
GIOTTO'S STIGMATIZATION OF SAINT FRANCIS: AN APPROACH FOR THE RECONSTRUCTION OF THE IMAGE

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ABSTRACT: For the conservation restoration of Giotto's Stigmatization, painted in the transept of Santa Croce, it was considered the possible new retouching of forms replaced by some old reconstruction, totally out of context after cleaning. The logical process followed in this specific case study was based on the drawing repetitions demonstrated by Giotto in his creations. The nature of the proposal of our of retouching it's guaranteed by the reintegration technique that allows to recognize the new reconstructed forms and the reversible binder (watercolours) will allow a future cancellation of the fills.

KEYWORDS: Wall painting; Giotto's Stigmatization; conservation restoration; historical and stylistic consideration; reintegration

Introduction

The subject of our treatment is the scene painted on the outer wall of the Bardi Chapel where it opens onto the transept of the Basilica of Santa Croce in Florence, to the right of the Cappella Maggiore. The chapel is dedicated to Saint Francis of Assisi and the pictorial decoration shows episodes from the life of the Saint from the *Legenda Maior*, the biography written by Saint Bonaventure (Bonaventura da Bagnoregio, ca. 1217-1274), that became canon for the Order in 1266. The fact of placing the *Stigmatization* on the frontispiece of the chapel says how the episode was, in a certain sense, the manifesto of the founder of the Franciscan Order, since the extraordinary fact was immediately celebrated as the salient element as well as the crowning one of the life of the Saint, dedicated to the literal following of Christ: the gift of the marks of the Passion were the proof of a perfect similitude. This would have been very evident for the Franciscan friars who founded the church, who therefore offered it for the veneration of the faithful by placing the scene high up, on the wall at the back of the transept, and quite visible within the church, even by those that would have stopped outside the

tramezzo that then divided the interior.¹



Fig. 1 View of the transept for the Bardi Chapel and the *Stigmatization* (Photo Credit Lanfranchi)

¹ The *tramezzo* was a tall masonry construction between the third and fourth pilaster, starting from the transept, that divided the part of the church reserved for the laity from that reserved for the friars. It was demolished in the Vasarian renovation of 1565. The episode of the Stigmata is described in many Franciscan sources. Official writings, that is, those commissioned by the Order should be especially considered, like the *Vita Prima* written by Thomas of Celano (c. 1190–c. 1260) in 1228, from which is derived the *Legenda ad usum chori* a more succinct version read during the Ottava for the Feast of the Saint (that is in the week before October 4); then the *Vita Secunda* and the *Tractatus de miraculis* (1252–53) also by Celano, which includes the Stigmata episode compensating for the omission made in the *Vita Secunda*. All of these works, by the 1266 decree of the Franciscan chapter, were replaced by the *Legenda Maior* written by Saint Bonaventure (ca. 1217–1274) in 1260–63. Just as for the *Legenda Minor*, the short life, the text of Bonaventure was read in the communities of the Order in place of Celano's *Legenda ad usum chori*. As an example of the spread of the story, we cite an unofficial source like the *Leggenda dei Tre Compagni* written after the *Legenda Maior* which describes the episode as well. See: *Fonti Francescane*, 2003; an extensive collection of Franciscan sources are also found at the following.

Site: <http://www.santuariodelibera.it/FontiFrancescane/fontifrancescane.htm>. For an iconographical interpretation of the whole cycle, see: Long, J. C. (1992). The Program of Giotto's Saint Francis Cycle at Santa Croce in Florence. *Franciscan Studies* 52, pp. 85–133; and, especially for the role of the Stigmata in the decoration in Santa Croce, pp. 113–117.

