2015

Greek at Chartres

William S. A. Dale
Western University

Follow this and additional works at: https://ir.lib.uwo.ca/visartspub

Part of the Art and Design Commons, Art Practice Commons, History of Art, Architecture, and Archaeology Commons, and the Visual Studies Commons

Citation of this paper:
https://ir.lib.uwo.ca/visartspub/22
The Greek at Chartres

WILLIAM S. A. DALE
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>2</td>
</tr>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>1. The West Portals of Chartres</td>
<td>7</td>
</tr>
<tr>
<td>2. The Head Master’s Hidden Geometry</td>
<td>24</td>
</tr>
<tr>
<td>3. The Greek Connection</td>
<td>59</td>
</tr>
<tr>
<td>4. The Greek at Chartres</td>
<td>70</td>
</tr>
<tr>
<td>Notes</td>
<td>76</td>
</tr>
</tbody>
</table>
The text presented here should be seen as a preliminary report of an extensive study of the projection of space and form in Ancient and Mediaeval art which has absorbed the author's thought and research for over thirty years. The examples chosen were to include architecture and sculpture of the 5th century B.C. such as the Parthenon and funerary reliefs in Athens, and also the Holy Shroud of Turin, the West Portals of Chartres Cathedral, and the West Fronts and arcades of English Gothic cathedrals.

In the examples chosen the context strongly suggested that linear projection was used as a metaphor for heavenly or eternal space, and illusionistic low relief without cast shadows as the appropriate device with which to represent the inhabitants of that space.

The choice of the Head Master of Chartres Cathedral for a preliminary publication was made for two reasons. First, this sculptor used both linear projection and low relief in his planning and execution of the central doorway. Second, this example has become central to the whole enquiry because of its apparent purpose of making visible divine form in eternal space.

How does this example relate to the use of linear projection in painting and low relief in sculpture in fifteenth-century Italy? That and other questions raised by this study will have to wait for another study, and perhaps another hand.
INTRODUCTION

In the story of Gothic architecture it is generally agreed that the defining moment is to be found in the narthex and the chevet of Abbot Suger’s Abbey of Saint-Denis. Here, for the first time, a synthesis of forward-looking elements in the regional schools of France led to the separation of the load-bearing and the screen functions of structure. This, in turn, made possible the soaring vaults and great expanses of stained glass of the mature Gothic.

The development of Gothic sculpture is not quite so clear-cut. True, we have the evidence of some 18th-century drawings and a few surviving fragments to support the claim of the Abbey of Saint-Denis as the origin of the monumental figures that flank the doorways of Amiens and Reims Cathedrals. But it is to the central doorway of the three West Portals of Chartres Cathedral that we usually turn for the models for the serene and noble features of Christ and the Saints of Gothic portals. The sculptor responsible for the tympanum and column-figures of that doorway, usually known by the nickname of the ‘Head Master’ or ‘Headmaster’, has been the object of scholarly enquiry for over a century. Where did he come from? What was his role in the emergence of a distinctively Gothic style?

The first question had puzzled art historians even before Wilhelm Vöge first singled him out as the Head Master (der Hauptmeister) of the West Portals. As early as 1873 Henry Revoil suggested that these column-figures might have been the work of Greek sculptors brought back to France by Crusaders. Vöge himself saw the influence of the School of Provence, as exemplified in the façades of Saint-Gilles and Saint-Trophime in Arles. Among more recent writers, Whitney Stoddard has identified this sculpture as the more mature work of Gislebertus of Autun. On the other hand, Edson Armi has proposed that the sculptor’s earlier work is to be found at La-Charité-sur-Loire and Souvigny.

As for the second question, the Head Master’s role in the development of Gothic sculpture has never been clearly distinguished from that of his immediate contemporaries and close followers. Was he merely responsible for another variation on the theme of the
column-figure? Or did he change the way the human form was represented and related to its architectural setting?

The purpose of the present study is to suggest that the Head Master of Chartres was not the product of any regional school of Romanesque sculpture in France. Instead, it will show that there are features of his design of the central doorway and of his figure style that are apparently unique in western mediaeval art, and indicate a direct link with the art of Byzantium, such as that suggested by Revoil. In addition, while acknowledging his widespread influence on the style and iconography of Gothic sculpture, it will show that the most original aspects of his work at Chartres died with him.

First, it describes the present setting of the West portals, and reviews the evidence for their change of location. Next, it distinguishes between the hand of the Head Master and those of his associates in the carving of the column figures of all three doorways, and describes his illusionistic use of low relief. Also it notes his exceptional use of a form of linear projection in the *Maiestas Domini* of the central tympanum.

A brief demonstration of the difference between the Head Master’s system of projection and that of the Italian Renaissance leads to a reconstruction of the original order of the column figures of the central doorway, and the geometric basis of the *Maiestas Domini* in the tympanum above them.

The restoration of the original order of the column figures leads to a fresh interpretation of the iconography of the whole doorway, which is now seen as the story of Christ’s royal ancestry, a theme that is repeated in abbreviated form in the ‘royal doors’ of other churches in France.

The case is then made for identifying the Head Master as a Greek, on the basis of his use of low relief carving to convey the impression of volume without mass, as found in Byzantine ivory carving of the Second Golden Age. Also, his use of a form of ‘cycloramic’ projection, both in the order of the column figures and in the throne of the *Maiestas Domini*, shows a familiarity with Euclid’s *Optica*, a closed book to all but a learned few in the West before the middle of the twelfth century. A theological reading of Euclid’s theory of vision will then be advanced to explain the recurring rejection of linear
projection in the history of Byzantine Art. However, in a Western European setting, and for a western patron, a sculptor such as the Head Master would be free to apply Euclid’s lessons to his own vision of eternity.

Finally, the reception of the Head Master’s Royal Portal will be gauged by its imitation in the portals of churches elsewhere in France. A comparison with the South Portal of Le Mans Cathedral in particular will demonstrate the extent, but also the limits, of his influence on his contemporaries and successors in France. On the one hand it will confirm the identity of some of the column-figures at Chartres, but also document the loss of their original order in favor of a simpler program. and the acceptance of their present confused installation at the end of the twelfth century.

The study will conclude with an assessment of the Head Master’s role in the development of Gothic sculpture in France, and his unique place in the history of Christian art.
Figure 1. Chartres Cathedral, West Façade (photo: author)
1. THE WEST PORTALS OF CHARTRES

THE SETTING

The Cathedral of Our Lady at Chartres is one of the best loved of all French cathedrals. Despite its age, it has something of the awkward appeal of an adolescent, rather than the mature and measured beauty of the High Gothic, such as we find in Amiens Cathedral. Perhaps this is because its present appearance is not so much the result of a preconceived design, but of an organic creation into which new ideas and revisions have been integrated as the building grew or reacted to changing circumstances. Even a major innovation such as the flying buttress appears here as a makeshift solution, based on the craft of the wheelwright, when compared with the streamlined logic of its successor in later buildings.

Nowhere is the restless spirit of Chartres more apparent than in its West Façade (Fig.1). From the massive lower stories of the towers to the airy filigree of the North Spire, the design is one of adjustments and accommodations. Some changes were made as the result of destructive fires and the need to rebuild. But others also have been made in response to a new spirit sweeping the Church. The asymmetrical design reflects an uneven building program started in 1134 after a fire destroyed much of the town, and severely damaged the west end of the eleventh-century cathedral.

