Paris 1998, pp. 31–54, esp. p. 47. Holmes's argument was based in part on an association with the famous drawing of a lily, unanimously given to Leonardo (RL12418). We are grateful to Martin Clayton for pointing out that this attribution is in fact far from secure. It could be argued therefore that the attribution of the picture to Verrocchio, Perugino and Leonardo has the force of a somewhat misguided logic. For which, see P. Adorno, *Il Verrocchio. Nuove proposte nella civiltà artistica del tempo di Lorenzo Il Magnifico*, Florence 1991, p. 111; C. Starnazzi, 'Naturalismo e simbolismo nei paesaggi di Leonardo: dai capolavori di bottega alla Gioconda', in Fornasari and Starnazzi (eds.) 2001 (cited in note 8), pp. 112–40, esp. p. 120–1.
- 33 Oberhuber 1978 (cited in note 19), pp. 63–76, esp. pp. 70–1. See earlier, B. Berenson, *The Drawings of the Florentine Painters*, 2nd edn, Chicago and London 1938, I, pp. 52, 54, where the picture is described as 'wholly' by Verrocchio and dated 1471–2.
- 34 Cadogan 1983 (cited in note 19), pp. 367–400, esp. p. 375.
- 35 L. Bellosi, 'Un omaggio di Raffaello al Verrocchio' in M. Sambucco Hamoud and M.L. Strocchi (eds.), *Studi su Raffaello. Atti del Congresso Internazionale di studi (Urbino-Firenze 6–14 aprile 1984)*, Urbino 1987, 2 vols, I, pp. 401–17, esp. p. 407; Bellosi 1990 (cited in note 19), p. 179. It is also accepted as entirely autograph by Scarpellini 1984 (cited in note 19), p. 70, and, cautiously, by P. Nuttall, *From Flanders to Florence. The Impact of Netherlandish Painting, 1400–1500*, New Haven and London 2004, p. 181.
- 36 Davies 1961 (cited in note 22), p. 554. He felt that 'the draughtsmanship in No. 296 is more mechanical than might be expected of Verrocchio'.
- 37 C. Baker and T. Henry, *The National Gallery Complete Illustrated Catalogue*, London 1995, p. 708. The painting is mentioned only in passing, as a workshop product, in F. Windt, *Andrea del Verrocchio und Leonardo da Vinci Zusammenarbeit in Skulptur und Malerie*, Beiträge zur Kunstgeschichte der Mittelalters und der Renaissance, Vol 11, Münster 2003, p. 43.
- 38 N. Penny in P.L. Rubin and A. Wright, *Renaissance Florence: The Art of the 1470s*, exh. cat., National Gallery, London 1999, p. 173, cat. 23.
- 39 Davies 1961 (cited in note 22), pp. 303–4 (called 'an early work'); G. Dalli Regoli, *Lorenzo di Credi*, Pisa 1966, p. 135, cat. 69.
- 40 See L. Syson and J. Dunkerton, 'Andrea del Verrocchio's First Surviving Panel Painting and Other Early Works', forthcoming in *The Burlington Magazine*. In addition, *Tobias and the Angel* (NG 781) underwent some technical examination, including infrared reflectography. This we judge to be an entirely workshop product. The dog and fish, sometimes claimed as perhaps Leonardo's earliest efforts, are indeed of a higher quality than the rest, though their author may well be Verrocchio. It is possible that the assistant on this occasion was the very young Perugino and that the picture should be dated to c. 1470–3.
- 41 Recorded by Mündler; see Togneri Dowd (ed.) 1985 (cited in note 23), p. 191.
- 42 Togneri Dowd (ed.) 1985 (cited in note 23), p. 201.
- 43 It was described as 'in fine preservation in all parts'; *National Gallery Annual Report*, 1858, p. 59.
- 44 '... a little less damaged than various other parts of the flesh of the figures, by the sacrilegious hand of the barbaric and idiotic cleaning'. See pamphlet cited in note 24.
- 45 See J. Anderson, 'Molteni in corrispondenza con Giovanni Morelli. Il restauro della pittura rinascimentale a Milano nell' Ottocento', in F. Mazzocca, L.M. Galli Michero, P. Segramora Rivolta (eds.), *Giuseppe Molteni (1800–1867) e il ritratto nella Milano romantica. Pittura, collezionismo, restauro, tutela*, exh. cat., Museo Poldi Pezzoli, Milan 2000, pp. 47–57, esp. p. 54.
- 46 27 December 1857, 'I have a photograph [sic] from the Ghirlandajo holy family taken, before the picture is taken in hand by Cavalle Molteni.' On 1 January 1858 he 'obtained the first proofs of the Ghirlandajo photograph'. Togneri Dowd (ed.) 1985 (cited in note 23), p. 192. There is unfortunately no trace of these photographs at the National Gallery.