The *Stigmatization of Saint Francis*, together with the entire Bardi Chapel, was painted by Giotto (Giotto di Bondone, ca. 1267–1337), probably in the third decade of the fourteenth century.² The scene occupies an almost square field of about 4 meters per side. We recall that the episode tells the story of what happened in 1224 on the mountain of La Verna where the Saint, in prayer in a secluded place, received a vision of the crucified Christ in the form of a Seraph who granted him the gift of the five wounds of the Crucifixion: on the hands, ribs, and feet. The miraculous event is represented thanks to the pictorial expedient of a series of rays of light that emanate from the crucified Christ and strike the points of the body of the Saint on which the stigmata are impressed.³ The composition is therefore made up of only a few elements: the figures of Saint Francis and of the Seraph/Crucifix; the Saint in the act of making a vigorous twist toward the Seraph showing his reaction of surprise to its sudden appearance, all in a rather rough rocky landscape; to the right of the Saint, the small church of Saint Mary of Angels connected to the convent, that is, the first structures in stone that were built on the mountain. An elaborate and elegant frame of dentillation and cosmatesque intarsia, once finished with gilding and some blue areas, encloses the scene and, at the time, as today, would have contributed to its prominence on the wall. The communication of meaning is therefore trusted to the mutual

² The execution of the Bardi Chapel cycle is placed in various positions in the chronology of Giotto's activity, but most scholars tend toward a date within the third decade of the fourteenth century when the master was certainly in Florence as master builder of the Opera del Duomo. Another *terminus post quem* is identifiable as 1317, the date of the canonization of Saint Louis of Toulouse, depicted on the back wall. See: Boskovits, 2000, pp. 417–18. Alessio Monciatti recently has considered Giotto's stay in Naples beginning in 1328 as the *terminus ante quem* for the execution of the chapel's pictorial cycle based on stylistic comparisons to paintings made in that city; See Monciatti Alessio: Per l'Apparizione al Capitolo di Arles di Giotto nella cappella Bardi di Santa Croce in Firenze, in Progetto Giotto: Tecnica artistica e stato di conservazione delle pitture murali

³ The iconography changes over time: at the beginning it is an angel that appears to the Saint: beardless, with open arms and no cross, then, progressively, it is depicted as the crucified Christ. The color of the rays, in some cases, changed from gold to red beginning in the fifteenth century. The first version of the story of the Stigmata is shown, for example, in the panel of Bonaventura Berlinghieri of Pescia or in that of the Master of the Bardi Saint Francis, painted in the first half of the thirteenth century and displayed today in the same chapel. In the first two versions by Giotto, that of Assisi and the Pisan panel, the apparition is without a cross and the face is bearded like Christ; in the scene of the Bardi Chapel, however, the cross is suggested through the use of red contrasting with the blue sky. The material quality of the wood of the cross will become increasingly evident with the passing of time; by 1320–25, in the left wing of the transept of the Lower Basilica in Assisi, Pietro Lorenzetti clearly paints a wooden cross for the Crucifix that appears to the Saint.

The important meaning that the Stigmatization had for the disciples of Saint Francis is spoken of in the texts, for example that of Saint Bonaventure, "Francis, then, being made a new man, was distinguished by a new and astounding miracle, and was seen to be marked but by an unparalleled honor that had been granted unto no past age; to wit, he was adorned with the sacred Stigmata, and conformed, in the body of this death, unto the Body of the Crucified." [translated by Gurney Salter, E. (1904). *The Life of Saint Francis of Assisi*, Saint Bonaventure, New York, Dutton] See also: <http://www.santuariodelibera.it/FontiFrancescane/fontifrancescane.htm>.

relationship between the two figures, as no other spectators are present.⁴



Fig. 2 The scene of the Stigmatization of Saint Francis after the recent treatment (Photo Credit Latronico OPD)

The Giottesque painting had reached us in a precarious state of preservation, with deep fractures in the support, detaching and deformed areas, occluded by various coherent deposits and patinas and altered from an iconographic point of view by preceding treatments. Our conservation-restoration, carried

⁴ Giotto addresses the theme of the Stigmatization first in the cycle of the Upper Basilica of Assisi at the end of the thirteenth century, then in the great painted panel for the church of San Francesco in Pisa and now in the Louvre, and then years later for the Bardi Chapel in Florence. This last version is distinguished, above all, for the pose of the Saint which in the preceding ones is turned frontally with respect to the Seraph and furthermore, for the absence of the structure of the hermitage, or rather the small chapel to the left of the Saint. The Assisi version is the only one which shows Brother Leo, on the right, a figure considered by many scholars to be a late addition in the story of the Stigmata, whose bearing witness guarantees the truthfulness of the event and therefore counters eventual detractors to the miracle that immediately came forward.

out from 2011 to 2013⁵, has provided an essential opportunity to rediscover the state of the material reality of the Giottesque document; here we will not deal with the diagnosis of the deterioration or the methodology of conservation-restoration, but we will concentrate on that which emerged in the course of the treatment on the misleading interpretations of the scene created by past restorations and therefore on the decisions that we made, consequently, to recuperate an image that is more in keeping with the original.