The response to that disaster at all levels of the local population was to be the ‘Cult of the Carts’. In his celebrated letter to Theodore, Bishop of Amiens, Hugh, Archbishop of Rouen, writes: ‘It was at Chartres that men began humbly to pull wagons and carts for the work of building the church, and that their humility began to shine forth even in miracles.’ He goes on to say that men from Normandy joined the people of Chartres in this penitential exercise, and brought it back to their own mother church by 1145.6

However, it did not take ten years before the process of reconstruction was begun. Already in the late 1130s the base of the freestanding North Tower and, by 1145, the base
Figure 2. West Façade, west doors and lancets (photo: author)
of the South Tower were under construction, set out in front of the church. At the same time, it has been suggested, a vaulted porch of three bays was being constructed behind these towers against the west wall of the church, with three doorways that were later to form the West Portals, and a lofty chapel above them, lit by the three stained glass windows now above them (Fig.2). One may assume that 1134 is the terminus a quo for all this activity, including the sculpture of the West Portals for their original location. If we accept the consecration date of 1140 as the terminus ad quem for the sculpture of the West Portals of the Abbey of Saint-Denis, we might reasonably speculate that both programs were in progress between those two dates, and probably at the same time. In any case there is no clear indication of the movement of individuals from one workshop to the other.

At a later date, most probably after the fire of 1194, the triple doorway and the three windows above it were brought forward to their present cramped location, flush with the western walls of the towers. The evidence for this move, as detailed by Stoddard, includes the squeezing of the South Doorway into a narrower space, so that figures on the right-hand ends of both the upper and lower lintels have been severely trimmed. Furthermore, the decorative borders of the south lancet window have been suppressed, except for a strip along the bottom, making it narrower than the north lancet. When we examine the present arrangement of the column figures of the Central Doorway, we shall find further evidence for this move.
THE SCULPTORS OF THE WEST PORTALS

Our first response to the West Portals is one of pleasure with the overall symmetry of their design, and the harmony of their parts (Fig.3). The wider Central Doorway is surmounted by a slightly pointed tympanum, framed by three receding archivolts and supported by a deep lintel. Below, the doorway is flanked by deep embrasures lined with columns. Four of the columns on either side give visual support to the lintel and archivolts. The North and South Doors are surmounted by smaller pointed tympana and double lintels, framed by two archivolts, and are flanked by fewer columns. Additional columns visually support the wall buttresses that divide the three doorways and the lancet windows above them. The rich sculptural program echoes the architectural setting. Each tympanum, each lintel, is roughly
symmetrical in composition, and reflects its place in the overall scheme by its changing scale. Each column-figure confirms the supporting role of the column from which it emerges. It is only when we look more closely at the figures themselves that we are aware of the marked differences between them in style and level of execution.

Over the years many attempts have been made to sort out the sculptors involved in carving, not only the column-figures, but also the tympana and the smaller figures on archivolts, capitals and pilasters. Foremost among these, and singled out as the leader by Wilhelm Vöge over a hundred years ago, is the Head Master (der Hauptmeister). This is the one responsible for carving the tympanum and the column-figures of the Central Doorway, as well as directing the production of the column-figures on the right side of the North Doorway and on the left side of the South Doorway (Fig.4). The column-figures of the Central Doorway, the focus of the present enquiry, are characterized by long slender proportions, and, in the female figures particularly, by a multiplicity of long parallel folds from waist to hem (Fig.5, left & right). Vöge's discussion centered on these figures, and on those to the right of the South Doorway that he attributed to a single sculptor from Saint-Denis. Alan Priest added to these the ‘Master of the Angels,’ the ‘Master of Étampes’ and the ‘Little Master of Saint-Gilles.’ Since then Stoddard has identified at least eleven sculptors at work, including assistants, and attempted to trace the origins of their styles.

The sculptors who shared the responsibility for the rest of the column-figures were the ‘Étampes Master’ and the two identified by Vöge as a single ‘Saint-Denis Master.’ The first, who was apparently responsible for most, if not all, of the sculpture on the South Portal (also called Portail Royal) of the Church of Notre-Dame in Étampes, carved the three column-figures, two male and one female, on the left embrasure of the North Doorway at Chartres (Fig.6). The drapery style of this sculptor is characterized by deeply cut grooves between evenly spaced straight or curving folds on the torso and shoulders. On the male figures symmetrical falls of drapery converge below the knees, and broad bands of richly-patterned ornament cross the lower legs. The right hand bends sharply up at the wrist, and the toes of the feet point out, adding to the two-dimensional character of the sculpture. In the female figure the upper part of the body is articulated by the same deeply
Figure 4. Centre door (Portal Royal) (photo: author)
cut and evenly spaced curving folds as we find in corresponding figures at Étampes. However, at Chartres the folds of drapery below the waist hang in vertical parallel folds, and two strands of a knotted cincture hang from her waist, as in the figures of two of the queens by the Head Master in the Central Doorway (Fig. 5). (On the strength of this resemblance Priest suggested that the Head Master himself had completed this figure.) Unfortunately, as a result of the systematic decapitation of every figure at Étampes, we have no large heads there to compare with those at Chartres. At Chartres only the head of the middle figure appears to be original, the others being later replacements. In the figure on the left a woman’s head has been placed on a male body.

The column-figures on the right of the South Doorway at Chartres were connected by Vöge with Saint-Denis on the basis of broad similarities between these column-figures and the drawings of figures from the doorways of the royal abbey made for Bernard de Montfaucon. More recently comparisons have also been made with the few surviving heads from Saint-Denis. Again, as in the North Doorway, there are three figures, in this case a man with a book, a king and a queen (Fig. 7). In the man with the book the sculptor uses the curvilinear pattern of ‘damp-fold’ drapery to articulate the right leg in a manner related to the figure style of manuscripts from northern France and England of the second quarter of the 12th century, and can be matched in pose and costume by the figure of Saint Andrew in an open-work ivory panel from Saint-Denis in the Louvre (Fig. 40). In the second male figure the drapery folds are more decorative than descriptive of the form of the leg, the knee being indicated by two concentric spirals. In both a diverging cascade of hem-folds descends from the left arm covered by the cloak. In both, too, a broad band of ornament cuts across the upper leg to disappear into the folds of drapery. In both the right hand is sharply turned up at the wrist, as in the figures by the Étampes Master, but the feet point downward rather than out. As in the North Doorway the female figure has long vertical parallel folds from the hips to the feet, similar to those in the figures of queens by the Head Master. (The ends of her cincture appear below the edge of her cloak.) This treatment of feminine costume has apparently no close links with figures at Saint-Denis.
Figure 5 left. Centre door, left jambs (photo: author)
Figure 5 *right*. Centre door, right jambs (photo: author)
Figure 6. North Door, left jambs (photo: author)
Figure 7. South Door, right jambs (photo: author)
THE HEAD MASTER’S FIGURE STYLE

Vöge was the first to attempt a clear definition of the Head Master’s style and, although we may prefer to make our comparisons with contemporary work at Chartres rather than at Arles, many of his observations still ring true. He described what he saw as a new naturalism in the heads (Fig.9). ‘The schematic separate strands of hair have become wavy and flowing locks, hair and beard have lost their clinging wig-like look, and the faces appear to have removed their masks.’ Indeed, when we compare these heads with those attributed to the Saint-Denis Master (Fig.8), we sense a clearer understanding of the internal structure. Instead of looking like bulging cabochons set in bezels, the eyes sink into their sockets behind softly modeled lids. Where the iris and pupil are indicated in the Christ of the central tympanum and the queen on the right embrasure of the door below,
they are cut to give the effect of colour change, rather than being drilled to receive metal plugs, as in the surviving heads from Saint-Denis. It was this greater degree of naturalism in the heads by this master that led Jan van der Meulen to suggest that they were recut after 1200.¹⁰

When he came to discuss the figures themselves, Vöge made two important observations. One was that they were subordinate to the architectural structure. He noted that the rectangular piers from which they were carved corresponded in plan to those of the plinths and imposts of the capitals of the columns to which they were attached. He also found that the positions of the arms and attributes of each figure tended to conform to the shape and dimensions of the original blocks, and that the modeling of chest and belly were
in low relief. In fact the drapery on some of the sleeves barely breaks through the flat surface of the block (Fig.10). This produces an effect of volume within the relief that disappears only when viewed from an oblique angle. At the same time, as if to identify them with the columns behind them, the three female figures of the Central Doorway are clad in long gowns and tunics with deep cuffs falling in parallel folds from waist to hem.

