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**The restoration of Giotto's
Wall Paintings in the
Scrovegni Chapel of Padua
according to the principles
of Cesare Brandi's Theory**

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2. Notes on the main causes of deterioration and the principal areas affected by loss of pictorial text
 - 2.1. abrasions
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*Padua, civic museum - Fioravanti Penuti: Scrovegni chapel and the Palace, incision from a drawing
of Alessandro Buzzacarini 1842.*

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*Padua, civic library, iconografia padovana xxxvi-7385
Mary's Wedding procession, 1871*

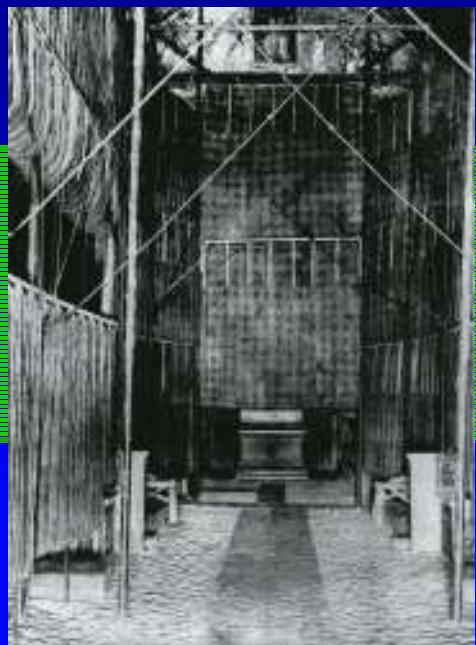


*Padua, civic library, iconografia padovana xxxvi-7385
Gabriele Benvenisti e Vincenzo Grasselli : drawing of
the presbytery of the chapel*

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Leonetto Tintori





2. Notes on the main causes of deterioration and the principal areas affected by loss of pictorial text (abrasions)



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Lacuna in the cou
earthquake

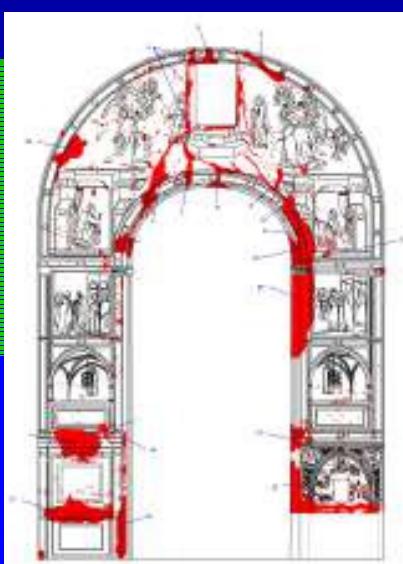
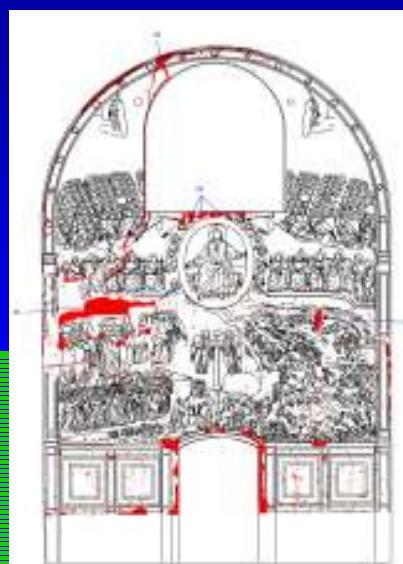


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Also in the triumphal arch, lower left, there are two large lacunae, probably due to an earlier insertion of architectural elements that were later removed.



3. How lacunae were reintegrated during previous restorations



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A few years ago, that is, during the campaign some of the more important repairs.