Conservation history

The modern restoration history of our painting begins in 1869 when the restorer Gaetano Bianchi (Florence 1819–1892)⁶ completed the campaign of discovery begun two years earlier with the aim of finding traces of old decoration in the transept of the Basilica after the previous century had covered all traces of medieval painting under various layers of flat, monochrome paint. Thus, the *Stigmatization* was found in the course of Bianchi's work, after he had uncovered some years earlier the decorations inside the chapel, also hidden by whitewash.⁷ After the uncovering of the fragmentary wall painting, the artistic restoration was carried out to compensate for the various lacunae with the aim of giving back continuity to the image and, as was common practice in the period, the pictorial integration was executed according to mimetic criteria so as to be indistinguishable from the original. A photo taken between 1920 and 1930⁸ shows the condition of the painting many years after the treatment by Bianchi, in a state of apparent wholeness; there are no areas left abraded or lacunae and given the lack of documentation about possible subsequent work, we can suppose that this was still the result of the

⁵ The restoration carried out from 2011 to 2013 was performed by the team of the Opificio delle Pietre Dure; the area of focus was not only the Stigmatization, but the entire painted outer wall of the Bardi Chapel and the Tolosini Chapel. Site director: Cecilia Frosinini; conservator-restorers: Fabrizio Bandini and Alberto Felici for the face of the Tolosini Chapel, with the collaboration of Ilaria Barbetti, Bartolomeo Ciccone, Sara Penoni, and Cristiana Todaro. Maria Rosa Lanfranchi and Paola Ilaria Mariotti for the face of the Bardi Chapel; with the collaboration of Gioia Germani, Ottaviano Caruso, Serena Martuzzi di Scarfizzi and Anna Medori (Medori also for the digital reconstruction). Photographic documentation: Annette Keller (technical imaging) and Angelo Latronico; archiving and management of digital data, Culturanuova s.r.l., Arezzo; scientific analysis Giancarlo Lanterna; Carlo Galliano Lalli: Laboratorio OPD Fortezza da Basso; Alessandro Migliori; Alessia Daveri, Davide Vagnini: UniPG; Claudio Seccaroni: Enea Roma; See Bandini, F., Felici, A., Lanfranchi, M. R. & Mariotti, P. I., 2014a, pp. 102–105; Bandini, F., Felici, A., Lanfranchi, M. R. & Mariotti, P. I., 2014b, pp. 268–290.

⁶ Gaetano Bianchi, a famous painter at that time, was specialized in restoration and sought after for major discoveries and reconstruction projects with medieval decoration. In the case of the restoration and partial reconstruction of the wall paintings in the Bardi Chapel, he was particularly criticized for his Giottesque style interpretation. The work inside the Bardi Chapel began in 1852 after the dismantling of the Baroque wooden paneling brought to light the wall paintings surviving on the back wall. See Masi, 2009, pp. 9–68. However, the author does not mention the work of Bianchi in the transept, for this, see: Cappuccini, 2014, p. 50. Also see, Olson, 1997, pp. 44–55. This article shows images of all the scene with Bianchi's restorations.

⁷ For the date of when the chapels were painted over, we have a reference of 1730 in which Mons. Giovanni Gaetano Bottari (Florence 1689 – Rome 1775), in a note to Raffaele Borghini's *Il Riposo* describes that the paintings in the Peruzzi Chapel were still visible, while those of the Bardi Chapel had already been whitewashed. In this same century, we can probably also place the whitewashing of the transept. See Bonsanti, 2002, pp. 77–90.

⁸ In the photo Brogi took between 1920 and 1930, the painting appears very dirty, marked by various water infiltrations from the upper window.

nineteenth-century restoration.