At first sight we might see this as a strategy to accommodate the figure to the limitations of a block already in place. If so it is the device of a much more sophisticated sculptor than the others working beside him. In his handling of drapery the Head Master shows his complete understanding of the relationship between the cloth and the form beneath. We sense the pull of the material over shoulders and arms in the column-figures, and over the knee of the seated Christ in the tympanum. There is no trace of the mechanical and repetitive pattern of folds we find in the figures of his fellow sculptors and even in those of his own assistant on the left of the South Doorway.

It was this apparent precocity of style that led Adolf Katzenellenbogen to suggest that the Head Master came on the scene after an older shop, including the masters from
Étampes and Saint-Denis, had already carved some of the column-figures and the lower lintel of the North Doorway. Although originally destined for the Central Doorway, these would have been relegated to their present positions by the more progressive Head Master. However, the clear influence of the figures of two of the queens in the Central Doorway on both the female figures of the side doorways indicates that all three sculptors were at work side by side at the same time. It also represents an acknowledgment by established sculptors of the exceptional character and quality of this artist’s work.

THE HEAD MASTER’S USE OF PROJECTION

The second important observation Vöge made was that the Head Master was using a form of projection, both in the embrasures and in the tympanum of the Central Doorway (Fig. 11). He suggested that the feet of the column-figures appeared to rest on higher pillars as they approached the doors, and saw in this the artist’s intention to draw our eyes in
towards the doors, and up towards the figure of Christ in the tympanum. He also noted the tilting of the throne and footstool, but concluded, rather illogically, that this device was intended to make the enthroned Christ appear to look down on us.

A closer look reveals that the system used by the Head Master, unlike Renaissance perspective, depends on angles of vision, the plotting of those angles on arcs of equal radius, and their transfer to a flat surface as chords of those arcs. The clue is to be found in the enthroned Christ of the tympanum. Here the eyes with slightly lowered lids meet our gaze as if on a slightly higher level than ours. But the upper legs are foreshortened and the seat of the throne tilted at a 35° angle to make them appear to be a little below eye-level; and the feet resting on a footstool tilted at a 55° angle are seen as if even farther below. At the same time the uprights of the throne converge from top to bottom at an angle of 5° on either side, so that the effect of an elevated viewpoint persists, even when the tympanum is viewed from ground level, as in this illustration.

Thus the Head Master’s projective system results in a geometrically structured space that does not correspond to the space occupied by the observer. In the tympanum it is isolated and contained by the smooth and neutral concave surface of the mandorla: in the embrasures we shall find it more closely related to the architectural setting, but still independent of it. In addition the low relief modeling of the drapery in both situations creates the illusion of three-dimensional form that has apparent volume without physical mass. In the art of the West we should have to look very hard to find such a sophisticated treatment of sculptural space and form before the Italian Renaissance of the 15th century. In the first half of the twelfth it is nothing short of phenomenal!
2. THE HEAD MASTER’S HIDDEN GEOMETRY

THE SYSTEMS OF THE HEAD MASTER AND ALBERTI COMPARED

The difference between the system employed by the Head Master and that practiced by Lorenzo Ghiberti and popularized by Leon Battista Alberti in the 15th century can be illustrated by a simple example. Let us imagine a row of three transparent cubes of identical size viewed from a single point O, as in figures 12 and 13. In Figure 12, representing Renaissance perspective, a transparent projection plane WX cuts through the lines of vision connecting the viewing point to the visible corners of the cubes. In Figure 13, representing the Headmaster's system, these lines of vision are cut by a horizontal arc of projection YZ (the ‘cycloramic’ arc). The latter is intersected by a series of secondary arcs, of which the chords represent the visible vertical edges of the cubes. When these are plotted in plan (figures 14 and 15) and section (figures 16 and 17), the results are as seen in figures 18 and 19. It will be immediately apparent that in planar projection the front and rear surfaces of the side cubes remain square, since they are being seen on the projection plane at the same oblique angle. On the other hand, the side cubes in the cycloramic projection are seen at an angle as the eye swings from side to side, and the vertical edges of the cubes get shorter and closer together as they retreat on either side of the perpendicular line of vision. (If figure 19 is turned on its side, the lower cube suggests the tilted seat and converging sides of the throne as we see it in figure 11)

In both systems there is an element of compromise in transferring the ‘panoptic’ spherical vision to a flat surface. Thus, in Albertian perspective only the rectangular structure of the architectural setting is subject to the planar projection. Otherwise, for instance, the human figures would become increasingly anamorphic as they approached the outer edges of the projection. In cycloramic projection the compromise consists of eliminating all but the cycloramic arc in one dimension, since adding arcs above and below it would result in the convergence of verticals, as in curvilinear perspective. In place of
Figure 12. Planar Projection Method (author drawing)

Figure 13. Panoramic Projection Method (author drawing)
Figure 14. Planar Method plan (author drawing)

Figure 15. Panoramic plan (author drawing)
Figures 16 and 17. Sections through centre cube and right cube (author drawing)
Figure 18. Cubes in planar projection (author drawing)

Figure 19. Cubes in cycloramic projection (author drawing)
the picture plane, then, the imaginary projective surface is more like the inside of a sphere, from which the apparent dimensions of the cubes can be transferred to a flat surface in the form of chords, multiple and consecutive in the cycloramic arc, but single in each of the secondary arcs. As a result there is no ideal viewing point for the finished product, when unrolled on a flat surface, and the panoramic arc remains the only continuous straight line across the whole composition.

RECONSTRUCTION OF THE EMBRASURES

At first sight it might seem impossible to discover how the varying lengths of the column-figures were determined, since they have been scrambled as the result of the relocation of the three doorways to the West Façade (Fig.16).\(^1\) Two figures are missing from the central portal. If there were a consistent progression, one would expect to find matching pairs among the surviving figures attributed to the Head Master, and some sort of mathematical or geometric basis for their varying lengths.

In the central portal there are, in fact, three matching pairs of stone blocks from which the figures are carved. The two innermost figure-blocks on the right embrasure (VI and VII) are both 91 1/4” (231.8 cm.) long. The second figure-block from the door on the left embrasure (IV) and the fourth figure-block from the door on the right embrasure (IX) each measure 99 1/4” (252.1 cm.). Also, the outermost block on the left embrasure (I) and the third from the door on the right embrasure (VIII), are both 101” (256.5 cm.) long. If we match the missing figure-blocks (II and X) with the block next the door on the left embrasure (V), 97” (246.4 cm.) long, and the third from the door on the same side (III) 100 1/2” (255.3 cm.) long, we may complete a series of five pairs.

