Framing the Miraculous:

The Devotional Functions of Perspective in Italian

Renaissance Tabernacle Design

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Perspective was one of the key tools used by Renaissance artists to represent the natural world, but it had another function. It could also be used as a means of revealing heaven and the heavenly. It is this latter aspect of perspective – often overlooked in the literature – that is to be investigated here. The article considers why the perspectival backdrop became such a ubiquitous motif in tabernacles designed to house the Eucharist, relics or miracle-working images (see, for example, *plate 1*), maintaining that its popularity derived less from its ability to present the viewer with a convincing illusion of natural phenomena than from its ability to heighten the sense of contact with the heavenly, thus aiding devotion. In analysing these tabernacles, it identifies five devotional functions associated with perspective, namely, 'focusing devotion', 'revealing the hidden', 'enhancing the size of the holy', 'distancing the heavenly' and 'radiating holiness'. These functions, so the article contends, were to have an impact beyond the micro-architectural world of liturgical furnishings, influencing perspective use in large-scale architecture, as is shown through

the analysis of two works by Donato Bramante, S. Maria presso San Satiro and his celebrated Tempietto.

Before embarking on the exploration of the functions of perspective in tabernacle design, however, it is imperative to take into account the principal devotional functions of the tabernacles themselves. Only by doing this first can the possible functions of perspective be identified and fully understood.[1] The type of tabernacle under discussion was in effect a 'shrine', and as such one of a range of forms of architectural enshrinement in the fifteenth century that included four-columned canopies (*ciboria*) and, on a larger scale, the increasingly popular centrally-planned church. Chief among their functions was that of housing and protecting the holy objects enshrined inside – such as the consecrated eucharist, relics of saints, and miracle-working images – all of them objects that were of cultic significance and widely-believed to have had a special sanctity that went beyond the merely 'holy'. Two other functions were barely less important than this – that of 'presenting' the holy object housed within to its devotees, and that of 'exalting' it in the most decorous fashion possible, in a way that was appropriate to the heavenly qualities of the holy object reserved inside.[2] It follows, therefore, that when preparing designs for such tabernacles, these three roles – 'housing', 'display' and

'exaltation' – would have been a fundamental concern of patrons and sculptors alike, and this underlying concern begs the question of whether these functions were in some sense linked to the choice of the perspectival backdrop. So, what part did perspective play in the 'housing', 'display' and 'exaltation' of objects of special devotional significance?

Tabernacles

About two decades after Brunelleschi's invention of the key principles of perspectival rendering, Bernardo Rossellino designed a eucharistic wall tabernacle that drew on this still relatively new representational technique (*plate 1*).[3] Designed in 1449 for the women's ward in the Ospedale di S. Maria Nuova in Florence, it is the earliest surviving – though not necessarily the first – example of what was to become a highly-popular type.[4] What was distinctive about this new format was not so much the architecturally-conceived frame with its socle, its fluted Corinthian pilasters, its entablature and pediment, all of which have precedents in earlier Florentine tabernacles such as the one designed in 1441-43 by Luca della Robbia for the church of S. Egidio in the same complex, but rather what lay inside that frame.[5] There, at the heart of the tabernacle, is a low-relief scene in an exaggerated or accelerated natural perspective. An architecturally conceived space, this scene resembles a room with a chequered floor and four piers supporting a crowning

barrel-vault. The sides of the room have been left open, allowing angels to emerge from offstage to pray before the holy sacrament reserved at the tabernacle's centre. By contrast, the back of the room is closed and completely occupied by a lockable bronze door or *sportello*, behind which is the space for the reservation of the eucharist. Above the bronze door is a lunette with a chalice and host, flanked by yet more adoring angels, a scene that makes it abundantly clear what the *sportello* below houses; and above the lunette is the vault, decorated with octagonal coffering through which miraculously appears the dove of the Holy Spirit swooping down to the chalice and host below.

This format went on to be remarkably influential. It was quickly embraced by Florentine sculptors and soon thereafter spread throughout central and northern Italy. In fact, it would not be an exaggeration to say that it is the one employed in most eucharistic tabernacles designed in Italy during the second half of the fifteenth century. In Florence, for example, Desiderio da Settignano used it for the tabernacle he made for San Lorenzo (*plate 2*);[6] Mino da Fiesole took it up in the one he designed for S. Croce (*c.* 1474);[7] and Giuliano and Benedetto da Maiano adopted it on several occasions in the late 1470s and 1480s as can be seen in the tabernacle for the Badia in Arezzo (1478), and in another now in a private collection in Turin of *c.* 1480.[8] But the type was not limited to their workshop. Another designed for

the Badia a Settimo near Florence probably in the 1480s has been ascribed to the da Maiano workshop but is probably not by them (*plate 3*). Outside Tuscany, it was equally popular. In northern Lazio, it was already widespread by the end of the century as demonstrated by such examples as the one inside S. Giovanni Evangelista in Vetralla (perhaps of the 1450s or early 1460s), another in Civitacastellana Cathedral (between 1484 and 1492) commissioned by Rodrigo Borgia before his election to the pontificate as Alexander VI, and yet another in Viterbo Cathedral (*c*. 1500).[9] The idea also spread quickly north so that by the end of the century it was employed in Venice by members of the Lombardo family for the two tabernacles in S. Maria dei Miracoli (1480s) and in the Seminario Patriarcale (*c*. 1500).[10]

The idea of using perspective to create a 'fictive' space at the heart of these eucharistic wall tabernacles was also, and perhaps rather surprisingly, taken up with enthusiasm by sculptors designing free-standing eucharistic *ciboria*, the earliest extant example of which is from S. Pier Maggiore in Florence, probably designed by Desiderio da Settignano in the 1460s (*plate 4*).[11] In the case of this tempietto-like design, each of its six sides is designed like a miniaturised version of the Rossellino tabernacle, with a perspectively-designed space at its heart, but minus the attendant angels and other figures. Other later examples include the *ciborium* designed by Mino da

Fiesole for Volterra Cathedral (1467-71), where the perspective is not immediately visible but present on close inspection, and much more evidently in the ones designed by Benedetto da Maiano for S. Domenico in Siena (*plate 5*) and the Collegiata in S. Gimignano (after 1475).[12]

Even though the perspectival setting was most commonly employed in eucharistic tabernacles, it was also used for tabernacles designed to house other objects worthy of special veneration such as relics and miracle-working images. Among reliquary tabernacles of this sort is the tabernacle of S. Fina designed by Benedetto da Maiano in S. Gimignano (*plate 6*),[13] that of S. Caterina da Siena designed by Giovanni di Stefano in S. Domenico in Siena (1466),[14] and that of a relic of the blood of Christ designed probably by Tullio Lombardo for the sacristy of S. Maria Gloriosa dei Frari in Venice (after 1479).[15] Examples of this perspective format used to house miracle-working images are rather more rare, but among them are the tabernacle of the Madonna di S. Trinità designed by Isaia da Pisa (*plate 7*), now in the Museo Civico in Viterbo,[16] and one designed to frame the image of S. Maria della Peste in Viterbo of 1494.[17]

It is clear from these examples that this perspectival format, although eucharistic in origin, was later used to house other objects worthy of special veneration, including miracle-working images and relics. What all three types of object had in common was the potential to work miracles and as such they

had an equivalent status as objects of veneration.[18] As a consequence it is perhaps not so surprising that there is considerable evidence of an exchange of ideas used in the design of their respective housings.[19] What seems to have been of primary significance in the borrowing process was the status of the object to be housed rather than its iconographical type. For example, Rossellino's perhaps innovative use of perspective to create a fictive space right at the heart of a eucharistic tabernacle of 1449 may well have been inspired by a structure designed to house a miracle-working image: the Cappella del Crocefisso in S. Miniato, Florence, probably designed in 1447-48, a year or so before Rossellino's tabernacle, and erected to house the miracle-working crucifix of San Giovanni Gualberto (*plate 8*).[20] It is here that Rossellino would have found a barrel vaulted canopy with octagonal coffering and openings at the sides – a design closer in form and function than Masaccio's Trinity fresco in S. Maria Novella, usually considered the primary source for the idea.[21] So a eucharistic tabernacle, it would appear, was at least in part inspired by a structure to house a miracle working image, and it is conceivable that the process might work in reverse.[22]

But why the perspectival format became such a dominant feature of tabernacle and *ciborium* design is an intriguing question that requires more attention than it has hitherto been given. It is important to stress that perspective was certainly not

indispensable. Donatello and Luca della Robbia had both produced impressive wall tabernacles – for St Peter's in Rome and S. Egidio respectively – that eschewed the use of perspective, and these could easily have provided alternative models that might have prompted a completely different development. Yet it was the Rossellino perspectival type that prevailed, which leaves us with the question 'why'?