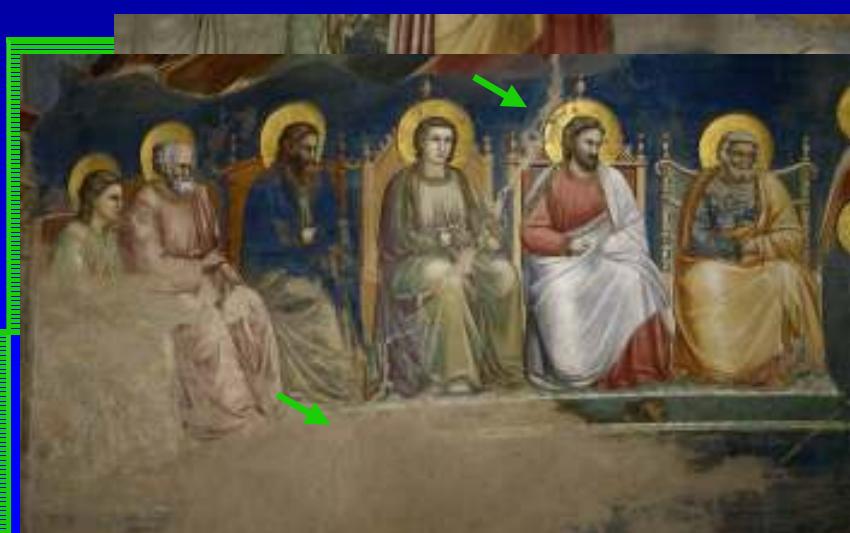
For example, marked "Vecchio Restorato" dated probably nineteen and Tintori, the two v-

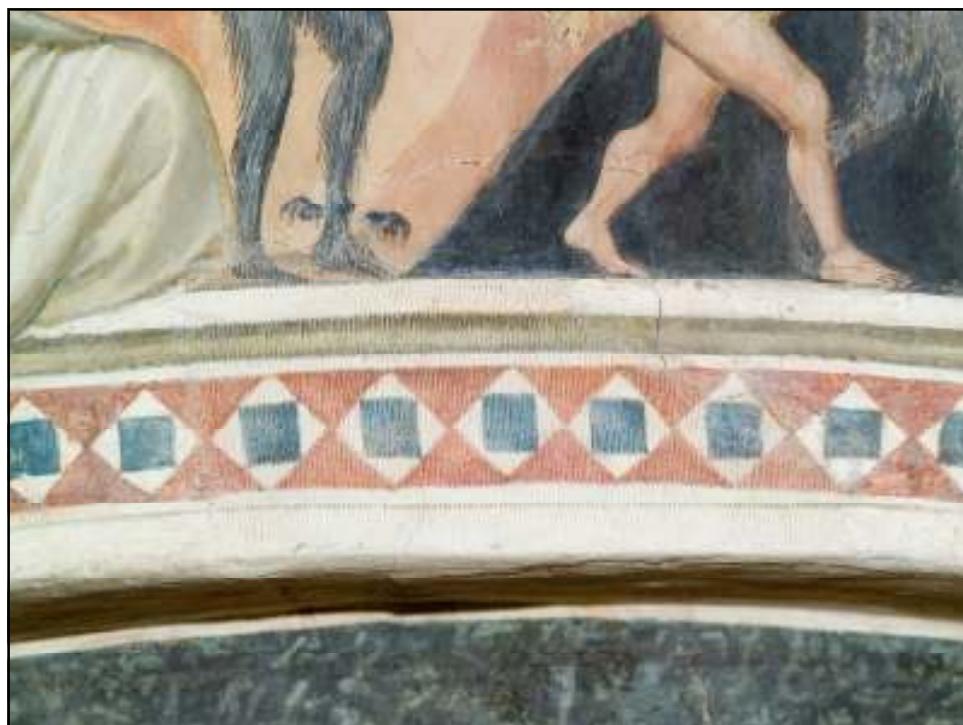


4. Cesare Brandi's Theory of Restoration and the reconstruction of the pictorial text during the latest restoration



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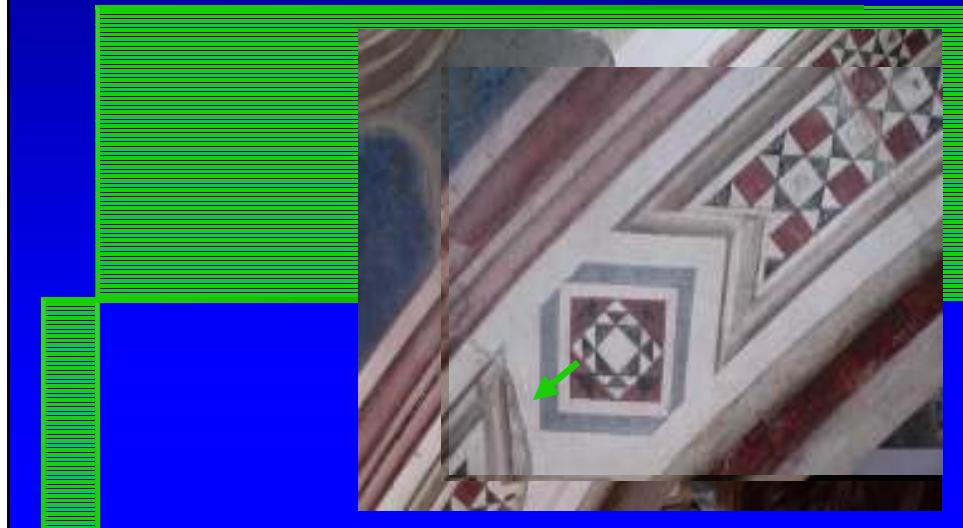