Nine richly ornamented pillars take the place of the shafts of the columns between the figure-blocks and the attic bases (Figs. 18 & 19). Of these only four retain their original upper and lower moldings. Pillar v measures 37 3/8” (94.93 cm.); pillars iii and vi measure 34 7/8” (88.58 cm.), and iv measures 35 1/4” (89.53 cm.). Any scheme of reconstruction would therefore have to accommodate an interval of only 3/8” (.95 cm.) at some point.
Figure 16. Present arrangement of figure blocks (author drawing)

Figure 17. Figure blocks in ascending order (author drawing)
Figure 18. Centre door, left pillars (photo author)

Figure 19. Centre door, right pillars (photo author)
If we follow our first impulse, following Vöge’s lead, and arrange the blocks with the shortest figures next the door, and the longest at its outer limits, as in figure 17, the rising curve at their feet cannot be justified by any geometric construction. Nor will the four untrimmed pillars fit into this scheme, if the heads are kept on the same level. However, if we bear in mind the cycloramic projection suggested by our preliminary examination of the Maiestas Domini, and interchange the figure blocks as in figure 20, an arrangement arrived at by the use of stochastic investigation, with one third above and two thirds below a visual ‘horizon’, we can reconstruct the most likely method by which the artist arrived at their relative proportions.

Presumably the Head Master saw the master mason’s ground plan for the central portal. Assuming that it was similar to that of its present installation, this involved a doorway with embrasures splayed at an angle of 45°, and a row of five columns on either side. The plinths and impostes were to be stepped back, and the columns were to be evenly
The Head Master’s ground plan took in both embrasures, starting with the line EF connecting the innermost jambs of the doorway, and the lines running at 45° through AE and FK defining the embrasures. He then established a common point of projection at O by projecting an equilateral triangle on the line EF, and added the lines OR and OS perpendicular to the lines running through AE and FK to form the 90° angle ROS. Using the perpendiculars OR and OS as the radius he drew the horizontal arc of projection YZ. He then added the lines OA and OK at 30° on either side of the angle ROS, to determine the widths of the two embrasures, and divided each into four equal parts at B, C and D, and at
G, H and J. The sculptor then made a separate projection for each embrasure, with five evenly spaced verticals at A, B, C, D and E, and at F, G, H, J and K, representing the leading edges of the notional figure-blocks. Since each embrasure was to be the mirror image of the other, we shall take the left one as our example.

The sculptor’s method of calculating the projected heights of the actual figure-blocks is illustrated in the perspective diagrams in figures 22 and 23. In both diagrams the point of projection is located at O. The horizontal line of projection OR is perpendicular to the line of notional blocks of equal height, represented here by the verticals at points A, B, C, D, and E. In figure 22 R is the nearest point to O, and the radii of the vertical arc PQ and the horizontal arc YZ are both the same length as OR. The projection of the dotted line R1R2 as the chord r1r2 on the vertical arc PQ gives the maximum possible height for the actual figure-blocks. As we shall see in our detailed calculations, OR and this projected maximum are the same length.

As the imaginary eye swings to the left in figure 23, point A is the farthest from O. The vertical A1A2 now subtends the smallest angle, and gives the minimum height for the actual figure blocks when projected as the chord a1a2 on the vertical arc PQ, still with the radius OR.

In reconstructing the sculptor’s combined elevation and plan to scale, as in figures 24 and 25, we shall make three basic assumptions. The first is that there is a consistent geometric construction that is found in both the column-figures and the Maiestas Domini. The second is that this construction favours the use of simple geometric figures and proportions that can be achieved with a ruler, protractor and compasses. And the third is that the dimensions arrived at mathematically will coincide with those that can be verified on the spot.
Figure 22. Calculation of maximum height of figure blocks (author drawing)

Figure 23. Calculation of minimum height of figure blocks (author drawing)
In the combined elevation (Fig. 24) it will be found that the horizontal OR chosen by the sculptor was 101.4” (257.55 cm) long. This is also the radius of the vertical arc of projection PQ. The vertical R1R2 represents the height of the notional figure blocks, and was determined by raising from the point of projection O a diagonal 20° above the horizontal, and dropping from O a diagonal 40° below the horizontal, thus creating an angle of 60° at their intersection. The height of the notional figure-blocks (R1R2) would therefore be 121.99” (309.85 cm). Since the diagonals intersect the arc PQ at r1 and r2, the chord r1r2 forms the third side of an equilateral triangle, and therefore gives a possible maximum height of 101.4” (257.55 cm) for the actual figure blocks.
Turning to the eye-level plan (Fig. 25), the sculptor raised the perpendicular OR, again measuring 101.4” (257.55 cm), on the line AE, which connects the leading edges of the notional figure blocks. OR is also the radius of the horizontal arc of projection YZ. As in the Head Master’s notional plan (Fig. 21), the angle AOE is 45°, formed by projecting diagonals from O at angles of 30° and 15° to OR. Next, the lines of projection OA, OB,
OC, OD and OE were transferred to the elevation (Fig. 24) as extensions of OR, and perpendiculars were raised at A, B, C, D and E to represent the notional blocks. (In the interests of clarity, the perpendicular at D has been omitted from the diagram). The lengths of the actual blocks were then determined by drawing diagonals from O to the ends of these perpendiculars. Where the diagonals intersect the arc PQ, the chords a1a2, b1b2, etc., provide the heights for the figure blocks from left to right in the left embrasure, and from right to left in the right embrasure, as rearranged in figure 20. These measure 91.26”, 96.92”, 100.64”, 101.04” and 98.94” (231.8 cm, 246.17 cm, 255.62 cm, 256.64 cm and 251.3 cm).

Their close agreement with the measurements taken on the spot is remarkable, if one accepts a reasonable margin of error in the mechanical use of compasses and ruler, as against the use of trigonometry. The heights of the actual figure blocks are 91.25”, 97”, 100.5”, 101” and 99.25” (231.7 cm, 246.4 cm, 255.3 cm, 256.5 cm and 252.1 cm).

If the figure blocks are set one third above and two-thirds below a horizon-line 102.25” (259.7 cm) above the attic bases of the columns (corresponding to the cycloramic arc of projection), the four complete ornamented pillars in the central doorway may be fitted into this reconstruction. Pillar iii fits under Block VIII; iv fits under III; v remains under V, and vi fits under I. On the basis of matching diameters some of the trimmed pillars might be connected with still other column figures (pillar i under VI: ix under IX).

To be completely consistent the spacing of the actual figure blocks should have decreased on either side of the perpendicular. However, the placing of the columns was already determined by the Master Mason’s plan for each embrasure.

Also, whatever may have been his calculations for the lengths of the blocks, the Head Master varied his treatment of the figures themselves (Fig. 26 left & right). Although the haloes consistently reach the tops of the blocks, their feet rest on brackets of varying shapes and heights. One has no bracket at all. However, the blocks themselves, still perceptible in their lengths and sides, form symmetrical sequences of rectangular prisms. These enclose the figures in an analogous space, which may be modified, but not wholly denied, by the changing position of the observer.
Figure 26 left. Reconstruction of Left Embrasure (photomontage: author)
Figure 26 right. Reconstruction of Right Embrasure (photomontage: author)
THE GEOMETRIC BASIS OF THE MAIESTAS DOMINI

The Maiestas Domini of the Central Tympanum apparently required an even more sophisticated geometric construction to achieve. Also, since the sculpture itself is a projection in high relief of the drawing on the surface of the block, it could be fully verified only by an equally sophisticated technique of measurement. It is assumed that a system similar to that of the column-figures was employed, with the difference that here the principal, or cycloramic, arc of projection was vertical, rather than horizontal.

Our reconstruction begins with the assumption that the basic shape of the throne, as imagined by the sculptor, was a cube. Further, that the top of the footstool formed a semicircle whose diameter was equal to the width of the cube, and whose radius was therefore half that width, as in the perspective diagram in figure 27. Since the height, width and depth of the cube are the same, we may take this three-dimensional geometric figure as the starting point of the side elevation of the enthroned figure of Christ as imagined by the artist (Fig. 28).
First the sculptor drew the throne itself as the square ABCD, and added the depth of the footstool DE, half the depth of the throne, as an extension to CD. To indicate the height of the seated figure he adopted the proportions of 1:1:2 for feet to knees, knees to hips, and hips to the top of the head, and therefore extended CB to F. In order to relate the height of the notional seated figure to the height of the notional standing column-figures, he made it three-quarters of the latter, i.e., 91.49” (232.39 cm). The sides of the notional throne were therefore a third of that, i.e., 30.49” (77.44 cm).