The Perspectival System in Tabernacle Design

In order to answer this question fully, it is necessary to analyse the ways in which perspective has been used in these tabernacles, and it becomes clear, on close investigation, that the perspectival system used is not quite the same as the geometrical construction used to represent a three-dimensional space on a two-dimensional plane, as employed by Brunelleschi in his celebrated panels, by Masaccio in the Trinity fresco (*c*. 1426), and as described by Alberti in *De pictura* (1435). One difference is that the scene in these tabernacles is depicted in relief, and as a consequence in three not two dimensions. This system is one that exaggerates natural perspective by squashing or reducing space, and it is sometimes referred to as 'accelerated perspective' ('*prospettiva accelerata*') or, rather confusingly, as 'false perspective' ('*falsa prospettiva*').[23] Nevertheless, it is important to stress that, when laying out a '*prospettiva accelerata*', sculptors would have used the same geometrical

system, at least in principle, as the one employed by painters working in two dimensions. A more significant difference can be identified if we take Bernardo Rossellino's tabernacle as an example. Although inspired in aspects of its compositional format by Masaccio's Trinity fresco in S. Maria Novella of *c*. 1425-26, its perspectival system is quite different.[24] Where Masaccio's scene was constructed with a single vanishing or construction point, Bernardo Rossellino's tabernacle actually has two (*plate 9*). The orthogonals formed by the coffers in the vault and the lintels over the side openings converge on a point just below the top of the bronze door, while the orthogonals at the bottom of the scene, represented by the junction between the floor and side walls meet close to the bottom of the door.

This apparently unconventional arrangement requires some explanation. As all the orthogonals – represented by the coffering of the vault – converge neatly on a single point rather than on multiple random points roughly corresponding to the place where a construction point might be, it is clear that Bernardo has used a 'geometrical' rather than an 'intuitive' construction system. Thus it is reasonable to assume that he was aware of the geometrical system advanced by Brunelleschi and Alberti and used by Masaccio.[25] From this it might be inferred that he did not fully understand the principles of the system, but there may be another answer. What makes it likely that there is, is the fact that almost every other tabernacle mentioned in the

discussion so far adopts the Rossellino two-point construction system or one that is very similar. Among them is Benedetto da Maiano's tabernacle in S. Barnaba of the 1480s. Here, the edges of the coffers of the vault converge on a point located towards the top of the bronze door while the lines represented by the junction between the floor and side walls meet close to the bottom of the door. The same is also true of the tabernacle he designed for the relic of S. Fina in the Collegiata in S. Gimignano, as well as of the one at the Badia a Settimo.

The other tabernacles analysed here all tend to be a variation of this Rossellino type, with one construction point for the ceiling and one for the floor, but with additional construction points that meet at a vertical line joining the two principal ones.[26] Desiderio da Settignano's tabernacle inside S. Lorenzo in Florence, for example, has the two principal construction points formed by the orthogonals of the ceiling and floor, but it also has others formed by the lines of the entablature, and which lie on the vertical line linking the main ones (*plate 10*). The same system can be found in the Eucharistic tabernacle at the Badia a Settimo (*plate 11*), in Benedetto da Maiano's S. Fina tabernacle (*plate 12*) and in Isaia da Pisa's Tabernacle of the Madonna di S. Trinità (*plate 13*), and in many others such as Giovanni di Stefano's tabernacle of S. Caterina in San Domenico, Siena.

In these last cases the reason for giving the entablatures different vanishing points from the one used for the vault is relatively easy to explain and it results from a problem inherent in the two-construction-point system. Had the sculptors chosen to make the orthogonals of the entablature converge on the vault's construction point, the entablature would appear to decrease in size much too rapidly as it receded, with the result that the architecture would appear distorted. Had they instead chosen the lower vanishing point, the entablature would then have appeared unrelated to the vault above. So, the only possible solution was to create multiple construction points along the vertical line that ran from the lower one to the upper one.

This problem could, of course, have been avoided altogether had the sculptors decided to use a single construction point. So why did sculptors choose the two-point system, especially given that it often resulted in awkward design problems that could have been avoided using a single-point system? And, why did it become so phenomenally popular? One possible answer to these related questions lies in the nature of the medium. These tabernacles were works of sculpture, essays in high relief; and the space, though exaggerated by means of perspectival illusion, remained a real space. All this meant that the perspectival scene at the heart of the tabernacle could and often would be seen from a raking angle. When a tabernacle, using the fully accelerated, single-point perspectival system was

viewed from such an angle, it would have appeared significantly distorted. Not only would the entablature have appeared to descend too steeply, but the adoring angels would either have had to diminish in a correspondingly awkward fashion or else remain largely the same size resulting in a conflict of scale with the surrounding architecture.

Thus it is worth suggesting that the system of using two construction points in high-relief tabernacles was dictated by the desire on the part of sculptors to make their designs work well from multiple view-points and not just from one ideal point as was the case with the single-point system used by many painters. That this may well be the case is supported by the fact that other tabernacles were designed to be seen from multiple viewpoints. This is obvious in the case of polygonal eucharistic *ciboria*, but has also been shown to be the case in Donatello's wall tabernacle for St Peter's.[27] Designing a wall tabernacle to work visually from multiple viewpoints would be especially useful in circumstances where a group of devotees such as a confraternity was gathered in front of it. It is worth noting in the light of this that confraternities devoted to Corpus Christi were becoming increasingly popular throughout Europe from the late fourteenth century onwards, a trend that may have acted as a spur to the rapid development of the eucharistic tabernacle in the fifteenth century.[28]

These observations suggest that the use of perspective in these tabernacles was not primarily intended as a scientific exercise, as an investigation into the principles of perspectival design.[29] By extension it may be inferred that since sculptors were consciously introducing spatial distortions into their designs, they were not interested in perspective for its own sake. For them, as long as the rendering of space approximated correct geometrical perspective, that was all that mattered. It follows from this then that perspective as used in tabernacles must have had other functions.

The Devotional Functions of Perspective

It is worth considering the possibility that the use of perspective was in some way related to the nature of the objects that the tabernacles were designed to house. As has already been mentioned, these tabernacles usually housed relics, the eucharist or miracle-working images, all objects that were considered to have a special sanctity, and ones that belonged not just to the terrestrial sphere but in a very real sense to the heavenly one too, raising the possibility that the use of perspective in tabernacles was intended in some sense as an aid to devotion.

Focusing devotion

One possible explanation for the popularity of the perspectival setting in the second half of the fifteenth century

may have had something to do with its ability to help direct the devotee's gaze to the object of their devotions.. All of these objects of veneration, whether image, eucharist or relic, tended to be rather small, and their small size posed a significant problem for anyone who wanted to draw attention to them in a church. Sculptors and their patrons were faced with the conundrum of how to make an object, which had very little visual presence, but which was of enormous devotional significance, prominent in a church. This problem could be overcome in a variety of ways. One was to place the object on a major axis within the building, an axis that would lead the eye to the object of veneration. This was commonly the case with miracle-working images, which were often placed on the principal altar in a church, as happens at S. Maria delle Grazie in S. Giovanni Valdarno a centrally planned *santuario* of *c*. 1512.[30] It is also the case with reliquary and eucharistic tabernacles, usually located in the fifteenth-century on secondary axes within the church as with the chapels of S. Fina in S. Gimignano (see *plate 6*) and S. Caterina in Siena.[31] But if the object was in a fixed position off a major axis and awkwardly located in relation to the rest of the church, problems of capturing the devotee's attention would necessarily arise.[32]

Placement on an axis of symmetry was not always sufficient in itself to draw attention to a small object. A method, often used in conjunction with axial alignment, was to use

hanging lights to draw the attention of devotees. Honorific lights had long been associated with the eucharist, relics and miracle working images and were usually placed before the object of veneration.[33] Yet, as with axial placement, such lights normally drew the spectator's attention to a zone within which the object of veneration was reserved and not directly to the object itself. A third technique was to set the cult object in a much larger frame. This too helped the church-goer to focus on the object of veneration sometimes successfully as in the church of the Madonna di Fontegiusta in Siena of 1479, [34] and sometimes less successfully at the church of S. Maria della Pietà in Bibbona designed by Vittorio Ghiberti in 1482 (*plate 14*).[35] In the latter example, the frame around the altarpiece on the high altar does little to direct the viewer's gaze to the tiny miracle-working image which is actually located slightly below it. So the use of a frame did not necessarily guarantee that the cult object would be given greater prominence. These techniques were useful for attracting attention to the general area around a cult object but not necessarily good at taking the eye directly to the object itself.