**4. Cesare
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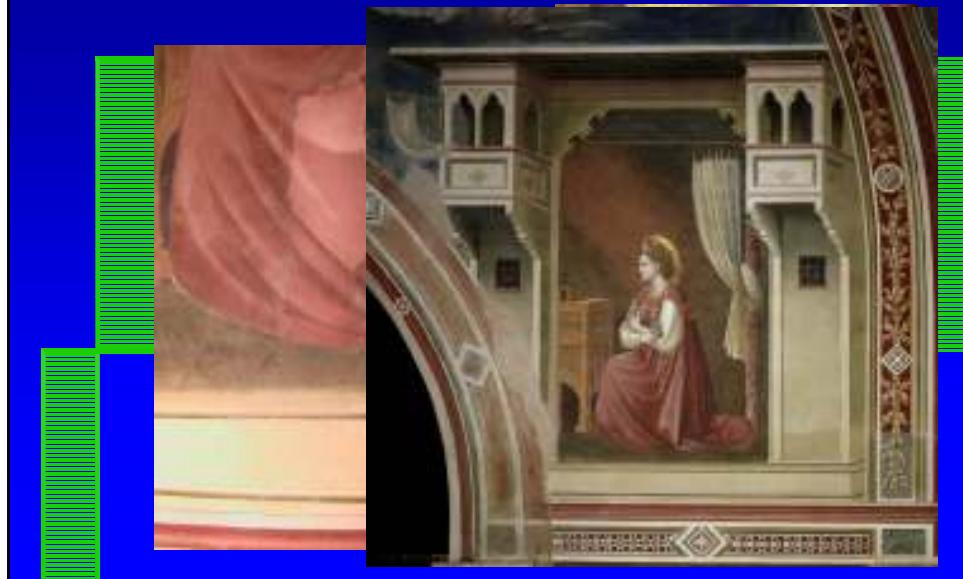
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Balancing the blue backgrounds was a complex operation. The azurite painting, done "a secco" over a gray preparation, was very fragmentary throughout, especially in the scenes of the first register. The extensive lacunae exposed a situation that was chromatically discordant and far from the objective of unity sought by Giotto as previously described. The various giornate that often compose the broad azurite areas were frescoed with rapid gray paint strokes, which were neither particularly homogeneous nor all alike.

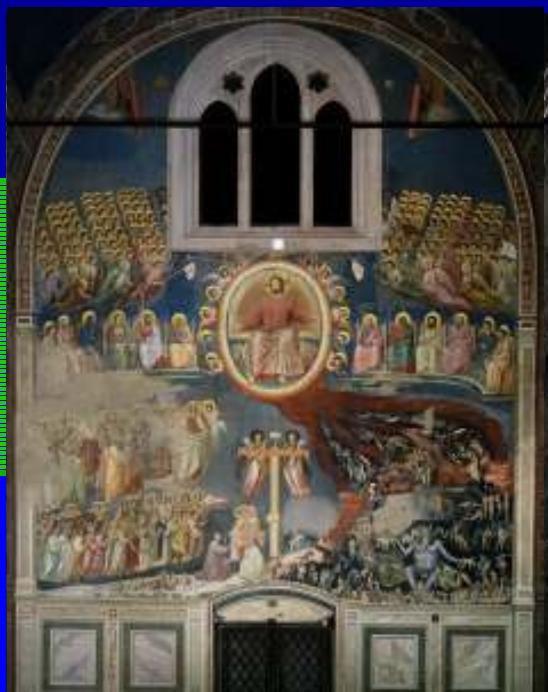


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The use of a very light watercolor glaze in order to optically lower the chromatic irregularity helped to bring the whole back to greater unity and facilitate the reading of the narrative.



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The restoration of Giotto's Wall Paintings in the Scrovegni Chapel of Padua according to the principles of Cesare Brandi's Theory

Francesca Capanna

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I am going to start this presentation with a

1. Brief conservation history and some notes on preliminary studies for the recent restoration project

I will mention the most significant dates more closely relating to the loss and subsequent reintegration of the pictorial text.