Next the sculptor decided that the enthroned figure would be projected on a cycloramic arc within a 60° vertical angle, with 20° above the horizontal, and 40° below it (as in the figure blocks of the embrasures). The point of projection at O was located by drawing diagonals 20° down from the horizontal at F, and 40° up from the horizontal at E. These intersect at O, and OG is therefore the horizontal line of projection. Again reasoning that the projected seated figure was to be three-quarters the height of the standing figures, he made the radius of the arc of projection 76” (193.16 cm), three-quarters of the maximum height of the figure blocks. Since the chord ef is the third side of the equilateral
triangle efO, it equals the radius of the arc ef, and therefore makes the minimum possible projected height of the figure 76” (193.16 cm).

From the point O straight lines were drawn to the key points D, A and B on the throne and footstool. Where these lines intersect the arc of projection, the chords of the arc between them provide the vertical intervals between the corresponding points on the actual sculpture, when transferred to the flat surface of the block, as in figure 31 left. However, these intervals apply only to the throne, the footstool and the geometric height of the figure, not to the figure itself.

**Figure 29 Notional throne, projection of convergence of sides (author drawing)**

The convergence of the sides of the throne was calculated as in figures 29 and 30 left. In figure 29 it will be seen that the lower front edge of the throne D1D2 is farther away from O than the upper front edge A1A2, and subtends a smaller angle of vision. When both the upper and lower edges are projected on a horizontal arc with the same radius as the vertical arc of projection (fe in figure 28), as in figure 30 left, the chord d1d2 is shorter than a1a2. (By the same calculation the projection of the upper back edge of the throne, as the chord b1b2 in figure 29, would be shorter than d1d2.) When the chords a1a2 and d1d2 are
separated by the vertical chord ad, as in figure 30 right, the two sides of the throne converge at an angle of 5° from the vertical, as they do in the finished sculpture.

To provide a mandorla for the enthroned figure the sculptor dropped two 30° diagonals from f, the geometric level of the top of the head. Where they intersected the horizontal at the level of the back of the throne (b1b2), they formed an equilateral triangle. Taking its base as a common radius, he swung the two arcs that form the intermediate contours of the mandorla. Using the same foci, he inscribed the inner contours so as to touch the lower corners of the throne, and drew also the outer contours.
When the sculptor added the figure, as in figure 31 left, he had to make adjustments to his design. To indicate the divinity of Christ he introduced a large cruciferous halo that hides the apex of the mandorla. In order to avoid having the footstool overlap its base, he reduced its width and squeezed its arcaded riser to bring it within the adjacent arcs. Also, to make the top of the throne visible he extended it into a broad parallelogram, with both sides swinging to the right.

Unlike the painter or the sculptor in the round, the high-relief sculptor faces the problem of reconciling the conflicting demands of three-dimensional form and its projection on a nearly flat surface. It is here that the exceptional character of the Head Master of Chartres is most apparent.

As in the column-figures, the outer dimensions of the stone block have set the limits of the figure of Christ in the tympanum. In figure 31 right it will be seen that the face of Christ, his raised hand, his knees and the book are all on the same plane, and therefore presumably close to the original surface of the block. The head and hands, as centres of expression, are carved in the round, but the body and even the upraised arm are compressed into shallow relief, as can be seen when the tympanum is viewed from below and from the left (Fig. 32).

A second level is reached with the upper front edges of the throne and the footstool, which project only a little beyond the rim of the mandorla (Fig. 33), indicated by a dotted line in figure 31 right. The tilts of the seat, the front of the throne and the top of the footstool are determined by two factors: the vertical displacement of ab, ad and de, and the depth of the background surface of the mandorla. Since the vertical division at ab is shorter than it is at de, the slope is shallower. Also, since the surface of the mandorla is concave, the back of the throne is farther in than the back of the footstool, and the seat has therefore an even shallower slope. The result is an angle of 35°, as against 55° in the footstool.

The approximate measurements taken from the cast at the Musée des Monuments Français confirm the main lines of the above reconstruction. However, the irregularity in the contour of the footstool and the difference in level between the two sides of the seat make it clear that only the main lines of the geometric construction survived once the
sculptor cut into the surface of the block. Nevertheless, we can assume that the same cycloramic system of projection underlies the design and execution of the *Maiestas Domini* as it did in the original arrangement of the column figures below.

![Diagram of block projection and elevation](image)

**Figure 31** *left:* Projection on surface of block. *Right:* Side elevation of block (author drawing)

Although the enclosing mandorla sets the enthroned figure of Christ apart from the rest of the composition, it is also the central bud of a flower-like composition (Fig.11). In this design the *passant regardant* Lion of Saint Mark and Ox of Saint Luke form the lower petals, while the upswept Winged Man of Saint Matthew and the Eagle of Saint John turn in to form the upper petals of the motif. The elegant economy of this design, in which the Elders of the Apocalyptic vision are relegated to the archivolts, is in marked contrast to the crowded encyclopedic compositions of Moissac, Autun and Conques.
Figure 32. Centre Door, tympanum from below left (photo: author)
The bodies of the Lion and the Ox in particular appear to project boldly from the flat background, but, as in the human figures by the Head Master, much of the impression of volume is the result of subtle modeling on a shallow foreground plane.

Figure 33. Centre Door, tympanum from directly below (photo: author)

THE SHAPE OF ETERNITY

What, then, is the visual effect of the Head Master's system? Since both in the Maiestas Domini and on the embrasures the cycloramic arc has been spread flat, the lines of vision that converged on the point O in the eye-level plan of the figure blocks (Fig. 25) and the side elevation of the throne (Fig. 28) are now parallel to one another. In the case of the Maiestas Domini, then, the enthroned Christ is seen, not from the point of view of a single vertical level of the observer in relation to the sculpture, but in relation to the ideal forms as projected within the shallow depth of the tympanum. Even when we stand on the ground, we can have the impression that we are looking down at the throne and the
footstool. At the same time the 60° angle of projection exaggerates the scale of the figure, and enhances the effect of a supernatural vision.

Similarly, in the original arrangement of the embrasures, in which the cycloramic arc was parallel to the ground, but well above the normal eye-level of the observer, there was no optimal viewing point, even at that level. Here the changing sizes of the column-figures would exaggerate the natural effect of cycloramic vision, as our eyes swung from side to side across each embrasure, again giving the figures a heightened, and therefore superhuman, scale. At the same time, since the figures were to be seen as if from the level of the cycloramic arc, their downward-pointing toes would appear to be below eye level. They thus create the projection of a space distinct and separate from that of the columns from which they emerge, the parallel space of Eternity.

An additional dimension is given the hidden geometry by the recurring motif of the equilateral triangle, symbol of the Three-Personed Deity. Most apparent in the construction of the mandorla, it is fundamental to the calculation of the proportions of the throne and the heights of the figure blocks as well. The cube on which the design of the throne depends may also be symbolic, in its reference to the dimensions of the Holy City, as measured by the angel in the Vision of Saint John the Divine (Rev. 31, 16). The partial (and slightly convex) circle of the footstool might then be a symbol for Earth and, together with the cube, would echo the words ‘Heaven is my throne, and earth is my footstool’ from Isaiah (Is.66, 1).