This was where the use of perspective became especially useful. Its use aided devotion by leading the eye directly to the cult object in a way that the other techniques outlined above could not. Here perspective was being used not so much for the creation of space but rather as a compositional device helping to

draw devotion to the cult object. In this respect perspective was used in much the same way as by painters in their altarpieces, where it was used to help the devotee focus on the protagonists. Such an approach can be found, as is well known, in Fra Angelico's *San Marco altarpiece* where the perspective orthogonals generated by the carpet take the eye to the Virgin and Child at the painting's centre, or in Domenico Veneziano's *Annunciation* predella from the St Lucy altarpiece where the perspective leads the eye to a door in the background, presumably intended to have a symbolic value. Yet perspective may well have had further useful functions.

Revealing the hidden

One of these is what might be called 'revealing the hidden'. A perspective structure with its converging lines implies a focal point, but when that focal point is hidden the perspective continues to allude to that point even though it may be invisible to the viewer. This particular characteristic of perspective was immensely useful when designing objects in which the cult focus was hidden from view, as is the case in Eucharistic tabernacles. The perspective scene at the heart of the tabernacle was designed to provide the illusion of access. The devotee was drawn into the space by means of the perspective, only for the way to be barred by a bronze door, which hid the object of devotion from view. Relics, the eucharist and miracle-working

images were rarely on view. Their visibility was highly regulated, generally limited to certain feast days. Relics were encased in reliquaries, with the reliquary casing often acting as a shield, preventing the devotee from seeing thecontents;[36] the consecrated eucharist was normally reserved behind the locked bronze door of a tabernacle;[37] and miracle-working images were normally kept hidden from view by a veil, door or some other masking device.[38] The reason for keeping them hidden lay in the widespread devotional belief that over-exposure would devalue their miracle-working properties. This notion is revealed particularly clearly in the law passed by the Florentine government in 1435 in connection with the miracle-working image of Our Lady of Impruneta, which stated that 'Sacred objects and those dedicated to God are normally respected and held in greater reverence if they are rarely seen. The magnificent priors … [wish] therefore to prevent the singular devotion to the panel of Our Lady of Impruneta from being diminished by bringing her to Florence too frequently.'[39]

The tabernacle's perspective thus induced in the devotee a sense of yearning for access to something that is unreachable. But it does more than this. It assisted the devotee in focusing attention on an object that he or she could not actually see. It allowed the devotee to focus by implying the presence of the cult object and by drawing the eye to the veiling device that rendered the cult object invisible, thereby suggesting that there

was something holy beyond it. In effect it became a substitute for 'seeing'. It could do more than this, however. By means of the converging orthogonals, it guided the eye to the construction or vanishing point, and because the design was three-dimensional this point existed in real space, a real space that was located at a point behind the door or veil, in the very space where the object of devotion resided (*plate 15*). Thus perspective in these tabernacles was designed to take the devotee's imagination beyond the veil or bronze door, from this earthly world into the realm of the heavenly.

This latter observation would also explain why the three-dimensional perspective construction was so popular with free-standing eucharistic *ciboria* such as that by Benedetto da Maiano for S. Domenico in Siena. Although such tabernacles are centralised in design, itself an excellent device for focusing devotion on its contents, the centralised design does not take the eye and mind through to the heart of the *ciborium* quite so effectively as does an accelerated perspective. The orthogonals of the coffered vault, when extended to their construction point, meet behind the door at a point in space inside the *ciborium* itself. In effect, the perspective takes the devotee's imagination right inside the tabernacle, beyond the structure's outer skin. So *ciboria* of this sort have, in effect, a double system for helping the devotee to focus on the object of veneration – one being the centralised design, with radiating axes focusing on a single point

at the heart of the tabernacle, and the other being the perspectival scheme applied to each of the *ciborium*'s sides.

Enhancing the size of the holy

Another interesting property of this perspective system is that when unveiled or opened the cult object would have appeared larger than it actually was. Any object placed at the focal point of this three-dimensional perspectival system has its size enhanced by the architectural illusion of receding space. As the space recedes repeated architectural elements in the perspective scene – such as columns or coffers in a vault – actually become smaller, but these diminishing features are read as all being the same size. The devotee will therefore associate the size of the object with the scale of the architecture at the deepest part of the illusion. The object will as a result *appear* much larger than it actually is. In this way small objects that are of special devotional significance, but have no commanding visual presence in themselves, have their visual impact significantly enhanced by the illusionistic effect.

Distancing the heavenly

Perspective has yet another important function in these tabernacles, symbolic rather than practical. In creating a fictive space and placing the object of veneration at the back of it, the relic, host or image is pushed – at least notionally – further away

from the viewer. Thus these objects of veneration are distanced from the devotee. This distancing allows the symbolic difference between earth and heaven to be maintained, and in so doing helps to retain the exalted status of the cult object. Equally important is the fact that while it notionally distances the cult object, it does not actually distance it, allowing it to stay physically close to the devotee thereby enhancing the sense both of its presence and proximity to the devout viewer. So perspective allows the cult focus to be distant and close at the same time.[40]

Radiating holiness

All of the functions of perspective listed above are about the devotee 'looking in'. But there was also a reciprocal relationship between the devotee and the cult-focus, in which the roles of the subject and object could be reversed. Just as the devotee could 'look in' so the cult-focus, the saint, had the ability to 'look out' at the devotee. It was a commonplace in miracle stories for saints to be regarded as being present in the relic or image that represented them, and by extension to be attributed with sensory powers.[41] It follows from this that just as the devotee could see the cult-focus, so the cult-focus could 'see' the devotee. Thus the perspective may well have another function – expressing the radiation of the holiness and miracle-working properties of the cult-focus outwards towards the devotee. So, perspective,

through the fan-like nature of the design of the vault acts as a visual metaphor for the radiation of holiness out towards the devout recipient.[42]

Influence on Large-Scale Architecture

While these uses for perspective emerged and developed in the the micro-architecture of tabernacles, there is some available evidence to suggest that they influenced the thinking behind some larger-scale architectural works, especially ones associated with miracles or designed to house particularly holy objects or sites.[43] The potential scope of this influence is enormous and for this reason the study will restrict itself to two works by Donato Bramante who may have been among the earliest architects to exploit the potential of perspective for devotional purposes in his buildings. One is S. Maria presso San Satiro in Milan and the second his celebrated Tempietto at S. Pietro in Montorio – both of which, like the tabernacles already discussed, were erected for the express purpose of enshrining the focus of a cult – a miracle working image in the case of the first and a holy site associated with martyrdom in the case of the second. But before turning to the buildings themselves, it is worth noting that Bramante was probably aware of the existence of such perspectively-designed tabernacles before he was first employed as an architect. This is suggested by the fact that he began his career as a painter specialising in architectural

perspectives, an interest that would no doubt have drawn him to any architectural design incorporating perspectival features. Although no trip to Florence is documented, it can be shown that he already had a detailed knowledge of Brunelleschi's Florentine architecture by the time he designed his first building, S. Maria presso San Satiro, as is evinced by his use there of the assymetrical L-shaped corner pilaster borrowed from the Pazzi Chapel at S. Croce and the niched exterior of the adjacent structure of S. Satiro taken from S. Maria degli Angeli.[44] Moreover, it is not beyond the bounds of possibility that this type of tabernacle had already reached Northern Italy. It was certainly in use in Venice in the 1480s.[45]

Bramante's first major experiment with the accelerated perspective system can be found in S. Maria presso San Satiro in Milan (*c*. 1482). This church, when entered for the first time, appears to be a barrel-vaulted, Latin cross church (*plate 16*).[46] But this impression is quickly dispelled when the visitor begins to move through the building and realises that what he or she sees is, at least in part, an illusion. While the five-bay nave, transepts and domed crossing are precisely what they appear to be – real spaces that can be moved through – the three-bay chancel is not. It is instead a fictive space, an illusionistic representation of one, designed in imitation and extension of the nave articulation.[47] Far from being about ten metres deep, as it appears to be from a distance, it is in fact little more than just

one – as a longitudinal cross-section of the building clearly reveals (*plate 17*). This illusion is not represented on a flat surface but rendered in high relief sculpture, and coloured to resemble and harmonise with the rest of the church.[48] Such an illusionistic *tour de force* is unprecedented in fifteenth-century architecture, and it has consequently been the subject of much scholarly interest.