- 47 Obituary by K.T.P. in *The Burlington Magazine*, Vol. 97, No. 262, Jan. 1955, p. 20.
- 48 Examination report in National Gallery Conservation Record, p. 4. The record also includes a Laboratory Report – identifying the materials of Molteni's toning layer – and a Treatment Report.
- 49 Among them Lorenzo Monaco's *Coronation of the Virgin* (NG 215, 1897 and 216), also retouched, according to the Conservation Record, with 'gum tempera', glazed with wax and dammar; see P. Ackroyd, L. Keith and D. Gordon, 'The Restoration of Lorenzo Monaco's "Coronation of the Virgin"', *National Gallery Technical Bulletin*, 21, 2000, pp. 43–57, esp. p. 46 and p. 56, note 20.
- 50 Analysis of two samples of the varnish by GC-MS found only mastic, but since they were both from the curtain on the left, they must have included Molteni's mastic varnish, which had been left



- in place by Isepp during his cleaning of the painting. All the investigation of organic materials, using FTIR microscopy and GC–MS analysis, was carried out by David Pegg and Rachel Morrison.
- 51 The coating on the back obscures the wood grain in the X-radiograph, making it difficult to confirm the presence of a second possible join.
- 52 See, for example, Davies 1961 (cited in note 22), p. 554 ('it is indeed probable that the picture has been considerably cut down') and Scarpellini 1984 (cited in note 19), p. 70.
- 53 This was observed by Penny in Rubin and Wright 1999 (cited in note 38).
- 54 Notably the *Virgin and Child* (no. 1019) sometimes attributed to Fiorenzo di Lorenzo in the Musée Jacquemart-André, Paris, which has very similar fur-lined curtains (with, in this case, the Virgin's halo placed in front of them). See Scarpellini 1984 (cited in note 19), p. 70, no. 6. As Scarpellini realised, this picture is certainly not by the young Perugino, as has often been argued, but an attribution to Bartolomeo Caporali now appears more plausible, given our better understanding of this artist.
- 55 The egg tempera and mastic in the retouchings on *The Virgin and Child with Two Angels* was identified by GC–MS. For the retouching media in other Molteni restorations see J. Dunkerton, 'Gusto, stile e tecnica in due restauri di Giuseppe Molteni' in *Giuseppe Molteni*, exh. cat., 2000 (cited in note 45), pp. 77–83, esp. p. 78.
- 56 Heat-bodied or partially heat-bodied linseed oil was identified in samples of pink and dark blue retouching by GC–MS. In some samples a small amount of pine resin was present, although this may be from a later varnish layer.
- 57 Isepp noted the retouching on the Virgin's brooch (although not elsewhere) and had a black and white macro photograph taken of this detail, which is included in the Conservation Record.
- 58 GC–MS analysis of a sample from a similarly coloured area of retouching in the sky indicates that it probably contained Molteni's preferred egg tempera and mastic. Some of Molteni's restorations with a characteristic light turquoise colour can still be seen on certain paintings in the National Gallery, including Gentile Bellini's *The Virgin and Child Enthroned* (NG 3911) and, most notably, his extensive retouching of the sky in Pisanello's *The Virgin and Child with Saints Anthony Abbot and George* (NG 776); see J. Dunkerton, 'L'état de restauration des deux tableaux de Pisanello de la National Gallery de Londres', *Colloque 'Pisanello'*, Louvre, Paris 1996, published Paris 1998, pp. 675–81.
- 59 The Prussian blue was confirmed by FTIR microscopy. EDX analysis identified the presence of aluminium, indicating that it had been manufactured according to an eighteenth-century recipe. For the different appearance of eighteenth-century Prussian blue pigments from later examples, see J. Kirby and D. Saunders, 'Fading and Colour Change of Prussian Blue: Methods of Manufacture and the Influence of Extenders', *National Gallery Technical Bulletin*, 25, 2004, pp. 73–99, esp. pp. 80–1.
- 60 The retouching was carried out with 'Gamblin Conservation Colours' (commercially manufactured retouching paints consisting of pigment bound in Laropal A-81, a low molecular weight aldehyde resin). In some areas this was over an underpainting in watercolour. The preliminary and final sprayed varnish is 'Regalrez 1094'.
- 61 The dots of gold leaf were applied using a mordant of 'Paraloid B-72' in xylene. The decoration of the edge of the Virgin's mantle to the left of her hands and in the fold draped over her right arm was much damaged and had been extensively restored by Molteni, who used shell gold, and by an earlier restorer, using bronze powder (EDX analysis showed it to contain copper and zinc). Although some mosaic gold was identified in the remains of the original pattern, it could be restored with shell gold in gum Arabic. In this latest restoration the pattern was reconstructed but in such a way as to suggest its damaged condition. The exceptional state of preservation of most of the patterns on the hems meant that leaving the damaged areas unrestored would have introduced an imbalance in the painting's appearance.