Such an interpretation accords well with the writings of Thierry of Chartres, then chancellor of the School of Chartres, for whom these geometric figures expressed in visible form the nature of God. However, it would be naïve to imagine that an established master such as Gislebertus could have been persuaded to change his style to reflect the protohumanism of Thierry, or of William of Conches, or instructed by them in the intricacies of linear and spacial projection. Rather, the evidence suggests that the Head Master came to his task with a fully formed artistic personality, and with a degree of sophistication unmatched by that of his fellow-sculptors at Chartres.
Katzenellenbogen has characterized the column-figures of the West Doors as an expression of the harmony of *regnum* and *sacerdotium* under the monarchy of Louis VII. However, with the recovery of their original order in the Central Door, as reconstructed in figure 26, we may also perhaps identify the figures as players in the story of Christ’s royal ancestry.

Reading from left to right across both embrasures we begin with King David, crowned and carrying the book of his Psalms. Next to him would likely have been his trusted mentor Nathan the Prophet. Of the two queens the first would be Michal, the younger daughter of Saul, through whom David entered the household of the first King of Israel. It was she who first protected her husband David from the jealousy of her father, but later mocked him when, as king, he danced naked before the Ark of the Lord. As punishment she never bore him a child. Next would be the smiling Bathsheba, pregnant
with the child Solomon whom David was to put on his throne before he died. (As if to emphasise her condition, her doubled cincture is secured with an easily adjusted half hitch, unlike the secure reef-knot used by the other queens). Next to the door the man with the turban-like cap would be Zadok the Priest who, together with Nathan the Prophet, anointed Solomon King.

Turning to the right embrasure, the first two figures are King Solomon and the Queen of Sheba, a ruler in her own right. The man with long hair carrying a scroll might be Isaiah, the prophet of Christ’s descent from Jesse (Is.11.1), and the man with short hair carrying a book might be Matthew, the chronicler of Christ’s royal ancestry (Mat.1.1).

This leaves the question of the identity of the missing figure between the Queen of Sheba and Isaiah. Might this be ‘Joseph the husband of Mary,’ with whom Matthew ends the all-male genealogy of Christ (Mat.1.16)?

Such an arrangement of the Dramatis Personae could be read not only consecutively from left to right across the portal, but also symmetrically. In keeping with the theme of regnum and sacerdotium the figure of King Solomon is balanced by Zadok the Priest, and the role of Queen-consort is exemplified in both Bathsheba and the Queen of Sheba. David carries in his hands the Psalter, as the author of the psalms prophetic of the Passion of Christ (Psalms 22 and 69), while the matching figure of Matthew carries the Gospel in which those prophesies are fulfilled. If we match the prophet Isaiah with the missing prophet Nathan we are left with the enigmatic figures of Michal and the possible figure of Joseph. It might be said that Michal provided David with a direct human link to the throne of Israel, just as Joseph was to provide Jesus with the human link to that royal line.

The column-figures in the North Doorway may have included Abraham, Sarah and Isaac, as well as Moses and Aaron, and those in the South Doorway may have represented a selection of kings, prophets and a queen forming an abridged Tree of Jesse. The varying lengths of the blocks from which the figures themselves are cut suggests that the Head Master may have persuaded his fellow sculptors to adopt some form of cycloramic projection in the embrasures for which they were responsible. However, the Central Doorway at Chartres stands on its own as the Portail Royal.
THE RIPPLE EFFECT

The immediate response to the Head Master’s figure style, as we have seen, was in its effect on that of his fellow sculptors at Chartres itself. But even more dramatic was the impact of his design of the Central Doorway elsewhere in France, notably as the model for the ‘royal entrances’ of Le Mans, Saint-Loup-de-Naud, Bourges and Angers.\(^{19}\) With varying degrees of success these repeat the Head Master’s design, with a tympanum comprising the *Maiestas Domini* and the Symbols of the Evangelists, and column-figures on stepped-back embrasures. However, the imitation is more of pose and dress than of iconography. Almost without exception the column-figures are the same height, and lack the illusionistic modeling of the Head Master. In the tympana too his projective devices are missing or misunderstood.

Nearest in time and space appears to be the South Doorway of the Cathedral of Saint-Julien in Le Mans (Figs. 34 and 35). Thomas Polk has demonstrated that this is earlier than the porch and the nave wall into which it is now set, and has proposed a date for it in the late 1130s, following successive fires in 1134 and 1137.\(^{20}\) On this basis he sees the doorway at Le Mans as an earlier version of the Head Master’s Central Doorway at Chartres. However, cruder is not necessarily earlier, and the Le Mans sculptor has clearly misunderstood the Head Master’s projective system. Although the throne and footstool are still seen from above, in both a 45° angle has been substituted for the more subtle 35° and 55°, and the sides of the throne no longer converge. Nor could the Le Mans sculptor resist adding a flying fold of drapery to the dexter side of the throne, thereby reaffirming the flat surface of the wall at the expense of the open concave space of the mandorla. The column-figures too are clumsy in comparison with their Chartres models, even allowing for their abraded condition. Still, they confirm the original positions of the king and queen on the right embrasure at Chartres as reconstructed in figure 26 right.

The number of column-figures has been reduced from five to four on each side, but to these have been added low reliefs on the jambs, of Saint Paul on the left, and Saint Peter on the right. The first two column-figures on the right embrasure are clearly based on the king with the scroll (X) and the queen with the wimple (I) at Chartres. On the evidence of
the name Salomo which was still visible in 1841 on the scroll held by the king at Le Mans we may confirm the identify of the corresponding figures at Chartres as King Solomon and the Queen of Sheba. Unfortunately the figure missing from this embrasure at Chartres is omitted at Le Mans, but the outer two figures, the man with the upraised right hand, and the one with short curly hair carrying a book, have been freely copied from the figures in these positions at Chartres (V and VI), and may be identified as Isaiah and Matthew.

On the left embrasure at Le Mans the column-figure next the door is now King David carrying a viol. The figure of the queen next to him, presumably Bathsheba, is now based on the queen with braided hair we have identified with Michal (III), with a switch in the position of the hands. The remaining figures might then be Nathan the Prophet carrying a scroll, and Zadok the Priest.

The much reduced program of the West Portal of Saint-Loup-de-Naud reflects the influence of Le Mans in the inclusion among the column figures of Saint Paul on the left of the door and Saint Peter on the right. All that remain of the original cast of the Portail Royal at Chartres are David and Bathsheba on the left embrasure, and Solomon and Isaiah on the right. The tympanum is further flattened and crowded, and in the lintel the number of the Apostles is reduced to eight, with the added figure of the Blessed Virgin Mary in the middle.

The North and South Doors of the Cathedral of St.-Etienne in Bourges incorporate sculpture of the twelfth century into the fabric of the Gothic cathedral. The South Door is a reduced version of the Portail Royal at Chartres, including the familiar format of the tympanum. The three column-figures on either side of the portal, however, bear little resemblance to the Chartres figures in gesture or dress, and are therefore hard to identify. In any case, since they too have been moved from their original location, their order may well have been scrambled. Assuming they are all from the original cast, they might be identified as Isaiah, Bathsheba and David on the left, and Nathan, Solomon and Matthew on the right. The West Door of the Cathedral of St. Maurice, Angers, is more inclusive, but must date from after the relocation of the Portail Royal at Chartres. The Queen of Sheba and Solomon now appear on the outermost jambs, and Bathsheba is next to Solomon, as in
the present order. The remaining figures are less easy to identify, but the reduction to four figures each side of the doorway suggests that the two replaced by bare columns at Chartres were already missing at the end of the twelfth century.