The chancel's unconventional form is usually explained in one of three interrelated ways. First, it has been linked with Bramante's prior expertise as a painter of perspectives, a specialism exemplified well by the so-called Prevedari engraving, which was executed in 1481 only a year before he is recorded as working at S. Maria presso S. Satiro.[49] In doing so, some scholars have maintained that S. Maria presso S. Satiro's perspectival chancel is an attempt on Bramante's part to extend his skill as a painter of architectural perspectives to 'real' architecture, probably a new field for him at this time, in order to promote himself as an architect.[50] Second, it has been interpreted as a clever response to problems posed by the church's site. Two interrelated factors restricted the final design of the building: one was that the transepts had already been built as part of an slightly earlier, smaller scheme; and the other was that the transepts were bounded at the liturgical east by the via Falcone, an important thoroughfare in the centre of Milan, with the result that there was nowhere beyond the line established by

the eastern wall of the transepts to build a chancel. Bramante responded, so the argument goes, by building an illusionistic chancel instead of a real one.[51] And last, it has been explained as a manifestation of Bramante's desire to create the impression of a centralised Greek cross church by replicating the form of the three-bay transepts in the chancel. The result was a Greek cross with one arm slightly extended, in the manner of Brunelleschi's S. Spirito in Florence.[52] All three explanations may well be right in varying degrees, but they may not represent the whole story. What these explanations ignore, at least for the most part, is what lies at the focal point of Bramante's perspective – the miracle-working image of the Virgin Mary, the very object the church was built to house (*plate 18*). By contrast with the vast amount written on the church, the image itself has received relatively little attention.[53] In order to understand fully Bramante's choice of a perspectival rendering of the church's east end it is necessary to consider the cult and its image as it provides a clue as to why Bramante came up with this particular design.

The original miracle is recounted in Fra Paolo Morigi's *Santuario della città e diocesi di Milano* published early in the seventeenth century, the earliest known source for the miracle cult.[54] The passage relates that in 1242 a young man called Massazio da Vigonzano, after gambling away everything he owned including his clothes, took out his frustration on an image

of the Virgin and Child that was painted on the wall of a cemetery attached to the church of San Satiro.[55] He furiously attacked it with a knife, stabbing the Christ child in the neck, causing blood to gush from the wound.[56] News of this miracle spread quickly and a cult soon developed around the image. Whether this thirteenth-century act of sacrilege really took place or was fabricated to promote the cult in the fifteenth century is of little consequence since it found a parallel in another documented act of desecration dating from September 1477, as is clear from a letter written on 26 September by Vincenzo delle Galline, the innkeeper of the nearby Falcon tavern, to the eight-year-old duke of Milan, Giangaleazzo Maria Sforza (b. 1469, r. 1476-94).[57] In this letter, he requests that the vandals who had desecrated the image be sought and punished. This 'new' act of sacrilege seems to have given the cult a greater impetus, and to have increased its popularity, leading ultimately to the building of the church. Whether the duke pursued the vandals is not known, but ducal interest and involvement in the cult can be demonstrated in other ways. Two years later, in 1479, Giangaleazzo Maria Sforza and his mother the regent, Bona of Savoy, approved the collection of offerings and then, in September 1480, the new statutes of the confraternity.[58] Indeed, they appear to have regarded themselves as being among the cult's most fervent followers, as is suggested by the fact that both son and mother had their portraits painted on the miracle-

working image as devotees, in a manner akin to 'donor' figures. There they are shown in an act of obeisance, kneeling before the Virgin and Child, with the young Giangaleazzo represented larger than his mother, as was befitting of his status. The decision to have their portraits painted on the miracle-working image seems to have been taken relatively early in the history of the cult and probably before 7 October 1480, the day on which Lodovico 'il Moro' Sforza took over from Bona of Savoy as regent for the young Giangaleazzo Maria.[59]

By paying close attention to a miracle cult and its cult-focus, we can usually infer much about the genesis of a pilgrimage church's design, and this is certainly the case with S. Maria presso S. Satiro. This particular cult, as we have just seen, was not only Marian but Christological.[60] After all, it was not the Virgin that was injured in the assault by Massazio da Vigonzano, but the Christ Child; and it was the Christ Child who 'responded' to this attack by bleeding. This fact was certainly appreciated by Paolo Morigi, who in his account of the cult recognized that the miracles were received from 'the glorious mother of God *and her son* [my emphasis]'.[61] That it was the Christ Child's blood that was shed gave the cult-focus a eucharistic character that may well have prompted Bramante to draw on Christological models – eucharistic tabernacles – because they were especially appropriate for this particular project.[62] Moreover, the project was analogous to the

tabernacles considered above in other ways too. Not only was its

perspective designed as a setting for an object of special sanctity

– a miracle-working image – but the choice of perspectival

format may have also been prompted by the way in which

perspective works as a devotional aid. It is easy to see how the

five devotional functions of perspective associated with

eucharistic tabernacles would have been of benefit here,

drawing the devotee's attention to the object of devotion,

assisting the devotee in contemplating an image that would be

hidden for much of the time, symbolically distancing the image

from the devotee, increasing its size and presence, and giving

the impression that its spiritual power was being radiated.

A degree of caution is necessary, however, as the framing

of the image has undergone several transformations over the

centuries, making it virtually impossible to reconstruct its

original appearance. The present arrangement of the altarpiece is

largely the product of a nineteenth-century restoration campaign

in which the image was provided with a completely new frame.

The original one was a much more elaborate affair. It was

described in a contract of 1482 as having friezes, pilasters,

cornices, capitals, bases and 'feet', as well as eight dolphins,

four vases, as well as a dome, balcony, image of the Resurrected

Christ and twenty angels.[63] Although no visual record of it

survives some idea of its appearance can be found in parallel

works such as the elaborate framing of Giovanni Angelo del

Maiano's Sant'Abbondio altarpiece in Como Cathedral of 1510-14.[64] In effect, this means that we do not know how the image related to the perspective construction. Moreover, there is also doubt as to how far in front of Bramante's perspectival apse the altar stood. A document describes it as standing 'under the cupola', which could mean either directly under the centre of the dome or to one side of it where the altar is now.

There is a problem too in determining the full nature of the perspectival system originally conceived at S. Maria presso San Satiro. While the top part of the perspectival system is clear enough, with the orthogonals of the fictive barrel vault converging somewhere in the region of the thaumaturgic image, the bottom part is less clear because of changes made to the building's fabric. In the sixteenth century Carlo Lombardi replaced the floor under the dome and the nineteenth-century restoration of the building was so extensive that it is now difficult to determine what the original floor looked like. All that can be said is that there is no evidence that a matching perspectival system once rose from the floor with orthogonals converging towards the image as happens in the tabernacles discussed above. Despite such caveats, the presence of a miracle-working image at the centre of a perspectival composition suggests that Bramante may have drawn on the earlier models as sources of inspiration for how to go about both

enhancing devotion and exalting the miracle-working image that lay at its heart.