- 62 See Covi 2005 (cited in note 1), pp. 20, 268, doc. 3.
- 63 Nuttall 2004 (cited in note 35), *passim*, esp. p. 176. In the recently identified early painting by Verrocchio in the National Gallery, also of *The Virgin and Child with Two Angels* (NG 2508), all the golden elements, including cloth-of-gold textiles, are rendered in yellow paint in a manner which suggests the study of Netherlandish examples; see Syson and Dunkerton forthcoming (cited in note 40). In this painting Verrocchio also used egg tempera, unlike the Pollaiuoli brothers, whose imitation of Netherlandish painting extended to the adoption of an oil medium.
- 64 The construction of the garments of this angel and also those of the angel occupying a similar position in the earlier National Gallery painting (see note 40 above) suggests that Verrocchio had detailed knowledge of the types of costumes worn by young boys who dressed as angels for religious and theatrical events. Indeed, he may even have designed some of them. We are grateful to Lisa Monnas for discussion of this point.
- 65 F. Frezzato (ed.), *Cennino Cennini: Il libro dell'arte*, Vicenza 2003, p. 180.
- 66 Cennino states that porporina 'è buono in carta di questi miniatori, e anchora in tavola se n'adoperrebbe' (cited in note 65). For the inclusion of recipes for its manufacture in Alcherius's collection and its use alongside gold leaf by illuminators such as the Boucicault Master, see N. Turner, 'The Recipe Collection of Johannes Alcherius and the Painting Materials used in Manuscript Illumination in France and Northern Italy, c. 1380–1420', *Painting Techniques: History, Materials and Studio Practice*, Contributions to the Dublin Congress of the International Institute for Conservation, 7–11 September 1998, A. Roy and P. Smith (eds.), pp. 45–50, esp. pp. 46–7. We are grateful to Nancy Turner for useful discussion of the use of mosaic gold on manuscripts.
- 67 At the National Gallery mosaic gold was found for the first time on Cossa's *Saint Vincent Ferrer* (NG 597); see A. Smith, A. Reeve and A. Roy, 'Francesco del Cossa's "S. Vincent Ferrer"', *National Gallery Technical Bulletin*, 5, 1981, pp. 44–57, esp. pp. 55–6. For its identification on paintings by Tura see A. Dorigato (ed.), *Carpaccio, Bellini, Tura, Antonello e altri restauri quattrocenteschi della Pinacoteca del Museo Correr*, exh. cat., 1993, p. 232; and by Ercole, see D. Allen and L. Syson, *Ercole de' Roberti. The Renaissance in Ferrara*, exh. cat., J. Paul Getty Museum, Los Angeles, London 1999, pp. xvi and xxviii, and also A. Wallert, 'Pigments and Organic Colorants: Two Case Studies' in T. Bakkenist, R. Hoppenbrouwers, H. Dubois (eds.), *Early Italian Paintings Techniques and Analysis, Symposium, Maastricht, 9–10 October 1996*, Maastricht 1997, pp. 75–6. Mosaic gold has also been found on the National Gallery's Sienese altarpiece by Pietro Orioli, *The Nativity with Saints* (NG 1849), and on *The Virgin and Child with Two Angels* (NG 1134) by Liberale da Verona; the latter was, of course, also a manuscript painter.
- 68 During our recent examination of Berlin 104A, traces of what appears to be original mosaic gold were observed under the brighter gold powder used to restore the haloes of both Virgin and Child. Touches of mosaic gold have also been found on the hair of some of the angels in the centre panel (NG 663.1) of the predella of Fra Angelico's altarpiece for San Domenico, Fiesole (see D. Gordon, M. Wyld and A. Roy, 'Fra Angelico's Predella for the High Altarpiece of San Domenico, Fiesole', *National Gallery Technical Bulletin*, 23, 2002, pp. 4–19, esp. pp. 9–10). It was suspected, however, to be from a later restoration (although not removed); the discovery that mosaic gold was in use in the Verrocchio workshop raises the possibility that these touches were applied to the predella by Lorenzo di Credi during his extensive alterations to Fra Angelico's altarpiece carried out in 1501. To date, mosaic gold has not been observed, for example, on any of the countless Florentine paintings that have passed through the Settore Restauro Dipinti su Tela e Tavola at the Opificio delle Pietre Dure (information kindly supplied by Roberto Bellucci and Cecilia Frosinini).

- 69 Samples from the wing of the angel on the right, and from a badly damaged area on the edge of the Virgin's mantle were analysed using EDX by Marika Spring, who was responsible for the investigation of the inorganic materials. These clearly contained particles in which Sn and S were detected, indicating that mosaic gold (SnS<sub>2</sub>) is present. When the unmounted fragment is viewed in non-polarised light under the microscope the mosaic gold particles scatter light and have a metallic lustre. When viewed under polarised light, however, which reduces light scattering, it is clear that they are not metallic.