What is clear from the examination of all later doorways based on the *Portail Royal* of Chartres is that the original iconographical program, as proposed above, was either misunderstood or abandoned as too complex for the lay observer.
Figure 35 *left.* Le Mans Cathedral, South Porch, left jambs (photo: author)
Figure 35 right. Le Mans Cathedral, South porch, right jambs (photo: author)
Figure 36 left: Hodegetria, ivory, Byzantine, 10th-12th century, Victoria & Albert Museum, side view. Right: Front view (photos: Victoria & Albert Museum)
3. THE GREEK CONNECTION

VOLUME WITHOUT MASS: THE BYZANTINE DILEMMA

From the above comparisons it is evident that the overall schema of the Portail Royal dominated such doorways in and around the Ile-de-France to the end of the twelfth century. However, apart from the iconographic aspects of costume and attributes, and the easily imitated details of drapery, there is very little evidence of the direct influence of the Head Master’s personal style. His approach to form and space in the central doorway at Chartres represents a sudden intrusion into the art of monumental sculpture in 12th-century France for which his contemporaries were not prepared. What then was the source of his unusual and sophisticated figure style?

In a seminal essay on the influence of Byzantine Art on the West, Wilhelm Koehler credited the Head Master with taking two revolutionary ideas from Byzantine Art: ‘that of the articulated body and that of the animated figure,’ and making them ‘the cornerstones of a new style, the Gothic.’ He also found an analogy for the sculptor’s integration of body and spirit in the growing speculation among western writers on the nature of the human being, as the result of the translation of Greek and Arab texts at the end of the eleventh century.22

Koehler limited his discussion of the Head Master’s sculpture to the enthroned Christ and the Winged Man of Saint Matthew, and his examples of Byzantine Art to manuscripts and mosaics of the Second Golden Age. Otto von Simson added the possible influence of ivory carving on the column-figures at both Saint-Denis and Chartres, citing the Harbaville Triptych in the Louvre as a parallel for the over-all schema of the Portail Royal.23

Such references suggest a strong, but general, stylistic influence of Byzantine Art in the West, with Chartres as its centre. However, more direct comparisons between the sculptures of the Head Master and specific Byzantine works of art suggest an even closer link with the Eastern Mediterranean. It must be understood, however, that we are not here
concerned with the iconographical program of West Doors as a whole. It has already been demonstrated that the sculptural program of the west façade at Chartres springs from the theological and scholarly concerns of the cathedral school. We have also found that the program of the central doorway reflects the new alliance of the Monarchy and the Church. We may therefore assume that the cathedral chapter, if not the Bishop himself, would play a decisive role in the choice of subject-matter and the message it was meant to convey.

From what remains of Byzantine sculpture of the Second Golden Age it seems clear that figures in the round were exceptional from the 10th to the 12th centuries, especially in the case of holy images. For this reason the ivory statuette of the standing Hodegetria in the Victoria and Albert Museum is unusual, and indeed may be unique (Fig. 36).

Although a number of versions of this composition survive as low reliefs, some of them without the surrounding panels, in this case we have a three-dimensional figure that can be viewed from all sides. The contractions for ΜΗΤΕΡ ΘΕΟΥ and ΙΗΣΟΥΣ ΧΡΙΣΤΟΥ that are usually inscribed on the background of the relief panels are here projected onto the folds of drapery. As in the Queen of Sheba at Chartres the face of the Virgin is smoothly modeled to reveal the underlying structure, and the eyes sink back into their sockets. In the ivory the eyes appear to have an almost hypnotic stare, which would disappear if the holes indicating the pupils were surrounded, as they perhaps once were, with painted irises. Like the wimple of the queen, her veil hangs loosely about her neck, and the drapery pulls, stretches and falls in slack curves or a myriad of tightly gathered vertical folds, and ends in softly meandering zigzags and ripples at the hems.

Yet, when we examine this natural-seeming drapery more closely, we observe how shallow the carving really is, and how much of the ivory statuette is in fact low relief. A view from the side (Fig. 36 left) shows that the projection of the Christ Child into space and the forward movement of the Virgin’s arm are actually compressed within a shallow depth, and that the seemingly full modeling of her left leg flattens into an almost cylindrical surface. This is obviously the work of an accomplished sculptor, but one who was accustomed, like a Renaissance medallist, to creating the effect of the third dimension.
in low relief by means of subtle modeling. We find the same reticence in the Maiestas Domini at Chartres.

Another striking parallel for the Head Master’s style can be found in the equally unusual pierced ivory panel, also in the Victoria and Albert Museum, representing the busts of John the Baptist and four other saints in roundels (Fig. 37). Here are the same wavy, flowing masses of hair and beard, falling in finely incised locks, as we find in the Maiestas Domini at Chartres; here too the deeply-cut pupils of the eyes; and once again the pull and stretch of soft cloth, with irregular meandering hems. Even more clearly than in the statuette of the Virgin and Child, the illusion of the fully rounded figure depends on the superbly controlled surface modeling, as a raking shot of the whole panel reveals (Fig. 37 right). The concentric curves that model the Baptist’s right shoulder produce the same illusion of volume as those on the arms of the male column-figures to the right of the centre door at Chartres and the upraised arm of Christ in the tympanum (Figs 10 & 32).

Both ivories represent a preference for low relief in Byzantine ivories that goes back to the 10th century at least. We find this also in large-scale works in marble, such as the orant Virgin from the monastery of Mangana now in the Ottoman Museum, and spolia such as the Deësis in San Marco, and the Annunciation in SS Giovanni e Paolo, in Venice.

One of the earliest ivories of the Second Golden Age, usually dated to the mid-tenth century, is the panel thought to represent the mystical coronation by Christ of the Emperor Romanos II and the Empress Eudokia, in the Cabinet des Médailles in Paris (Fig. 38). In this example we have a parallel for the steeply sloping footstool of the Chartres Christ in the circular dais on which Christ stands in the ivory carving. Here too we have the illusion of looking up at the face of Christ at a slight angle, and of looking down at his feet as if from above. The downward-pointing toes of Romanos and Eudokia have much the same effect as those of the column-figures at Chartres.

For the treatment of the Lion and the Ox of the tympanum we can find parallels in the Veroli Casket in the Victoria & Albert Museum (Fig. 39). Here too the impression of volume is given by shallow modeling of a foreground surface, which includes the near legs
of the animals. This is set off from an empty background plane to which the far legs are attached, as in the tympanum at Chartres.
Figure 37 left: John the Baptist & Saints, ivory, Byzantine, 10th-12th century, Victoria & Albert Museum, front view. Right: John the Baptist & Saints, oblique view (photos Victoria & Albert Museum)
Figure 38. Christ crowning Romanos & Eudokia, ivory, Byzantine, 10th century, Bibliothèque Nationale, Paris (photo: Services photographiques)
THE INFLUENCE OF ANCIENT DRESS

It is generally accepted that the revival of naturalism in the Second Golden Age of Byzantine Art was based on examples from ancient art. In the case of carvers in marble and ivory it would not be surprising if they found their inspiration in the monuments of the ancient world, many of them on constant view since the time they were carved. For instance, low reliefs similar to those of the Parthenon frieze could have inspired the carvers of ivory panels like those of the Veroli Casket. Also figures such as the Caryatids of the Erechtheum could have inspired the déhanchement in the pose of the ivory Hodegetria, with the resulting contrast of straight flute-folds and clinging loops of drapery. However, as
the exceptional nature of the latter example demonstrates, there was apparently a general
aversion to sculpture in the round. The Head Master too seems to have been inspired by
ancient sources, and, in spite of the apparent projection of his figures, shows a similar
reluctance to transgress the limits of his created space.