The perspective may also have had a devotional function that was peculiar to this building. Although nothing is known about how this particular pilgrimage church was used, it does have one feature common to many pilgrimage churches of this era: two doors close to the cult-focus and close to the cross axis in the building, which would have allowed a procession of townsfolk to file past the image in communal devotion (*plate 19*). S. Maria delle Carceri in Prato (1485), S. Maria della Pieta in Bibbona (1482), S. Maria del Calcinaio in Cortona (1485), and S. Maria della Peste in Viterbo (1494), to name just four, all have this feature. The two doors in the east wall of S. Maria presso San Satiro may well have been intended for use in this way. Even if this was not their function, it would have been standard practice for a civic procession to move past a miracle-working image along a cross axis in the building. Attempting to reconstruct the effect that this would have had on the participant is worthwhile. The devotee would approached the image from one side and when coming from this angle the perspective would have appeared significantly distorted. It was only when the devotee stood immediately in front of the image that the perspective would have worked to its full effect. Thus, just at the point when the devotee engaged with the miracle-working image, the architectural effect would have seemed like a

revelation. The 'miraculous' properties of the *trompe l'oeil* architecture would have enhanced the miracle-working character of the image itself at precisely the right moment. For the devotee it would have seemed almost as if the image had caused this to happen at that instant they prayed before it. Thus perspective in this case is not used to create a 'natural' world but a 'heavenly' one.

Bramante's perspective can perhaps now be seen in a more rounded way, not just as an exercise in perspective, or as an attempt to solve a siting problem, though this must be part of the explanation, or indeed as an attempt to give pilgrims the impression that they were standing in a centrally-planned church, but also as a devotional aid. It helped them to focus their attention on the object of their prayers, to imagine an image that for much of the time would have been covered, to feel close to the image while at the same time being symbolically distanced from it, and finally to provide them with the experience of witnessing a heavenly revelation.

The second of Bramante's works, his Tempietto at S. Pietro in Montorio in Rome of *c*. 1510, even though not 'perspectival' to the same degree as S. Maria presso S. Satiro, may also have been inspired by the perspectival systems and ideas found in the micro-architecture of eucharistic tabernacles and reliquaries, especially eucharistic *ciboria* (*plate 20*). This is not so surprising for, like them, it was built to house something

of enormous devotional significance for pilgrims: in this case the supposed location of St. Peter's martyrdom.[65] In this respect it belongs to the medieval tradition of the *martyrium,* a building designed to mark the spot (*locus sanctus*) on which a martyr met his or her end, or else to house relics associated with them. And, as a consequence of its function as a *martyrium*, the Tempietto has often been read, in my view quite rightly, as a 'tabernacle' or as a large-scale 'reliquary'.[66] In the light of this reading, it is worth reflecting upon how pilgrims were meant to experience the shrine and whether the Tempietto's design was conceived to assist them in their devotions.

These questions can be addressed if we look at how Bramante transformed his chosen model – the ancient Roman round peripteral temple – and did something rather different with it. Unlike the surviving examples of such buildings, buildings like the so-called Round Temple near the Tiber (*plate 21*) and the Temple of Sybil in Tivoli – the Tempietto has pilasters running around the outside of the building's cylindrical core in such a way that they respond to the columns of the encircling colonnade (*peripteros*). That Bramante should have altered the format of the models by adding pilasters in this way is surprising and all the more so since it caused him some tricky design problems. Not only do the metopes above the circuit of pilasters appear too cramped, but the pilasters are placed so close together that they clash with the main portal.[67] While it is

possible that Bramante may have been responding to earlier reconstructions of ancient Roman temples which do ring the sanctuary wall (*cella*) with pilasters – reconstructions such as those to be found in drawings by Francesco di Giorgio[68] – the argument advanced by Arnaldo Bruschi that these pilasters were added to stress the radial conception of the design is completely convincing.[69] What is more, this radial conception would have been emphasized still further had Bramante's ideal scheme for the complex been realised. Known from a woodcut of its layout published posthumously in 1540 by his self-styled pupil Sebastiano Serlio in Book IV of his treatise on architecture, it shows that the Tempietto was to have been set at the heart of a circular courtyard. This courtyard had its own ring of columns that were designed to align radially with both those of the Tempietto and the pilasters of the *cella* wall (*plate 22*).[70] Moreover, the columns of this cloister colonnade have larger diameters than that those of the Tempietto itself suggesting that they are also taller, thereby reinforcing the idea of expansion not only in plan but in elevation too. The radial nature of the design was interpreted by Bruschi in his magisterial work on Bramante as being fundamentally centrifugal in character, representing and expressing the role of St Peter, the first pope, in disseminating the word of God and church doctrine to the four corners of the globe.[71]

But there is another reading, which does not necessarily invalidate Bruschi's argument, but which suggests that the radial nature of the design may have another dimension to it. Rather than being read as centrifugal, the design can just as easily be construed as centripetal, with the radials guiding the eye to the centre, the heart of the design. According to this reading, Bramante may well have used the radial design as a means controlling or enhancing pilgrims' experience of the shrine. He would have realised that the principal reason for visiting the site for pilgrims was to venerate the location where St Peter was martyred, and that what mattered to pilgrims was the precise spot where that event was believed to have taken place.[72] Given that 'place' is an abstract idea without substance and therefore unlike a relic which has a material existence, he would have realised the importance of helping the pilgrim focus on that spot. Although the Tempietto is a marker in itself, the radial nature of the design, takes the eye beyond the cella wall into the very heart of the structure to the very place where St Peter's crucifix stood. In this respect it is very close in conception to the eucharistic *ciboria* which have already been discussed. In particular, there is a parallel with the use of perspective in the eucharistic *ciboria*. Although, the ideal design published by Serlio is not strictly speaking perspectival, the relationship between the larger outer columns of the cloister colonnade and the smaller ones of the Tempietto itself would have resembled a

perspectival scheme and when the capitals of the larger outer columns in Bruschi's reconstruction are linked with those of the smaller inner ones, the compositional lines would have taken the eye not just inwards but downwards to the spot in mid-air where St Peter was suspended upside-down on his inverted cross (*plate 23*). So, just as the accelerated perspective of the eucharistic *ciboria* took the devotee's mind beyond the outer casing of the *ciborium* walls to the interior where the consecrated eucharist was housed, so the diminution of the columns in the ideal design of the Tempietto would have taken the pilgrim's attention through the outer walls of the Tempietto to the sacred heart of the design where St Peter's cross would have stood.[73]

It would appear, therefore, from these two examples that Bramante had learned much from the micro-architecture of tabernacles and reliquaries about the various ways in which objects worthy of special veneration could be exalted and about how the devotional experience of devotees might be enhanced. Between them Bramante's two structures could be read as performing, in their quite different ways, all the devotional functions of perspective previously associated with tabernacles that have been identified above: focusing devotion, revealing the hidden, enhancing the size of the holy, distancing the heavenly, and radiating holiness.

Notes

[1] For the history of eucharistic tabernacles in the Italian Quattrocento, the primary resource is Hans Caspary, *Das Sakramentstabernakel in Italien bis zum Konzil von Trient. Gestalt, Ikonographie und Symbolik, kultische Funktion*, Trier, 1964. See also: Hans Caspary, 'Tabernacoli quattrocenteschi meno noti', *Antichità viva*, 2, 1963, 39-47; and Hans Caspary, 'Ancora sui tabernacoli eucaristici del Quattrocento, *Antichità viva*, 3, 1964, 26-35. Other analyses often focus upon regional variations: see Xavier Barbier de Montault, 'Les tabernacles de la Renaissance a Rome', *Revue de l'art chretien*, 27, 1879, 257-284; Maurice Hope, *The Venetian Chapel of the Sacrament in the Sixteenth Century*, New York and London, 1979, 1-18. More recently there is the important contribution of Francesco Caglioti, 'Altari eucaristici scolpiti del primo Rinascimento: qualche caso maggiore', in Jorg Stabenow, ed., *Lo Spazio e il Culto. Relazioni tra edificio ecclesiale e uso liturgico dal XV al XVI secolo*, Venice, 2006, 53-90. Much useful material that relates to the theme under discussion is also provided in Jack Freiberg, 'The Tabernaculum Dei: Masaccio and the "Perspective" Sacrament Tabernacle', MA dissertation, New York University, 1974. Apart from these contributions which attempt to provide an overview of tabernacle development, literature has focused on individual examples, and these will be referred to in the notes below.

[2] These three functions are seldom discussed in detail in the literature on Italian tabernacles and equally neglected is the issue of how artists responded to these requirements in designing the tabernacles. As a consequence, the questions of how artists designed the tabernacles to display the cult object (monstrance) and to exalt it in their designs remain largely unanswered. For a recent, fundamentally important study of these issues in the context of Northern European tabernacles, however, see Achim Timmermann, *Real Presence: Sacrament Houses and the Body of Christ, c. 1270-1600*, Turnhout, 2009.