Fig. 3 Condition of the scene of the Stigmatization after the treatment by Bianchi (Photo Credit Brogi, Archivio Alinari)

In 1937, on the occasion of the sixth centenary of the death of Giotto, a retrospective was planned on his painting oeuvre and that of his school in Florence including the chapel of the Bargello and five chapels in Santa Croce.⁹ In the Basilica, for the chapels Bardi and Peruzzi, only consolidation to secure the paint layers and dusting were done to render the two wall painting cycles more pleasing. For the *Stigmatization*, the most isolated and visible of all, a complete conservation-restoration was undertaken. The whole conservation-restoration was handled by the conservator-restorer Amedeo Benini (1883–1949), well-known at that time and in charge of a flourishing conservation-restoration

⁹ These were the Bardi and Peruzzi by Giotto, Pulci by Bernardo Daddi, Bardi di Vernio by Maso di Banco, and Baroncelli by Taddeo Gaddi. The conservation-restoration proposal was made in 1936 by the Executive Commission of the Mostra Giottesca and the Comitato dei festeggiamenti per Giotto. See Gurrieri, F., Gori, S., Petrucci, F. & Tesi, V. (Eds.), 1998, p. 175.

company in which his sons Cesare and Lamberto also worked.¹⁰ The treatment was carried out under the direction of the Gabinetto di Restauro, newly established at the Uffizi by Ugo Procacci (Florence 1905–1991). The results of this campaign can be deduced from the photographic documentation produced at the time: Benini carried out cleaning, removing the dust and numerous signs of dropping water damage, obtaining a clearer image, but essentially not touching the old mimetic reintegration and patches of intonaco that can be easily recognized as such, as is described in the report by Procacci in the *Rivista d'Arte* of 1937.



Fig. 4 Condition of the scene of the Stigmatization after the treatment by Amedeo Benini (Photo Credit Soprintendenza Firenze; Archivio Opificio)

¹⁰ The story of the Benini family is that of decorative painters borrowed by the restoration world as was usual at that time, they develop a particular interest for investigating the working methods of the old masters, even making good copies of some of the restored paintings. Their activity in the field of conservation-restoration takes place from the twenties to the sixties of the last century and touches all the important fresco cycles of Florence, as well as many tabernacles. For the activity of the Benini company, see: Gurrieri, F., Gori, S., Petrucci, F. & Tesi, V. (Eds.), 1998, pp. 115–184. Of the sons Cesare (1911–1993) and Lamberto (1914–1969), we know the first attended, beginning in 1942, the first class of the school of the new Istituto Centrale del Restauro, founded three years earlier in Rome on the initiative of Cesare Brandi and Giulio Carlo Argan.

Various intonaco repairs of a certain size were noted along the left side and along the frame at the bottom, another was erroneously identified inside the scene and two other smaller ones located at significant places inside the figure of the Seraph, that is, along the upper limbs.¹¹



Fig. 5 The scene of the Stigmata of Saint Francis: Mapping of the historical Fillings, OPD 2013; Lanfranchi; Mariotti; graphic processing Culturanuova srl, Arezzo

First, Bianchi had restored the motifs of the geometric pattern of the frame and furthermore, he had recreated the forearm with the right hand and the left hand of the figure. As always, the borders of the fills extended beyond the actual loss. These restorations, barely discernable in the photo of the 1920s/30s became slightly more evident after Benini's cleaning but the real change of his conservation-restoration was the addition of the rays that emanate from the hands of the Seraph to those of the Saint

¹¹ See: Procacci, 1937, pp. 377–389. For the pictures in the article, Procacci marked the outlines of the reconstructed areas in all the scenes and for the *Stigmatization*, he considered the tree on the right of the Saint a restoration along with a piece of the rock and background, while in reality, those passages of painting are original. The author is also imprecise in outlining the contours of the restoration of the right forearm of the Seraph, indicating only the hand. Procacci wrote also that the painting of the Stigmata was "generally well preserved" aside from some parts like the Seraph and the head of Eve (Procacci, 1937, p. 386). For more on the vast activity and personality of Ugo Procacci, see: Ciatti & Frosinini. (Eds.), 2005.

and that appear exactly inverted with respect to the previous version: they run from the right hand of the Seraph to the right hand of the Saint; and the same for the left, similarly to the pattern for the rays of the feet.