In 1817, the porch in front of the chapel entrance suddenly collapsed. A long period of neglect had led to its dilapidation, certainly like the adjacent Scrovegni Palace, which was demolished in 1827. These events alarmed the city of Padua and, after lengthy negotiations with the owners, they purchased the monument for 54,971 lire.

A committee chaired by Pietro Selvatico was established by 1867 to look after the conservation of the building and its invaluable paintings. It is interesting to note that the committee's first objective – with pioneering foresight – was not to treat the paintings but to study the building itself and its conservation conditions. A thorough photographic campaign was immediately carried out by the photographer Naja di Venezia, and in 1869 the architects Augusto Caratti and Leopoldo Toniolo conducted surveys of each scene, producing detailed drawings of the extent of damage found. Then again, in 1871, the engineers Gabriele Benvenisti and Vincenzo Grasselli produced plans and perspective views of the chapel. In 1869, the restorer Gugliemo Botti was engaged to carry out a sample restoration treatment of the frescoes of the counter facade and then worked on restoring the paintings until 1871. The treatment was interrupted for about ten years and was finished by his disciple Antonio Bertolli in 1886.

The next restoration campaign occurred after the Second World War, and was started because the paint surface was found to be heavily covered with dust due to the sandbags that had been stacked against the walls as protection

from bombing raids. This work was done by Leonetto Tintori. Starting from the counter facade in 1957, it was finished in 1963.

In 1971, only a few years after the end of the last restoration, Francesco Valcanover raised the alarm because of some damage already visible on the Giotto paintings. The cause of the alterations was certainly not due to the treatment itself, but more likely because of a lack of environmental control where the work was housed and the general conservation parameters. Indeed, such control would have identified among the causes of deterioration the rapid growth in environmental pollution during that period causing sulphating of the painted surfaces, compounded by a heavy visitor presence. The damage suffered by the chapel following the 1979 earthquake led the authorities responsible for the monument to react quickly, and they requested the assistance of the Italian Central Institute for Restoration (ICR). For this purpose, the Institute initiated a detailed program of control and integrated treatment. While the initial diagnostic studies of the Giotto cycle, the building and the surrounding environment gradually progressed, various passive approaches were put into place in order to improve the conservation conditions. Among these were: the regulation of rainwater and ground water; the implementation of a “technologically equipped entry” to control visitor flow; and, a system of microclimatic control.

Once this phase ended and the results were verified, it was then possible to continue with the planning and implementation of direct treatment of the paintings themselves.

The project was drafted at the end of this long study phase and after running didactic worksites in 1989 and 1992 in order to make observations and maps of data related to the techniques of execution and the condition of the painted surfaces.

In 1994, the ICR carried out a pilot restoration worksite on the lunettes of the triumphal arch (Mission of archangel Gabriel), during which it was possible to develop a correct treatment methodology.

On 30 March 2000, a Memorandum of Intent was signed between the Ministry for Cultural Heritage and Activities and the City of Padua for conservation of the wall paintings of the Scrovegni Chapel, to be carried out under the ICR starting in July 2001 and ending in March 2002.

The complex treatment required in only nine months for a work of such great importance was only feasible because of the availability of a group of highly qualified conservator-restorers. Having had the same training, they worked extremely well together.

2. Notes on the main causes of deterioration and the principal areas affected by loss of pictorial text

The studies conducted on the monument identified the principal deterioration factors that had caused the loss of pictorial text as follows;

2.1. abrasions

Abrasion of the plaster and paint layer is present in all the areas of the chapel where there had been past moisture damage associated with dissolution of the calcium carbonate in the plaster, crystallization of soluble salts or water flow. In particular, rainwater infiltration was found in the area where the entry porch (which collapsed in 1817) had been attached to the building. Indeed, the damage is extensive on the counter facade wall with the row of Virtues; the phenomenon is, however, also evident in the area where the vault, left wall and triumphal arch come together (Mary's wedding procession, starry sky and decorative bands, Mission of archangel Gabriel), due to defects in the roof.

2.2. lacunae

Over the years, the Chapel suffered serious static stress due both to its particular architectural configuration and its location, and to the building history of the complex to which it belongs. These factors were further compounded by a succession of exceptional events, such as bombardment and earthquakes. They were the cause of the fall of portions of the plaster, but fortunately affected a relatively low percentage of the painted surface. They are located principally in the area of the triumphal

arch and the portion of the vault adjacent to it, and to a lesser extent in the counter facade.