- 70 A very tiny fragment from one of the dots was taken for EDX analysis. The main component of the sample contains Sn and S and is therefore mosaic gold but a little Au was also detected, indicating that there is also metallic gold, probably applied as shell gold.
- 71 The sample was too small to prepare as a cross-section. The tiny fragment of paint was examined under the microscope and appears to contain white and ultramarine.
- 72 Three samples, two from the green tunic of the angel on the right and one from the Virgin's blue mantle, were examined by FTIR microscopy and analysed by GC-MS. They were all found to contain egg tempera. A small amount of degraded pine resin and, in one sample, some mastic, was also found but must come from later varnish layers. There was nothing to indicate the addition of any drying oil, even in the darkest green sample. A fourth sample from a lead-tin yellow highlight on the curtain was too small for GC-MS analysis; examination by FTIR microscopy, however, confirms that the medium is proteinaceous.
- 73 See, for example, J. Dunkerton and A. Roy, 'The Materials of a Group of Late Fifteenth-Century Florentine Panel Paintings', *National Gallery Technical Bulletin*, 17, 1996, pp. 20–31.
- 74 A small amount of this pigment mixture is present in the sample taken for confirmation of the identification of the mosaic gold (fig. 26).
- 75 Kermes, *Kermes vermilio* Planchon, as the dyestuff for the red lake was identified using HPLC by Jo Kirby. The translucent red used by Molteni in his restoration of the curtain is a cochineal lake.
- 76 The effects of this blackening were reduced slightly during retouching in areas where the structure of the folds was compromised. As is always the case, the altered pigment registers clearly in an infrared reflectogram (figs 35 and 57). For the blackening of vermilion, see M. Spring and R. Grout, 'The Blackening of Vermilion: An Analytical Study of the Process in Paintings', *National Gallery Technical Bulletin*, 23, 2002, pp. 50–61.
- 77 A variety of particle shapes can be seen in the samples; one or two of the particles are perfectly spherical, others seem to be broken fragments of larger spheres, while some are more angular. Although in the past a spherical particle form was thought to indicate artificial malachite, it is now known that spherical malachite can be naturally precipitated when it forms under certain conditions, and when it originates from the water running from a copper mine. This is very typical of this period of Italian painting and many examples are known (see G. Heydenreich, M. Spring, M. Stillhammerova, C.M. Pina, 'Malachite pigment of spherical particle form', *ICOM Committee for Conservation, 14th Triennial Meeting, The Hague, Preprints Vol. I*, 2005, pp. 480–9). Only Cu was detected by EDX analysis in most of the green particles, suggesting that they are copper carbonate – malachite. In other similar copper mineral pigments used in paintings of this period other complex copper minerals have sometimes been found, but were not detected here. There are a few particles in which Cu and S were detected and which are therefore likely to be copper sulphate, a common accessory mineral. We are very grateful to Marika Spring for supplying this note.
- 78 For images of malachite and other green mineral pigments found on Florentine paintings in the National Gallery see Dunkerton and Roy 1996 (cited in note 73), p. 29 (at the time it was thought that the spherulitic particle form was characteristic of artificial malachite).
- 79 In the earlier *Virgin and Child with Two Angels* (NG 2508) a translucent warm brown monochrome undermodelling of similar composition was broadly washed in under all the draperies. See Syson and Dunkerton, forthcoming (cited in note 40).
- 80 Appended to Isepp's Treatment Report is a note, written in a hand which is recognisably that of Helmut Ruhemann, observing that 'the flesh is not built up on a green underpainting, as is usually the case with paintings of this school and period' (National Gallery Conservation Record, p. 23). The flesh tints in the early *Virgin and Child with Two Angels* (NG 2508) are modelled over a light green underlayer containing green earth, but in the 1470s other Florentine tempera painters, most notably Botticelli (see J. Dunkerton, 'Osservazioni sulla tecnica delle opere di Sandro Botticelli alla National Gallery di Londra', in D. Gasparotto and A. Gigli (eds.), *Il tondo di Botticelli a Piacenza*, Milan 2006, pp. 67–79, esp p. 70), were also tending to work on very pale green and sometimes perhaps white underlayers, presumably as a reaction to the more naturalistic flesh painting to be seen in early Netherlandish paintings.