It is possible that not re-making the nineteenth-century fills was due to a methodological choice or not having enough time, because it would have also been evident to Benini that their quality was poor. These were rougher fills than the Giottesque intonaco; the rendering of the limbs furthermore was of mediocre quality and even the color of the reintegrations matched poorly with the overall appearance once the patina of deposits had been cleaned away. Benini himself, ten years later, carried out the conservation-restoration in the Cappella Maggiore in an entirely different way, substituting all the old fills in the decorative areas with new, well-executed ones, and removing a completely redone figure.¹²

We do not know the reason for re-drawing the rays because for now we do not have any record of the critical choices of the reintegration; presumably this reconstruction was done based on a simple analogy of correspondence between the Seraphim/Crucifix and the Saint, as for the rays of the feet. The observations made at the time of our conservation-restoration have, in fact found, in addition to the almost entire disappearance of the original gold, the distinct presence of incisions made along the original path, which would have also been visible to Benini and Procacci. It is therefore difficult to explain today the decisions that were made at that time.

The Bardi and Peruzzi chapels underwent a complete conservation-restoration only between 1958 and 1961 by Leonetto Tintori (1908–2000), again under the supervision of Procacci; this time the radical treatment was carried out by removing the nineteenth-century reconstructions with the aim of rediscovering the original character of the Giottesque painting and maintaining only the integrity of the original. At the same time, the previous reconstructions painted over new intonaco were saved, as witness to the history of restoration: once removed (by *strappo*) they were re-adhered to composite wood panels and are today preserved in part at the Basilica di Santa Croce and in part in the storage of the Soprintendenza. The *Stigmatization* was not touched in the conservation-restoration campaign of Tintori and Procacci. It only received new attention in our campaign of 2011.¹³

¹² For the conservation-restoration of the Cappella Maggiore of Santa Croce, see: Lanfranchi, 2014. Benini substituted the old restorations on the decorative parts with more precise and perfectly imitative reconstructions, while for some of the important figurative parts, like a small figure of a prophet in the right lunette, he opted for a neutral solution. In these years, perhaps his son Cesare, fresh from the Roman ICR course, influenced his choices. We must remember that Roberto Longhi, famous art critic and art historian, wrote in those same years to the Ministro della Educazione Nazionale lamenting the fact that in the Bardi and Peruzzi chapels they had not tried to remove the nineteenth-century restorations which according to Longhi "intervened so boldly on the full original... that they affected the meaning and character a lot" and still "indulging in the fact that they have been left like this for almost a century." See Gurrieri, 1998, p. 176.

¹³ Leonetto Tintori removed all the additions of Bianchi in the Bardi Chapel, detaching the figurative restorations when they were made on fills and recreating in their place "neutral" areas while the decorative portions were simply toned with a grey color. See Bonsanti, 2002. The fragments detached by Tintori and placed in storage were recently the subject of a maintenance campaign thanks to an educational workshop of the Scuola di Alta Formazione of the Opificio.

The new appearance of the scene after the last conservation-restoration; 2011-2013

During the treatment, the cleaning made all the old restorations more apparent: those along the frame, carried out mostly in tempera, now appeared to be a dull, grey tone with respect to the dazzling brilliance of the Giottesque original, carried out in *buon fresco*, but certainly they still carried out the function of connecting the parts.

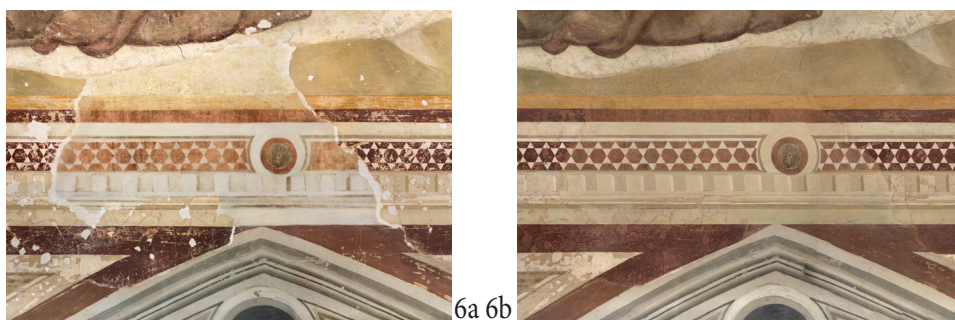


Fig. 6 a and b An example of a historical reconstruction of a lacuna on the frame, and its substitution with a new (reintegration technique) during the last conservation-restoration 2013 (Photo Credits Latronico per OPD)

By contrast, on the figure of the Crucifix, in addition to appearing chromatically dissonant, Bianchi's restorations were very clearly inadequate with respect to the surrounding areas, especially after the rediscovery of the true outlines of the lacuna with the fragments of the original hands.