Also in the triumphal arch, lower left, there are two large lacunae, probably due to an earlier insertion of architectural elements that were later removed.

3. how lacunae were reintegrated during previous restorations

Although quite disturbing to the reading and comprehension of the pictorial text, the abraded areas had never been given any aesthetic treatment for presentation. Instead, all the lacunae in the plaster had already been repaired in the course of previous treatments.

During the recent treatment, however, much of the stuccoing was found to be in poor condition and chromatically incompatible with the cleaned paint surface. Therefore, it had to be replaced.

In view of that operation, it was important to map which stuccoes had to be removed and which could be kept. It also seemed to be advisable to accompany the graphic documentation with a report describing the various types of mortar, the surface treatment and the reintegrations observed. That body of information would be useful in reconstructing the chapel's conservation history, and would otherwise be lost in the course of removing the stuccoes.

Various types of materials were identified in the filling and aesthetic presentation of the stuccoing, probably a result of different restoration phases. The different types of stuccoing bear tangible witness to the restorations that the Giotto wall paintings had undergone over the years.

Numerous areas were stuccoed by Botti and Bertolli during the nineteenth-century restorations. They used a lime-sand mix that was very similar to the original, and reintegrated the surface with colored areas suggesting the volumes of the painted figures and architectural elements, following the indications given by Cavalcaselle, who was then a member of the above-mentioned scientific committee established in 1867.

There is a heavy presence of stuccoes carried out by Leonetto Tintori during the treatment performed between 1957 and 1963. In many places he removed

the surface mortar of the previous stuccoing, replacing it with a mix of sand bound with synthetic resin; in two cases the mix was spread on Masonite board cut in the outline of the lacuna concerned. One of these, in particular, involved the robe of the Virgin in the “Annunciation”. In his notes, Leonetto Tintori documents the presence of sinopia visible in the plaster underneath. In fact, he states that following the removal of the stuccoing Botti had done in that area, he saw the sinopia of the Virgin’s foot (from the typewritten report of LEONETTO TINTORI, entitled: Giotto nella Cappella degli Scrovegni a Padova, Raccolta dei rilievi Tecnici Sull’Arte ed il Mestiere del Maestro, on page 64 we read: “*Dalla figura della Vergine, in un tempo precedente ai restauri del Botti, era malauguratamente caduto un frammento di intonaco, coinvolgendo un piede dell’Annunciata. Botti, dopo aver consolidato i bordi della caduta, ne aveva riempito il vuoto con una malta nuova. Nel restauro del 1961 questa malta è stata rimossa perché fatiscente e sotto è stato trovato il piede disegnato in rosso sull’arriccia, il che fa pensare che Giotto, prima di affrescar, definisse le sue composizioni con un tracciato di sinopia.*”). Nonetheless, several elements make this statement doubtful.

1) The lacuna is not located in correspondence to the Madonna’s foot, 2) the photos taken by Naja in 1867 show this lacuna before Botti’s stuccoing, and one can see the bricks of the wall structure and not the arriccia. During our restoration, Tintori’s filling was removed, showing the situation documented in the 1867 photographs. Moreover, removing the Masonite board with its surface treatment of a mix of sand and Vinavyl was rather simple and did not involve any risk to underlying plaster layers.

One can imagine, even though without great conviction, that in writing his final report after the fact, Tintori confused this lacuna with another one, similar in shape, located in the drapery of the kneeling Virgin, and not in the Annunciation scene in the nave, but in the scene in the presbytery of the Announcement of Mary’s death. Indeed, in this case, removal of the stuccoing revealed the presence of sinopia, albeit only tiny traces near the edge.

A few elements demonstrate that, apart from the major and monumental restoration campaigns, there were also some other events that were more in the line of emergency repairs.

For example, the reintegrations marked by the inscription “Vecchio Restauro” [“Old Restoration”] cannot yet be dated precisely, but they probably occurred between the nineteenth-century restoration and Tintori’s, perhaps between the two world wars.

4. Cesare Brandi’s Theory of Restoration and the reconstruction of the pictorial text during the latest restoration

Giotto’s paintings in the Scrovegni Chapel can serve as an example explaining why a restoration must be considered a “critical act *par excellence*” as Brandi theorized.