[3] This tabernacle has since been moved and is now located inside the church of S. Egidio in the hospital of S. Maria Nuova; see Anne Markham Schulz, *The Sculpture of Bernardo Rossellino and his Workshop*, Princeton, 1977, 52-58.

[4] Precisely who was responsible for the first such tabernacle is still the subject of debate. It is well-known that Brunelleschi designed a tabernacle for the church of S. Jacopo oltr'Arno in 1426-27, which could conceivably have been the earliest of them, but nothing about its form is now known other than that it must have been a wall tabernacle as it was attached to the pier of the high altar chapel. For the documents relating to the Brunelleschi tabernacle taken from the *Libro di ricordi di Fra Giuliano di Nofri Benini*, prior of the church of S. Jacopo, see Cornelius von Fabriczy, *Filippo Brunelleschi: sein Leben und seine Werke*, Stuttgart, 1892, 23. For a discussion of the development of the wall tabernacle in Florence before Rossellino, see Schulz, *The Sculpture of Bernardo Rossellino*, 52-58. She notes that two earlier eucharistic tabernacles designed by the Rossellino workshop are recorded in documents, one of 1433 for the church of SS. Flora e Lucilla in Arezzo and another of 1436-38 for the Badia in Florence. The first is lost and, of the other, only a few small fragments and the *sportello* survive and as a consequence nothing is known about their form or about whether they had a

perspectival setting around the *sportello*; see Schulz, *The Sculpture of Bernardo Rossellino*, 122-123.

[5] For the Luca della Robbia tabernacle, see J. Pope Hennessy, *Luca Della Robbia*, Oxford, 1980, 33-36, 234-235; Giancarlo Gentilini, *I Della Robbia. La scultura invetriata nel Rinascimento*, Milan, 1992, 94.

[6] For the tabernacle in San Lorenzo, see: Ida Cardellini, *Desiderio da Settignano*, Milan, 1962, 59-78; and Andrew Butterfield, Caroline Elam and Victor Coonin, 'Desiderio da Settignano's Tabernacle of the Sacrament', *Mitteilungen des Kunsthistorischen Institutes in Florenz*, 43, 1999, 333-357. See also Tommaso Mozzati, 'Tabernacolo del Sacramento', in Marc Bormand, Beatrice Poalozzi Strozzi and Nicholas Penny, eds, *Desiderio da Settignano. La scoperta della grazia nella scultura del Rinascimento*, Paris and Milan, 2007, 228-230.

[7] For Mino da Fiesole's tabernacle in S. Croce, see Caspary, *Das Sakramentstabernakel,* 22-23; for the one in S. Maria Maggiore in Rome, see F. Caglioti, 'Per il recupero della giovinezza romana di Mino da Fiesole: il 'Ciborio della neve'', *Prospettiva*, 49,1987, 15-32.

[8] For the tabernacles produced by the Maiano workshop, see Giancarlo Gentilini, 'Fonti e tabernacoli … pile, pilastri e sepolture: arredi marmorei della bottega dei da Maiano', in Daniela Lamberini *et al.*, eds, *Giuliano e la bottega dei da Maiano*, Florence, 1994, 182-195; for the tabernacle in the Badia in Arezzo, see Doris Carl, *Benedetto da Maiano. Ein Florentiner Bildhauer an der Schwelle zur Hochrenaissance*, 2 vols, Regensburg, 2006, vol. 1, 155, 327, where the tabernacle is considered a workshop production; and for the one in S. Barnaba, see Carl, *Benedetto da Maiano*, 326-327. There is little literature on the tabernacle at the Badia a Settimo; for the attribution to the da Maiano workshop, see Carlo Celso Calzolai, *La Storia della Badia a Settimo*, Florence, 1958, 90.

[9] For these examples, see Francesco Negri Arnoldi, 'Tabernacoli, fonti battesimali e altari', in *Il Quattrocento a Viterbo*, Rome, 1983, 341-358.

[10] See Sarah Wilk, *The Sculpture of Tullio Lombardo: Studies in Sources and Meaning*, New York and London, 1978, 98-108, esp. 99.

[11] For the S. Pier Maggiore ciborium, generally attributed to Desiderio da Settignano, see Cardellini, *Desiderio da Settignano*, 252-256. There appear to have been earlier examples of the ciborium type as noted by Schulz, *The Sculpture of Bernardo Rossellino*, 52, n. 2. Andrea Cavalcanti, Brunelleschi's adopted son, produced such a tabernacle for the cathedral in Florence between 1443 and 1447. The tabernacle is referred to in the documents as having a 'piedistallo' or 'pilastrum' which strongly suggests that it was of the ciborium type as wall tabernacles are never provided with such a support; see G. Poggi, *Il Duomo di Firenze. Documenti sulla decorazione della chiesa e del campanile tratti dall'archivio dell'opera*, Berlin, 1909, 220, doc. 1098; Creighton Gilbert, 'Saint Antonin de Florence et l'art. Théologie pastorale, administration et commande d'oeuvres', *Revue de l'Art*, 90, 1990, 9-20.

[12] For the tabernacle in Volterra, see: Corrado Ricci, 'Il tabernacolo e gli angeli di Mino da Fiesole in Volterra', *Rivista d'Arte*, 2, 1904, 260-267; and Brendan Cassidy, 'Two Trecento Angels at Volterra disguised by Mino da Fiesole', *Burlington Magazine*, 136, 1994, 802-808. For the one in San Gimignano, see above all Doris Carl, 'Der Hochaltar des Benedetto da Maiano für die Collegiata von San Gimignano: ein Beitrag zum Problem der Sakramentsaltäre des Quattrocento', *Mitteilungen des Kunsthistorischen Institutes in Florenz*, 35,1991, 21-60; for the one in Siena, see above all Doris Carl, 'Il ciborio di Benedetto da Maiano nella Cappella Maggiore di S. Domenico a Siena: un contributo al problema dei cibori quattrocenteschi con un excursus per la storia architettonica della chiesa', *Rivista d'arte*, 42, 1990, 3-74.

[13] For the tabernacle of S. Fina, see Doris Carl, 'Der Fina-Altar von Benedetto da Maiano in der Collegiata zu San Gimignano: zu seiner Datierung und Rekonstruktion', *Mitteilungen des Kunsthistorischen Institutes in Florenz*, 22, 1978, 265-286.

[14] Diana Norman, 'The chapel of Saint Catherine in San Domenico: A study of cultural relations between Renaissance Siena and Rome', in Mario Ascheri *et al.*, eds, *L'ultimo secolo della repubblica di Siena: arti, cultura e società*, Siena, 2008, 405-419.

[15] Wilk, *The Sculpture of Tullio Lombardo*, p. 99

[16] Giusy Zevolini, 'Il tabernacolo di Isaia da Pisa per la chiesa della SS. Trinità di Viterbo: un'aggiunta ed una proposta di ricomposizione', *Rivista dell'Istituto Nazionale d'Archeologia e Storia dell'Arte*, 26, 2003, 149-158.

[17] For S. Maria della Peste in Viterbo, see Paul Davies, *Studies in the Quattrocento Centrally Planned Church*, PhD Dissertation, University of London, 1992, 289-338. A seventeenth-century example can be seen around the Madonna di Buon Consiglio in Genazzano.

[18] See Richard Trexler, 'Florentine Religious Experience: The sacred Image', *Studies in the Renaissance*, 19, 1972, 7-41; for a counter argument see Robert Maniura, 'Image and Relic in the Cult of our Lady at Prato', in Sally Cornelison and Scott Montgomery, eds, *Images, Relics and Devotional Practices in Medieval and Renaissance Italy*, Tempe, 2006, 193-212.

[19] See Davies, *Studies in the Quattrocento Centrally Planned Church*, 43-84.

[20] For the Cappella del Crocefisso, see: Pope-Hennessy, *Luca Della Robbia*, 239; Miranda Ferrara and Francesco Quinterio, *Michelozzo di Bartolomeo*, Florence, 1984, 243-245, 301; Wolfgang Liebenwein, 'Die Privätisierung des Wunders: Piero de' Medici in SS. Annunziata und S. Miniato', in Andreas Beyer and Bruce Boucher, *Piero de' Medici il Gottoso (1416-1469)*, Berlin, 1993, 251-290; and Dale Kent, *Cosimo de' Medici and the Florentine Renaissance: The Patron's Oeuvre*, New Haven and London, 2000, 203.