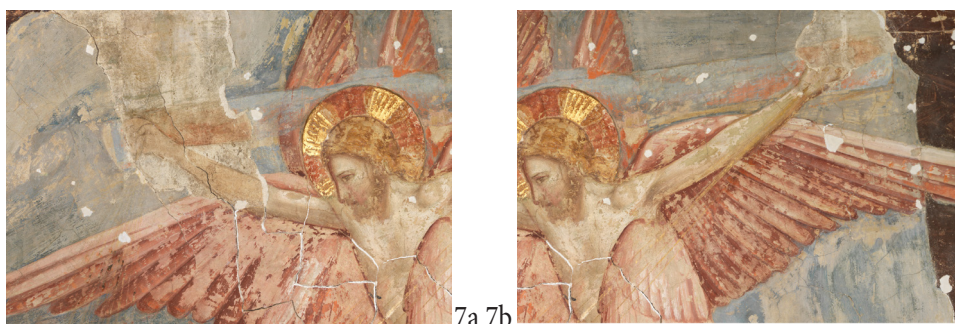


Fig. 7 a and b The arm as it appeared during the cleaning, in 2013 (Photo Credits Latronico per OPD)

From a procedural point of view, the preservation of old restorations is evaluated today on a case-by-case basis and often these are judged to be worth saving in that they are a historical record,¹⁴ especially

¹⁴ Regarding the current approach to the preservation or removal of old restorations, especially those of the nineteenth-century, including the case of reconstructions whose removal leaves the image hard-to-read or in any case fragmentary, see Tollon, 1995, pp. 9–16. See also, as an example of a past cultural context, differing in its approach to reconstructions in being almost neo-purist, the 1979 treatment of the Velluti Chapel in Santa Croce carried out by the Opificio, where some old figurative reconstructions were dismantled, substituting them with “neutral” areas created with the method of *astrazione cromatica*. For this technique, see Casazza, 1981, pp. 61-78.

if they are in good condition and when they compensate for a loss that it is otherwise impossible to reconstruct. According to current conservation-restoration theory, in fact, if there are no unequivocal indications in the original pictorial parts, surviving and surrounding the loss, it is not possible to reconstruct some elements without it being in an arbitrary manner. Brandi had indicated that it was necessary to evaluate the pictorial text limiting oneself „to carry out the suggestions implicit in the fragments themselves or available from authentic evidence of the original state.”¹⁵ Certainly, in the case of the Bardi Chapel *Stigmatization*, the figural elements of the arms of the Seraph, although incongruous and of little artistic value, were fundamental constituents in the representative context of the scene, so careful thought was required to decide whether or not to remove them.

During the cleaning the original path of the rays that emanated from the Seraph became quite evident, a path that Giotto had indicated with a snap-line and multiple incisions to show a multiplication of lights for each ray, surrounded by shorter rays. It was therefore possible to judge the rays recreated during the previous restoration treatment as misleading, the result of naive simplifications and a misrepresentation of the old marks. The original version aligned our *Stigmatization* with the previous portrayals by Giotto, first in Assisi in the cycle of the Upper Basilica and then in the great Pisan panel of Saint Francis, now in the Louvre, in which the rays are inverted arriving at their destination with respect to the source, as if they were reflected in a mirror image.¹⁶ As these are therefore essential elements for the right reading of the representation, it seemed important not to accept the situation inherited from a previous error of interpretation and thus we sought to return to the original course.