If a “*restoration consists of the methodological moment in which the work of art is recognized, in its physical being, and in its dual aesthetic and historical nature, in view of its transmission to the future*”, the comprehension of the image depicted and the message it carries is fundamental to the choice of pictorial reintegration. So, what is the key to reading the decoration of the chapel? It is not simply a sequence of separate narrative scenes divided by decorative bands, but an organic whole: an architectural structure that, resting on a solid marble foundation rises with Cosmatesque ribbing towards the divine “sky” beyond the earth. To quote Giuseppe Basile, “A building within a building, a spatial and perspective box that opens towards the painted scenes”. The broad azurite areas in the scenes and the vault are thus not a naturalistic rendering of the sky, but background: the extreme limit of the visual field and earthly space – a celestial vault and divine perfection. Any decision regarding aesthetic presentation that does not bear this aspect in mind will not have recovered the “potential oneness” of Giotto’s work.

Accordingly, for a proper aesthetic presentation it was considered fundamental to make uniform all the parts where it was impossible to reconstruct the painted image, as well as restoring continuity and consistency to the architectural elements and the azurite fields.

To meet the first requirement, on the one hand the abraded plaster was smoothed out below grade so that it was not a figure standing out from the pictorial text, and on the other hand the new stuccoing that could not be reintegrated was repaired with the same mortar: a lime-sand mix as close as possible to the original in grain size and color.

Some large stuccoed areas that had been reintegrated during previous restorations and were still in good condition regarding color and constituent material, were retained and chromatically balanced with the original. All the stuccoing done in the past with neutral tones or tones that clashed with the original, in correspondence with elements of architectural ribbing, were replaced with stuccoing that was reintegrated with *tratteggio*. [*Tratteggio* is a technique whereby color is applied in fine lines that blend in with but can be distinguished from the original on close examination.]

In the triumphal arch, however, the need to reconstruct the integrity of the architectural ribbing conflicted with respect for the chapel's historical case. Complete reintegration of the large lacuna that – beyond the architectural element – also cut vertically through the entire scene, would have impeded understanding of the chapel's conservation history and of the effects of static movement. A compromise solution was adopted in agreement with the international committee of wall-painting experts that was convened when the restoration work began. The committee was composed of Manfred Koller, Maurizio De Luca, Isabelle Pallot-Frossars, Cristina Acidini Luchinat, Andrew Rothe and Theo Hermans.

The lacuna was filled completely with a mortar similar to the arriccio except for the part corresponding to the Cosmatesque ribbing, where most of it was filled by *tratteggio*, and a small part was left indicating the presence of an old crack that passed through the entire thickness of the arch.

Two other points in the triumphal arch were discussed at length by the aforementioned committee. One was the lacuna in the Virgin's robe in the Annunciation scene, as it is right in the center of one of the most important images – symbolic of the chapel, of Giotto's work and perhaps of all Italian art – and had never been chromatically adjusted. The other was at the lower right of the scene of the "archangel's mission", which corresponded to the detail of the small, spread-out cloth, unfortunately having the same shape and size. In the first case, there seemed to be enough elements for a *tratteggio* reconstruction, but it was considered wise to make a preliminary test on paper to submit to collective judgement. In the second case, even though the fragmentary presence of the cloth made it difficult to interpret the lacuna, its unusual shape (everyone on the worksite called it the "periscope") made it

stand out strongly against the pictorial text. Confident that today's public of experts and art lovers is familiar with Brandi's concepts and would easily be able to distinguish *tratteggio* from the original, it was decided to reintegrate the "periscope" with one of the slightly lower-toned interpretations proposed. Balancing the blue backgrounds was a complex operation. The azurite painting, done "a secco" over a gray preparation, was very fragmentary throughout, especially in the scenes of the first register. The extensive lacunae exposed a situation that was chromatically discordant and far from the objective of unity sought by Giotto as previously described. The various *giornate* that often compose the broad azurite areas were frescoed with rapid gray paint strokes, which were neither particularly homogeneous nor all alike. (An example is the scene of the Deposition.) Moreover, in some cases Giotto deliberately prepared the parts to be overpainted a secco with azurite using a dull gray background or bright white, with the obvious purpose of giving lesser or greater chromatic intensity to the paint layer that would go on top. (An example of this technique is the Baptism scene. Here, surrounding the figure of God the Father, an intensely luminous area was painted in fresco with whitewash; this, however, as can be seen in a few fragments of color still present on the surface, was meant to be covered a secco with azurite like the surrounding area prepared with the traditional gray.) The use of a very light watercolor glaze in order to optically lower the chromatic irregularity helped to bring the whole back to greater unity and facilitate the reading of the narrative.