[21] This suggestion was first made by Paul Schubring, *Die italienische Plastik des Quattrocento*, Berlin, 1919, 120, and has found universal acceptance since then.

[22] See note 18.

[23] For the term 'false perspective' or 'falsa prospettiva', see Jeremy Blake, *La Falsa Prospettiva in Italian Renaissance Architecture*, Stocksfield, 1981.

[24] For the underlying meanings in the use of perspective in Masaccio's Trinity, see above all Freiberg, 'The Tabernaculum Dei'; for the analysis of the way in which the perspective is constructed, see M. Kemp, *The Science of Art: Optical Themes in Western Art from Brunelleschi to Seurat*, New Haven and London, 1990, 17-18, in which earlier literature is cited.

[25] For an overview of the development of perspective in the early-fifteenth century see Kemp, *The Science of Art*, 9-53.

[26] The idea of a vanishing line or axis is discussed in: Miriam S. Bunim, *Space in Medieval Painting and the Forerunners of Perspective*, New York, 1940; and John White, *The Birth and Rebirth of Pictorial Space*, London and Boston, 1957 (1987 ed.), 74-75.

[27] J. Pope-Hennessy, *Donatello*, New York, London and Paris, 1993, 129-132.

[28] For the rise in popularity of confraternities dedicated to the Corpus Christi, see Miri Rubin, *Corpus Christi: The Eucharist in Late Medieval Culture*, Cambridge, 1991, 233.

[29] The function of the perspective here is quite different from the symbolic use of it in Masaccio's *Trinity* fresco where, according to Rona Goffen, 'it seems likely that Masaccio's architecture is intended as a mathematical expression of God's perfection and harmony, worthy of the 'real tabernacle' of the Lord'; see Rona Goffen, 'Masaccio's Trinity and the Letter to Hebrews', in Rona Goffen, ed., *Masaccio's Trinity*, Cambridge, 1998, 53.

[30] For S. Maria delle Grazie in S. Giovanni Valdarno, see Alvaro Tracchi, *La Basilica di Maria SS. delle Grazie*, San Giovanni Valdarno, 1979.

[31] See notes 12 and 13.

[32] For an analysis of the problems of axiality in church design, see Paul Davies, 'La santità del luogo e la chiesa a pianta centrale nel Quattro e nel

primo Cinquecento', in Bruno Adorni, ed., *La Chiesa a Pianta Centrale. Tempio Civico del Rinascimento*, Milan, 2002, 26-35.

[33] An analysis of sales of candles at Orsanmichele can be found in Diane Zervas, ed., *Orsanmichele a Firenze – Orsanmichele Florence,* Modena, 1996, 81-82. For an overview of the topic, see Paul Davies, 'The Lighting of Pilgrimage Shrines in Renaissance Italy', in Erik Thunø and Gerhard Wolf, eds, *The Miraculous Image in the Late Middle Ages and the Renaissance*, Rome, 2004, 57-80.

[34] For the church of S. Maria di Fontegiusta in Siena, see Caterina Cardamone, 'Sancta Maria in Portico a Fontegiusta, Siena', in Adorni, *La Chiesa a Pianta Centrale,* 97-106, which contains earlier bibliography.

[35] For S. Maria della Pietà in Bibbona, see: Giuseppe Marchini, 'Vittorio Ghiberti Architetto', in *Scritti in Onore di Mario Salmi*, Rome, 1961, vol. 2, 187-202; and Riccardo Pacciani, 'Santa Maria della Pietà a Bibbona e Santa Maria delle Carceri a Prato', in Adorni, *La Chiesa a Pianta Centrale*, 81-96. See also Davies, 'La santità del luogo', 29.

[36] The most comprehensive study of reliquaries remains Joseph Braun, *Die Reliquiare des christlichen Kultes und ihre Entwicklung*, Freiburg, 1940.

[37] See Archdale King, *Eucharistic Reservation in the Western Church*, London, 1965.

[38] For the use of veils to cover miracle-working images see Trexler, 'Florentine Religious Experience'; for veils at SS. Annunziata, see Megan Holmes, 'The elusive origins of the cult of the Annunziata in Florence', in Thunø and Wolf, *The Miraculous Image*, 98-121, especially 99; for tabernacle doors in fifteenth-century Rome, see Barbara Wisch, 'Keys to Success: Propriety and promotion of miraculous images by Roman confraternities', in Thunø and Wolf, *The Miraculous Image*, 161-184. Additional interesting material relating to covering and veiling images in Renaissance Italy can be found in: Alessandro Nova, 'Hangings, curtains, and shutters of sixteenth-century Lombard altarpieces', in Eve Borsook and

Fiorella Gioffredi Superbi, eds, *Italian Altarpieces 1250-1550: Function and Design*, Oxford, 1994, 177-89; Paul Hills, 'Titian's veils', *Art History*, 29: 5, 2006, 771-795; and Victor M. Schmidt, 'Curtains, *revelatio*, and pictorial reality in late Medieval Renaissance Italy', in Kathryn M. Rudy and Barbara Baert, eds, *Weaving, Veiling, and Dressing*, Turnhout, 2009, 191-213.

[39] See: R. Bianchini, *L'impruneta*, Florence, 1932, 91; Richard Trexler, 'Florentine Religious Experience', 7-41, especially 17, n. 33.

[40] Another possible symbolic function of the two construction point system used in these tabernacles is that the construction points themselves acted as a form of framing device leading the eye to the top and bottom of the door, as can be seen in the case of the Chapel of S. Fina in San Gimignano. The choice of two rather than one point may conceivably have been intended as a metaphor for the idea of the heavenly, representing the ontological difference between the natural world represented by single point perspective and the heavenly one which had its own privileged character.

[41] For the radiation of holy energy (*virtus*), see in general André Vauchez, *Sainthood in the Later Middle Ages*, Cambridge, 2005, 423-443; for the sensory powers of images, see Hans Belting, *Likeness and Presence: A History of the Image before the Era of Art*, Chicago and London, 1994; for Florentine examples, see Richard Trexler, *Public Life in Renaissance Florence*, New York, 1980, 68; for an analysis of this idea in the context primarily of Northern European sacrament houses, see Timmermann, *Real Presence*, 3-7.

[42] This idea of using perspective as a visual metaphor for radiating holiness was suggested by Joseph Polzer in his analysis of Masaccio's *Trinity*: 'The orthogonal ribs of the vault are like rays spreading outward from the Divine'; see Joseph Polzer, 'The Anatomy of Masaccio's Trinity', *Jahrbuch der Berliner Museen*, 13, 1971, 52.

[43] I shall deal with the further implications of the devotional functions of perspective for Italian Renaissance centrally planned churches in a

forthcoming book entitled *Rotunda: Architecture and Miracles in Renaissance Italy*.

[44] See Arnaldo Bruschi, *Bramante*, London, 1977, 37-38.

[45] See Caspary, *Das Sakramentstabernakel,* 48-49.

[46] The most important studies for establishing the building history of S. Maria presso San Satiro are: Gerolamo Biscaro, 'Le imbreviature del notaio Boniforte Gira e la chiesa di S. Maria de S. Satiro', *Archivio Storico Lombardo*, 37, 1910, 133-144; Costantino Baroni, *Documenti per la Storia dell'Architettura a Milano del Rinascimento e nel Barocco*, vol. 2, Rome 1968, 106-132; Ambrogio Palestra, 'Cronologia e documentazione riguardanti la costruzione della chiesa di S. Maria presso S. Satiro del Bramante', *Arte Lombarda*, 14: 2, 1969, 154-60; Giorgio Lise, *Santa Maria presso San Satiro*, Milan, 1975; Ulrich Kahle, *Renaissance-Zentralbauten in Oberitalien. S. Maria presso S. Satiro. Das Frühwerk Bramantes in Mailand*, Munich, 1982; Luciano Patetta, *L'Architettura del Quattrocento a Milano*, Milan, 1987, 176-188; *Insula Ansperti. Il complesso monumentale di S. Satiro*, Milan, 1992; and Richard Schofield and Grazioso Sironi, 'Bramante and the Problem of Santa Maria presso San Satiro', *Annali di Architettura*, 12, 2000, 17-57.