Technical solutions

The issue of the rays posed above was not the only problem and specifically this was an easily resolvable situation in which, to render justice to the Giottesque plan, the removal of the later additions was not complicated, nor did it cause any damage. As for the main rays, we reconstructed them in length and width but not in thickness, using only glazes of mica watercolors.¹⁷ We must remember, in fact, that Giotto had used a double metal leaf of gilded tin; by using only mica, we therefore avoided a mimetic reproduction of materials and guaranteed the detectability of our work while reaching the desired aesthetic effect of a shiny line though in a more muted tone with respect to that obtained with gold

¹⁵ In the first publication of 1963 of Brandi's *Teoria del restauro*, the subject of the potential unity of the work of art and loss compensation appear following the arguments made by Brandi during his twenty years directing the ICR of Rome (1940/60). For the quotation, see: Brandi, 1977, p. 17.

¹⁶ According to some Giotto scholars, this would have given an evangelical significance to the scene according to which, Saint Francis, with the Stigmata, would have become a reflected image of Christ. The painter or his patrons could have taken inspiration from the text of Saint Paul referring to the Christian who "beholding as in a glass the glory of the Lord, are changed into the same image" (2 Corinthians 3:18). In this sense, Saint Francis appears as the reflection of the Crucifix, because of this the play of rays follows the manner of a reflection: from the right of the Seraph to the left of the Saint and also from left to right. Galili, 2013, p. 283–296. We must note, though, that in the various contemporary and earlier representations of the subject, often the direction of the rays changes with respect to specular play and, in effect, in the texts of the Franciscan sources, there is no reference to the text of Saint Paul.

¹⁷ The width was determined thanks to the slight depression left by the loss of the original gold on the underlying paint layer.

leaf.¹⁸ For the minor rays, whose original presence is shown by the incisions, but whose width is unknown, we were limited to indicate the path corresponding to the few remaining dark traces from the use of the tin laminate.

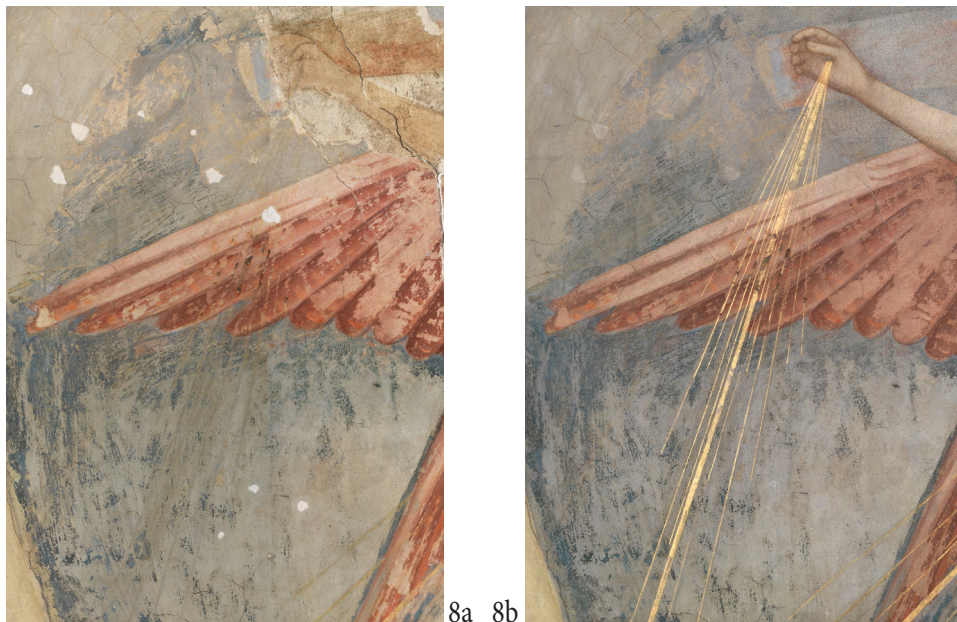


Fig. 8 a and b. Suggesting the rays using micas watercolors (Photo Credits Latronico per OPD)

Both from a practical and theoretical point of view, the resolution of the remaining problem was more difficult, that is, the issue of keeping or substituting the arms and portions of the hands of the Seraph/Crucifix, made, as described, in an approximate and inadequate way but whose presence in the figural narrative was, in our assessment, essential for granting a coherent vision of the entire composition totally concentrated on the presence of the two figures.