- 81 Christ Church, Oxford, inv. 0005. See C.C. Bambach in Bambach (ed.), *Leonardo da Vinci: Master Draftsman*, exh. cat., Metropolitan Museum of Art, New York, New Haven and London 2003, pp. 242–5, cat. 1 (with previous bibliography); Covi 2005 (cited in note 1), pp. 220–1. In both this great drawing and the equally extraordinary sheet from Berlin (see note 82 below), Verrocchio has reached the zenith of his career as a draughtsman. Their confidence and refinement is such as to make us think they slightly post-date the 1475 drawings in Florence and London for Giuliano's standard (see above). Since the Christchurch head is related, at least typologically, to the female Virtues of the Forteguerrri monument, a date of c. 1476–8 seems likely.
- 82 Kupferstichkabinett, Berlin, KdZ 5095. C.C. Bambach in Bambach (ed.) 2003 (cited in note 81), pp. 245–8, cat. 2.
- 83 The literature on this attributionally thorny subject is extremely large. Only K. Christiansen, 'Letters: Leonardo's Drapery Studies', *The Burlington Magazine*, 132, 1990, pp. 572–3, has so far given any real number of these studies to Verrocchio himself. The Uffizi drapery study for a Christ pointing to the wound in his chest (GDSU, inv. 433E), associated with Verrocchio's Orsanmichele group by Christiansen (and before him Passavant), and used as the touchstone for his group of such studies attributed to Verrocchio, is better attributed to Leonardo, but others, less exquisitely refined than Leonardo's own, may well be by the hand of his master.
- 84 Butterfield 1997 (cited in note 1), pp. 94–101.
- 85 *Ibid.*, pp. 137–54.
- 86 B. Boucher (ed.), *Earth and Fire: Italian Terracotta Sculpture from Donatello to Canova*, exh. cat., Museum of Fine Arts, Houston, and Victoria and Albert Museum, London, New Haven and London 2001, pp. 126–9, cat. 12.
- 87 Only a small minority of scholars have believed in the past that this work could possibly have been executed collaboratively, but in general they do not explain how such a collaboration could have worked or which parts are by which hand.
- 88 For which, see most recently H. Chapman in Chapman and Faietti (eds.) 2010 (cited in note 13), pp. 202–3, cat. 49.
- 89 Holmes wrote that 'The handling of the landscape has a very close resemblance to Leonardo's first dated drawing. It is permissible to think that Leonardo may have helped, not only with the background, but also with the exquisite finish of the figures...'. See C. Holmes, *Old Masters and Modern Art. The National Gallery Italian Schools*, London 1923, p. 61.
- 90 The lost Argiano altarpiece, *Christ on the Cross between Saints Jerome and Anthony Abbot* (earlier, and surely largely or partly by Verrocchio, though its precise date and the degree of collaboration are perforce unclear following its theft in 1970), has a rather similar landscape. Passavant 1959 (cited in note 30), pp. 132–7, suggested that some parts, the figure of Anthony and parts of the landscape, were by a pupil, perhaps Domenico Ghirlandaio, and though this proposal has met with little success, those scholars



- crediting the attribution to Verrocchio (Perugino is also regularly proffered) are generally agreed that this work was executed collaboratively. See Covi 2005 (cited in note 1), pp. 211–3 (for a summary of views; he himself rejects the attribution) and fig. 213–6.
- 91 On the reverse of the original panel of the portrait of Lorenzo di Credi at the National Gallery of Art Washington (transferred in 1933 to fabric) was the inscription (probably in a later hand, but so specific that it is hardly likely to be entirely invented): 'LORENZO DI Credi Pittore ecamo MCCCCLXXXVIII AETATIS SVE XXXII ME VIII (Lorenzo di Credi, most excellent painter, 1488, age thirty-two years, eight months). See M. Boskovits and D.A. Brown, *Italian Paintings of the Fifteenth Century. The Collections of the National Gallery of Art. Systematic Catalogue*, Washington 2003, p. 557. This would suggest that Lorenzo was born in about 1457. In his mother's tax declaration of 1470, her son's age was given as twelve, evidence that Lorenzo was born a little later, in about 1458. In a later tax declaration, of 1480/1, he has become younger again, only twenty-one. See Davies 1961 (cited in note 22), p. 302.
- 92 Perugino, like Verrocchio and Leonardo, but unlike Lorenzo di Credi, was recorded as a member of the reformed Campagnia di San Luca in 1472. Identifying the moment afterwards when Perugino left Florence and returned to Perugia remains a difficult problem. He is first recorded working as an independent master in Perugia in 1475, paid for works (destroyed) in Palazzo dei Priori. If, as is often proposed, Perugino painted two of the scenes for the tabernacle of San Bernardino (probably made for the church of San Francesco al Prato, now Galleria Nazionale dell'Umbria), including the *Healing of Giovanni Antonio da Rieti's Daughter*, which is dated 1473, his departure would surely have to be put a little earlier. There is still room for considerable clarification of Perugino's early career, but if, as has been plausibly proposed by Francis Russell (in verbal communication), the painter of these two scenes also executed the *Virgin and Child* at the National Gallery (NG 2483), traditionally (though wrongly) ascribed to Fiorenzo di Lorenzo and more recently to Pintoricchio, the artist is unlikely to be Perugino. It is therefore perhaps more likely that Perugino departed Florence (if only for the time being) in about 1474. See P. Scarpellini in V. Garibaldi, F.F. Mancini (ed.), *Pintoricchio*, exh. cat., Galleria Nazionale dell'Umbria, Perugia 2008, p. 234, cat. 35, and F. Russell, 'Pintoricchio in Dreamland', *Apollo*, 167, no. 554, May 2008, pp. 98–101 (review of the 2008 Perugia exhibition), for views that differ from one another and from that given above. The picture is currently displayed as Umbrian, from about 1473.