[47] For the analysis of this fictive chancel and its perspective, see Rosa Auletta Marrucci, ed., *'La "prospettiva" bramantesca di S. Maria presso S. Satiro. Storia, restauri e intervento conservative*, Milan, 1987, and the essays in it by Arnaldo Bruschi, 'Bramante e l'immagine del "finto coro"', 9-12, and Rosa Auletta Marrucci, 'Bramante e la "prospettiva" di S. Maria presso S. Satiro: storia dei restauri, l'attuale intervento di conservazione e definizione crmatica originaria', 13-56. See also: Eros Robbiani, 'La verifica costruttiva del "finto coro" di S. Maria presso S. Satiro a Milano', in Marisa Dalai Emiliani, ed., *Atti del Convegno Internazionale di Studi, Milano 1977*, Florence, 1980, 215-230; Franco Borsi, 'Bramante "prospettivo" e il finto coro', in *Insula Ansperti*, 103-113; Wolfgang Jung, 'Coerenti inconguenze sulla incisione

Prevedari e il coro di Santa Maria presso San Satiro di Bramante', *Quaderni dell'Istituto di Storia dell'Architettura*, 31, 1998, 27-40; Filippo Camerota, 'Bramante "prospettivo"', in Francesco Paolo di Teodoro, ed., *Donato Bramante : ricerche, proposte, riletture*, Urbino, 2001, 19-46; and Filippo Camerota, *La prospettiva del Rinascimento. Arte, architettura, scienza*, Milan, 2006, 242-257.

[48] For the painted decoration of the illusionistic apse, see Rosa Auletta Marrucci, 'Bramante e la "prospettiva" di S. Maria presso S. Satiro', 12-56.

[49] See, for example, Bruschi, *Bramante*, 32-36.

[50] Bruschi, *Bramante*, 36.

[51] Bruschi, *Bramante*, 37.

[52] Gino Chierici, *Bramante*, Milan, 1954, 5-6; Bruschi, *Bramante*, 37-38; Luciano Patetta, *L'Architettura del Quattrocento a Milano*, Milan, 1987, 176-188.

[53] The only analysis of the cult currently in print is that by Ambrogio Palestra, *La Madonna Miracolosa di S. Satiro 1200 - c.1983*, Milan, 1983. A fuller analysis of the image by Timothy McCall is currently in press.

[54] Paolo Morigi, *Santuario della città e diocese di Milano. Nel qual si contine il numero, e nome de tutti i corpi santi, teste, e reliquie, che sono in tutte le chiese della città*, Milan, 1603, chapter 2 [unpaginated].

[55] See the letter dated 26 September 1477 of Vincenzo delle Galline, innkeeper of the Falcon tavern, published in Giorgio Lise, *S. Maria presso S. Satiro*, Milan, 1975, 111, which describes the location of the image that was the focus of the cult as being 'depincta ne la ecclesia de Sancto Satiro de Milano'.

[56] There has been some confusion over the identity of the image. There was certainly an image of the Virgin Mary that was attached to the church of S. Satiro, which began working miracles in 1242 (Palestra, *La Madonna*, 25). It is not clear whether this was the same image that worked a miracle in 1477. The likelihood is that it was not. What can be said with relative certainty is

that it was the image that worked a miracle in 1477 that became the focus of the miracle cult. This is suggested by a number of pieces of evidence. One is that, according to Fra' Paolo Morigi, 'l'immagine della Madonna Nostra Signora col Bambino che ricevette il coltello nella gola fu trasportata e posta sopra l'altare maggiore' (Morigi, *Santuario della Città e diocesi di Milano*, chapter 2 [unpaginated]). What is more, according to the same source the knife used in the attack was kept in the sacristy as a relic of the miracle ('in testimonio del miracolo'); see Palestra, *La Madonna*, 26-31.

[57] Lise, *Santa Maria*, 111; Baroni, *Documenti*, 1968, 110, n. 1.

[58] Lise, *Santa Maria*, 112-115.

[59] Had they been added later than that, Lodovico himself would presumably have been included.

[60] The image is referred to in contemporary documents as being an image of the Virgin Mary. A letter of 26 September 1477 refers to it as: 'la imagine de la intemerata Vergine depincta ne la ecclesia de Sancto Satiro de Milano'; see Lise, *Santa Maria*, 111.

[61] Morigi, *Santuario della città e diocese di Milano,* chapter 2 [unpaginated]: '[...] Per lo che Massatio veggendo cosi gran miracolo, cominciò con lagrime a gridare, di modo che quivi corsero molti, e videro l'uscita di detto Sangue, onde questo miracolo si sparse per la Città, e per lo Contado, di maniera che da ogni parte ci concorreva gran moltitudine de genti, & si videro grandissimi miracoli tutti approvati ed autenticati. E da ogni banda erano quivi fatte larghe limosine, de danari, di gioie, collane, anelle, e vesti, per grazie ricevute dalla Gloriosa Madre di Dio, e dal suo figluolo, di maniera che in processo di tempo furono ammassati, & investiti molte miglia di scudi [...]'.

[62] The possibility of a link between Bramante's fictive chancel and the form of eucharistic tabernacles has been mentioned, but only in passing; see, for example, Borsi, *Bramante*, Milan, 1989, 51.

[63] See Schofield and Sironi, 'Bramante and the Problem of Santa Maria', 51, n. 14.

[64] See Matteo Ceriana, 'Osservazione sulle architetture plastiche o dipinte a Milano tra il 1470 e il 1520', in Christoph Luitpold Frommel, Luisa Giordano and Richard Schofield, eds, *Bramante milanese e l'architettura del Rinascimento lombardo*, Venice, 2002, 111-146.

[65] For the Tempietto, see principally: Arnaldo Bruschi, *Bramante architetto*, Bari 1969, 463-527; Bruschi, *Bramante*, 129-143, Hubertus Günther, 'Bramantes Hofprojekt um den Tempietto und seine Darstellung in Serlios drittem Buch', in *Studi Bramanteschi*, Rome, 1974, 483-501; Deborah Howard, 'Bramante's Tempietto: Spanish royal patronage in Rome', *Apollo*, 136, 1992, 211-217; and Hubertus Günther, 'La ricezione dell'antico nel Tempietto', in Francesco Paolo di Teodoro, ed., *Donato Bramante: ricerche, proposte, riletture*, Urbino, 2001, 267-302.

[66] See, for example, Bruschi, *Bramante architetto*, 472, where it is interpreted in part as the 'tabernaculum dei', and Nikolaus Pevsner, *An Outline of European Architecture*, Harmondsworth, 1968 ,7th edn, 203-204.

[67] The problems are discussed in Bruschi, *Bramante architetto*, 500-505.

[68] See Earl E. Rosenthal, 'The antecedents of Bramante's tempietto', *Journal of the Society of Architectural Historians*, 23, 1964, 55-74.

[69] Sebastiano Serlio, *Regole generali di architetura.* Venice, 1540, fol. 41; for a modern edition, see Vaughan Hart and Peter Hicks, eds, *Sebastiano Serlio on Architecture*, New Haven and London, 1996, vol. 1, 131. See also Bruschi, *Bramante*, 129-143.

[70] For an analysis of the Serlio plate, see, above all, Hubertus Günther, 'Bramantes Hofprojekt' 483-501.

[71] Bruschi, *Bramante architetto*, 470-74.

[72] The idea of *locus sanctus*, a place being considered especially holy through association with martyrdom, the tomb of a saint or miracles associated with saints has a large bibliography. See in general: Vauchez, *Sainthood*, 444-453; for the effect it had on centrally planned churches, see Paul Davies, 'La santità del luogo e la chiesa a pianta centrale nel Quattro e nel primo

Cinquecento', in Bruno Adorni, ed., *La Chiesa a Pianta Centrale. Tempio Civico del Rinascimento*, Milan, 2002, 26-35.

[73] The ideas present in the Tempietto were later used in Sanmicheli's Tornacoro in Verona Cathedral and his Lazzaretto chapel outside Verona; see Paul Davies and David Hemsoll, *Michele Sanmicheli*, Milan, 2004, 101-125.