In addition, thanks to cleaning away the nineteenth-century fills on the borders, some original fragments belonging to the hands and edges of the arms of the Crucifix came to light, making it difficult to preserve the reconstructions toning them to match chromatically with the surrounding painting as we had for the reconstructions in the frame. The discovery, on the other hand, motivated us to explore the possibility of making a new reconstruction, based on these important and unseen elements.

As the rediscovered fragments by themselves did not present enough indications for a total reconstruction for the sections of missing arms, it was necessary to refer to historical comparisons, tied to the *modus operandi* of the bottega of Giotto, as seen in the Giottesque worksite at Assisi and also for his major creations on panel.¹⁹ This research focused on the phase of planning the painting, that is on which system Giotto would have used to ensure a consistent and high quality creation, though using

¹⁸ With mica in watercolor pans: Iriodin® Merck; Kremer pigmente GmbH&Co. See: <https://www.kremer-pigmente.com>.

¹⁹ Zanardi, 2002.

a variety of helpers. Both for the Assisi mural painting and for the panel paintings, the use of *patroni* (cardboard templates) have been found to create the heads. In particular, for panel paintings in which infrared reflectography allows the underdrawing below the paint layers to be seen,²⁰ by comparing different panels, both contemporary and separated by decades, it has been verified that the contours and many drawn details inside the figure can be superimposed, suggesting that actual cartoons were reused. Giotto's bottega therefore had available a rich repertoire of drawings on paper that could be reused over time for different paintings that ensured the final product which then, with painting, could be given various qualities. This discovery reinforced our research on the work of Giotto at the time of the Bardi Chapel, for analogous elements, useful to reconstruct the lacuna of the arms, with the conviction that also in this case the artist could have used a cartoon or *patrono* used elsewhere. Naturally, the surviving original fragments of the arms of Christ/Seraph and their anatomical shading have served to sustain or negate the likelihood of this working hypothesis. Therefore, our attention was directed to the figure of Christ on the Crucifix of Ognissanti, restored a few years ago at our own Institute.



Fig. 9 Giotto's Crucifix painted for the Church of Ognissanti in Florence (Photo Credit Cinotti OPD)

With digital imaging processing we were able to make various tests to evaluate possible reconstructions. Early on, it was found that it would be impossible to use a simple mirror image of the left arm of the Seraph/Crucifix. Therefore, we moved on to check the feasibility of using the right arm of Christ from the Ognissanti Crucifix. The drawing of this, obtained with reflectography, was examined and compared with the image of Santa Croce; then the modeling of the hands was compared, and thus we arrived at a digital reconstruction of a possible suitable solution.²¹ From a printed image of the arm reduced to the right scale, a *spolvero* was made to transfer the design to the new fill; and finally, with the method of *selezione cromatica*, it was possible to obtain the shading of the flesh tones of the forearm and hand. The same procedure allowed us to reconstruct the left hand that was painted as if it were open in the previous restoration, while now it is shown slightly closed, according to the more traditional iconography of the Crucifixion that is found, in fact, also in the example of Ognissanti.

²⁰ Bellucci & Frosinini, 2010. pp. 167–177. Here, for example these are compared by attempting to overlay them: the drawing of the face of the Madonna di Borgo San Lorenzo and that of San Giorgio alla Costa or those for the Christ of the Croce of Santa Maria Novella and the Crocifisso of Ognissanti.

²¹ The survival of a small fragment of a finger of the right hand provided a precise edge for positioning the reconstruction.



Fig. 10 a and b Reconstruction of the missing parts with the technique of *selezione cromatica* (Photo Credits Latronico OPD)

As is known, *selezione cromatica*²² is a way to allow the reintegrated areas to be recognized as such and using watercolors as the medium consents an easy reversibility whenever a future critical vision wishes to develop a different solution. (See Figure 2)

In conclusion, we can affirm that this choice of reconstructing a significant lacuna from the figurative point of view was dictated by a kind of analogic/philological process justified by the necessity of substituting reconstructions that were deemed unacceptable in the context of Giotto's painting. The solution was a fruit of a much broader study on the working methods of the artist. The resolution should be considered as a unique case relative to this specific context, able to reconcile aspects that are important to the interpretation of the image for the recovery of its original iconography, and for the requirements for the completeness of the representation particularly associated with its religious surroundings.

²² For this technique see Baldini 1978. Casazza 1981. pp. 29-36.

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