- 93 It should be said, however, that their analysis of the picture as a whole is different from ours. They state, for example, that 'The angel to the right reminds one of that of Verrocchio. The angel to the left, with his upturned and sentimentally bent head, is foreshortened as Lorenzo di Credi might have done.' J.A. Crowe and G.B. Cavalcaselle, *A New History of Painting in Italy from the Second to the Sixteenth Century*, London 1864, II, pp. 411–2. Interestingly, the authors write of the Berlin *Virgin and seated Child* (inv. 104A), that it 'exhibits less the manner and drawing of Verrocchio than the features of Lorenzo, chiefly in the system of colour and its finish, in the exaggerated forms of the child and in the style of draperies. The picture is indeed one which recalls [sic] Verrocchio's pupil after he left the master's atelier, though in colour and execution inferior even to his creations.' Their Lorenzo di Credi was to some degree our Verrocchio. Our attribution of NG 296 to Verrocchio working with Lorenzo di Credi is endorsed by H. Chapman, 'Introduction' in Chapman and Faietti (ed.) 2010 (cited in note 13), pp. 65 and 75, note 132.
- 94 Butterfield 1997 (cited in note 1) pp. 60, 210.
- 95 GC–MS analysis of samples from the Virgin's blue mantle and the brown background of the National Gallery's *Virgin and Child* (NG 593) by Lorenzo di Credi identified heat-bodied walnut oil as the painting medium. The question of when and where Lorenzo, Leonardo and Perugino learnt to work in oils is an interesting one. It is just possible that Verrocchio himself experimented with the oil medium. The Louvre *Virgin and Child* in an interior has in recent years been most often attributed to Domenico Ghirlandaio, on the basis of his assumed training by Verrocchio. See E. Fahy in B.W. Meijer (ed.), *Firenze e gli antichi Paesi Bassi: 1430–1530. Dialoghi tra artisti: da Jan van Eyck a Ghirlandaio, da Memling a Raffaello . . .*, exh. cat., Palazzo Pitti, Florence, Livorno 2008, pp. 170–1, cat. 35. As was recognised by Lorne Campbell, the columns of the window and the landscape seen through it copy those in Hans Memling's *Portrait of a Young Man*, Lehman Collection, Metropolitan Museum of Art, New York. See L. Campbell, 'Memling and the Followers of Verrocchio', *The Burlington Magazine*, 125, 1983, pp. 675–6. Dendrochronology has now established that Memling's portrait is very unlikely to have been executed before 1476 (see T-H. Borchert, *Memling's Portraits*, exh. cat., Museo Thyssen-Bornemisza, Madrid, Groeningemuseum, Bruges, and The Frick Collection, New York, Ghent and Amsterdam 2005, p. 165, cat. 15), a *terminus post quem* that makes it more than ever unlikely on grounds of chronology as well as style that Ghirlandaio is its author. The picture was attributed to Verrocchio by, e.g., Cadogan 2000 (cited in note 18), p. 60. Our recent re-examination of the picture confirmed the observation by Franziska Hourriere, who restored this sadly damaged work, that it appears to have been executed in a mixture of tempera and oil techniques. No analysis has been carried out but the flesh painting and landscape seem to be in egg while the costume and interior setting were painted in oil. Throughout, the picture lacks the extreme refinement of those parts of NG 296 and Berlin 108 that can be attributed to Verrocchio himself, and, as far as its poor condition permits judgement, the flesh painting seems to have the waxy qualities of those parts of NG 296 given here to Lorenzo. The younger painter cited Memling's portrait again in his own portrait of (probably) Andrea del Verrocchio (Uffizi, Florence; see Nuttall 2004, cited in note 35, p. 153, where it is attributed to Perugino; the picture is also sometimes ascribed to Raphael) and Lorenzo continued to incorporate motifs from Netherlandish paintings in Florence into his own works. On the other hand, Lorenzo was also to become a painter of almost obsessive refinement, and the facial types of both *Virgin and Child* are close to Verrocchio's. Given its condition, it is probably sensible for the moment to attribute this picture to Verrocchio's workshop, as Campbell did in 1983.
- 96 Vasari (ed. Barocchi) 1971, IV, pp. 299–300 (cited in note 4) writes of Lorenzo di Credi: 'E perché a Lorenzo piaceva fuor di modo la maniera di Lionardo, la seppe così bene imitare, che niuno fu che nella pulitezza e nel finir l'opere con diligenza l'imitasse più di lui, come si può vedere in molti disegni fatti e di stile e di penna o d'acquarello, che sono nel nostro libro'. Vasari continues: 'Le prime pitture di Lorenzo furono un tondo d'una Nostra Donna, che fu mandato al re di Spagna, il disegno della qual pittura ritrasse da una d'Andrea suo maestro: et un quadro molto meglio che l'altro, che fu similmente da Lorenzo ritratto da uno di Lionardo da Vinci, e mandato anch'esso in Ispagna, ma tanto simile a quello di Lionardo che non si conosceva l'uno dall'altro.' The Munich *Madonna of the Carnations* by Leonardo (of, it is agreed, about 1475) seems to have been particularly well studied by Lorenzo, as testified by the latter's drawings of the Munich *Christ Child* (GDSU, inv. 1197E) and the *Virgin* (Kupferstichkabinett, Dresden), perhaps suggesting that these figures and the *Virgin's* left hand were studied separately by Leonardo in the first instance (and that Lorenzo was copying drawings as well as the painting). The *Virgin*, and her hand, found their way into his *Madonna and Child with a Pomegranate* (the 'Dreyfus Madonna'), National Gallery of Art, Washington, which is certainly by Lorenzo rather than Leonardo as is sometimes claimed. If Brown (1998, cited in note 1, p. 120) is right in arguing that the beautiful drawing of a female head in the Louvre (18.965) is by Perugino, then he too was exploring this Madonna

- type at this moment. For the relationship between these works see C. Syre, “‘Und Du sollst wissen, da, der Mensch nichts anderes ist als das Muster der Welt’”. Die Madonna mit der Nelke von Leonardo da Vinci’ in C. Syre, J. Schmitt, H. Stege (eds.), *Leonardo da Vinci. Die Madonna mit der Nelke*, exh. cat., Alten Pinakothek, Munich, 2006, pp. 23–59 and catalogue entries, pp. 252, 256–8, 262.
- 97 Dalli Regoli 1966 (cited in note 39), p. 138, cat. 79.
- 98 Fitzwilliam Museum, inv. 2930. See Brown 1998 (cited in note 1), pp. 126, 208 note 30 (for earlier attributions and bibliography); C.C. Bambach in Bambach 2003 (cited in note 81), pp. 258–60, cat. 6. It is a little odd that Brown (followed by Bambach) insists upon the attribution of this sheet to Verrocchio, given its stylistic and technical links with the Uffizi study of a young woman’s head in lost profile (inv. 428E), which he controversially but cogently removes from Leonardo and re-assigns to Lorenzo (pp. 155–7). Interestingly, Oberhuber 1978 (cited in note 19), p. 71, discerned a connection between the National Gallery picture and Lorenzo di Credi, noting: ‘Lorenzo di Credi ... admira le tableau de Londres et modela d’après l’ange de droite ses visages de jeunes gens ...’. But he adds, assuming a gap of years between the National Gallery *Virgin and Child* and the advent of Lorenzo in the workshop: ‘il n’a jamais adhéré à style un pureté géométrique, dont les draperies cassantes eurent tant l’influence en Ombrie’. Cadogan 1983 (cited in note 19), p. 374, argues (assuming that, like the recto, it is by Verrocchio) that the verso of the great drawing in Berlin of a youth looking upwards (inv. 5093), his face cut just below the nose when the sheet was trimmed, is ‘a study for the right angel in the National Gallery *Madonna and Child with Angels*’. She correctly notes that ‘In the finished picture the angel is turned slightly more full face, but the similarity of pose and motif, particularly of the hair, eyes, nose and turned up mouth, argues strongly for the connection.’ This drawing is extremely close in style to the verso of the British Museum sheet and is unquestionably autograph. The differences between this head and the head in NG 296 might have given Cadogan pause for thought. Rather than being a preparatory drawing for the painting as such, it may well lie behind Lorenzo’s slightly simplified version. Thus, in entrusting parts of pictures to his young assistants, Verrocchio is likely to have pointed to appropriate models among his own designs.
- 99 National Gallery of Scotland, Edinburgh 642. See C.C. Bambach in Bambach (ed.) 2003 (cited in note 81), pp. 263–6, cat. 8. Despite the long-held view that this sheet should be divided between Verrocchio and Lorenzo di Credi, it appears to us, notwithstanding the presence of handwriting on the verso that compares well with Verrocchio’s own, that both sides are drawn by Lorenzo di Credi. As well as the figure of Saint Donatus, the recto (indisputably Lorenzo’s) contains three sketches of the head and shoulders of a youth turned to the left, again posed somewhere between a full-face and a three-quarter view. And again there may be some relationship between this sheet and the National Gallery *Virgin and Child*, in which case it could be argued that the design stages of the London painting and the *Madonna di Piazza* were more or less simultaneous. Given the arguments for dating NG 298 outlined above, and the likely date of Verrocchio’s Pistoia commission, this coincidence is plausible.
- 100 For which see note 99 above. The motif first appears within Verrocchio’s oeuvre in Berlin 104A.
- 101 Most notably in the *Virgin and Child with Saints Julian and Nicholas* (ex-Mascalzoni Chapel, Santa Maria Maddalena de’ Pazzi, Florence, now Louvre).
- 102 Cadogan 1983, pp. 380–2; A. Petrioli Tofani, *Gabinetto disegni e stampe degli Uffizi. Inventario, I, Disegni esposti*, Florence 1986, p. 199. The figures appear to have been added from right to left.
- 103 Such as, in this instance, the Uffizi drawing of the head and upper body of a baby in the Uffizi, inv. 212F. The differences between the delicately beautiful *Virgin* and the somewhat awkwardly posed *Child* in the Berlin *Madonna supporting the Child in a standing Pose* (inv.108) (see notes 25–6 above) suggest that here too Verrocchio delegated the painting of the infant Christ to Lorenzo, who could in this instance make use of his master’s sculptural models as well as drawings.
- 104 The soft bones and exaggerated creases of fat of the infant are typical of Lorenzo’s mature works, but the curled-up toes are still present and the structure (or lack of structure) of the hand of the *Virgin* has much in common with that of the angel who supports the *Child* in *The Virgin and Child with Two Angels*. This beautifully preserved painting displays the immaculate craftsmanship that Lorenzo learnt in the Verrocchio workshop. The meticulous underdrawing, with fine lines drawn with a liquid medium and the point of a brush, is based on pounced cartoons, exactly as in his collaboration with Verrocchio. The combination of lilac and ultramarine blue draperies – much favoured by Lorenzo and also present in the *Madonna di Piazza* – may have its origins in *The Virgin and Child with Two Angels*.
- 105 C.C. Bambach, *Drawing and Painting in the Italian Renaissance Workshop: Theory and Practice*, Cambridge 1999, pp. 259–62; L. Syson and R. Billinge, ‘Leonardo da Vinci’s Use of Underdrawing in the “Virgin of the Rocks” in the National Gallery and “St Jerome” in the Vatican’, *The Burlington Magazine*, 147, 2005, pp. 450–63 (for the use of this term).
- 106 Syson and Dunkerton, forthcoming (cited in note 40).
- 107 See especially M. O’Malley, *The Business of Art: Contracts and the Commissioning Process in Renaissance Italy*, New Haven and London 2005, *passim*, but esp. pp. 90–6.
- 108 We are grateful to Nicholas Penny for this observation. There is clearly a division of hands in the two terracotta angels, probably designed to support a mandorla and possibly connected with the Forteguerrri monument, executed by members of the Verrocchio shop in the mid-1470s. The suggestion that the angel facing left is by Leonardo, while unlikely to be provable, is not far-fetched. See G.M. Radke, ‘Leonardo, Student of Sculpture’ in Radke et al, *Leonardo da Vinci and the Art of Sculpture*, exh. cat., High Museum of Art, Atlanta, The J. Paul Getty Museum, Los Angeles, New Haven and London 2009, pp. 15–61, esp. pp. 40–1 (and previous bibliography; the suggestion was first made by Passavant). It has also been suggested by C. Seymour, Jr. in *The Sculpture of Verrocchio*, London 1971, p. 115, that, as a young sculptor, Verrocchio himself executed the candle-bearing angel on the left of Desiderio da Settignano’s sacrament tabernacle at San Lorenzo, a suggestion that seems to us persuasive.
- 109 Inv. 212E. First proposed by Passavant 1969 (cited in note 31), pp. 58 and 192, cat. D6. See Brown 1998 (cited in note 1), pp. 124–5, and 207, notes 17–18, with earlier bibliography. The drawing has previously, and indeed subsequently, been attributed to Leonardo and Verrocchio, each working on their own, and to Lorenzo di Credi (in the first instance by Berenson).
- 110 In parenthesis, it should be added that these researches, and close examination of the tragically damaged picture itself, have convinced us that the Ruskin *Madonna* in the National Gallery of Scotland, Edinburgh is an entirely autograph picture by Verrocchio himself, dating probably to about 1472–4. It was painted, in other words, just before Verrocchio began to delegate parts (or all) of his picture commissions to Lorenzo di Credi.