A concomitant of the ‘articulated body’ in art of the Second Golden Age is a renewal
of the rational structure of the drapery that clothes it. In this respect too the Head Master's
figure of Christ follows current Byzantine practice. Unlike that of Romanesque examples
at Moissac, Vézelay and Autun, the drapery of the Chartres figure can be clearly read in
terms of ancient dress.

Apart from the *manicae* or tight-fitting sleeves with embroidered cuffs, two
garments are visible: an ankle-length tunic with ample sleeves, and a simplified version of
the toga. One end of the latter is pulled over the left shoulder, and allowed to hang down
over the left arm. The other end is brought around the back of the neck and is hooked over
the right shoulder. To leave the right arm free it is then brought under the right armpit and
across the abdomen, to be fastened, or tucked into a belt, under the left arm. Since the
ancient toga was elliptical rather than rectangular, the hem reaches the ankle on the
wearer's right side, but rises almost to the knee on his left. A closely similar arrangement of
drapery may be seen in the full-length seated figure of Christ in the dome mosaic of the
Martorana in Palermo, a Byzantine work dating from 1143.31

**CYCLORAMIC PROJECTION AND EUCLID’S OPTICS**

Although Byzantine artists made use of a variety of projective devices in both painting and
sculpture, an example such as the Romanos ivory indicates a familiarity with Euclid's
Optics, written c.300 B.C. but available in Greek manuscripts from the tenth to the twelfth
century. This work expresses in a series of geometrical propositions the relationship
between the real dimensions of objects and their apparent dimensions in our visual
experience, which vary according to our angle of vision.32

Euclid begins with twelve definitions, of which the fourth states ‘that those things
seen within a wider angle appear larger, and those things seen within a narrower angle
appear smaller, and those things seen within equal angles appear to be the same size.’ Euclid was, of course, concerned with the apparent distortions of visual perception, not with the creation of a system of pictorial perspective. Still, it might well have occurred to artists aware of his theories that by projecting some of these distortions on a flat, or nearly flat, surface, an illusion of three-dimensional form and space could be created.

For instance, Proposition 10 reads: ‘On a horizontal plane situated below the observer's eye those parts which are farther away appear to be more elevated.’ The matching Proposition 11 reads: ‘On a horizontal plane situated above the observer's eye those parts which are farther away appear to be lower down.’ In the Romanos ivory the carver has created the illusion of depth by raising the far edges of the platforms and daises above the level of the near edges. At the same time he has brought Christ's right eye, which is turning away from the observer, lower down than his left eye, which we assume to be on the same horizontal plane above our eye-level.33

Proposition 36 deals with foreshortening, and explains why a chariot wheel appears oval when seen obliquely. By turning this observation around the carver of the Romanos ivory was able to create the illusion of a circular dais seen at an angle from above by making it an oval on his panel.

When we turn to the Portail Royal at Chartres we find that the Head Master has applied the same observations of Euclid to create the illusion of depth in a shallow space. Taking his cue from Propositions 10 and 11 he has raised the bases of the figure-blocks progressively higher, and brought their tops progressively lower on either side of the point perpendicular to the point of projection to make them appear farther away (Figs 20 & 26). Like the carver of the Romanos ivory he could have learned from the chariot-wheel example of Proposition 36 to make his semicircular footstool oval rather than circular.

The Chartres master's whole cycloramic system of projection is closely related to Euclid's geometry of vision. The use of chords rather than sectors of arcs in determining the lengths of the figure-blocks on the door embrasures, and the vertical intervals and horizontal dimensions of the throne in the Maiestas Domini may also be justified by reference to the *Optics*. Although Euclid rarely includes arcs in his illustrative diagrams,
their presence may be implied as a gauge of the comparative sizes of the angles. Since, as he states in Proposition 22, an arc seen on the same plane appears to be a straight line, the sector of an arc of projection seen from the point of projection appears to be identical with its chord.

**WAS THE HEAD MASTER A GREEK?**

Apart from the ‘articulated body’ and rationalized drapery in the figure of Christ, we have found in the works attributed to the Head Master at Chartres two stylistic features that cannot be matched in Western Europe in the middle of the 12th century. These are an illusionistic low relief modeling, and a cycloramic projection of form and space. The first we have found to be characteristic of sculpture of the Second Golden Age of Byzantine Art. The second is at least implied in small-scale works such as the Romanos ivory, even though nothing of the complexity of the Chartres tympanum has come down to us. Furthermore, the underlying geometric basis of the Head Master's scheme of projection can be explained only by an understanding of Euclid's *Optics*, a closed book to all but a handful of scholars in the West at that date.

It will, of course, be pointed out that in later Byzantine mosaics such as those in the Kariyeh Djami in Istanbul the architectural elements appear to reverse the ‘normal perspective’, and that even in the Romanos ivory the rectangular daises are shown with their receding sides parallel, or slightly divergent. Rather than suggesting a viewpoint ‘behind the scene’, as some would have it, this may simply be the result of a theological reading of the *Optics* that sees the natural distortions of vision as false, and therefore to be counteracted by the artist. This rejection of illusionism would also be in keeping with the prevailing opposition to sculpture in the round. In a western setting, and for a western patron, the Head Master would be free to exploit the illusion of space, and push towards three-dimensional form. But even he reverted to normal Byzantine practice when he extended the top of the throne into a wide parallelogram.

It is true that Euclid’s *Elements* were already known at Chartres, and that regular geometric figures such as the square and the 1:2 rectangle are built into the structure of the
cathedral’s west façade. As Von Simson puts is, geometry was seen as ‘a principle of order that alone could convey to the senses the vision of ultimate glory to which the entire façade is dedicated.’\textsuperscript{35} Although it might be argued that copies of Euclid’s \textit{Optics} too had appeared in the West early in the 12th century, and had been translated into Latin by the middle of the century,\textsuperscript{36} in the whole of France the Head Master alone seems to have grasped their potential application to sculpture. It is clear that the overall format of the West Doors of Chartres builds on the same western traditions as that of the West Doors of the Abbey of Saint-Denis, and both share in the development of the column-figure as a key element of portal design. It is only in the central portal at Chartres, the \textit{Portail Royal}, that both the design and the iconography are transfigured by a style uninfluenced by the linear and planar abstraction of Romanesque Art. Where else but in the ateliers of the Eastern Empire could a sculptor of such sophistication have emerged?

Finally, as we have seen, there is only one measurement on which the whole scheme of the embrasures and tympanum depends. This is the length chosen by the Head Master as the maximum possible height for the blocks from which the column-figures were to be carved. All the rest were obtained by geometric means. The figure arrived at in this study by working back from the final results is 257.55 cm (101.4''). The standard unit of measurement in Byzantium was the \textit{pous}, which equalled 31.23 cm, and was divided into 16 \textit{daktyloi}. The Head Master’s chosen 257.55 cm can be almost exactly divided into 8¼ Byzantine \textit{podes} (257.64 cm). The prevailing unit of measure in France at the time was the \textit{pied du roi} (32.5 cm).
4. THE GREEK AT CHARTRES

A NEW CHRONOLOGY

The exceptional character of the Head Master’s Portail Royal, and its widespread influence throughout France have distorted our dating of his sculpture at Chartres. Following a developmental analogy we have seen his handling of the features of the human face and of the relation of drapery to the limbs of the body as a natural evolution from the experience of sculptors at Cluny and Autun. But the transition from the abstraction of human form and the repetitive patterns of drapery folds at Autun to the expression of intelligent life in the heads and the varied pull and release of the drapery at Chartres would be a quantum leap even for a master like Gislebertus.

If, however, we omit for a moment the work of the Head Master and his assistants from the equation, we can more easily accept the possibility of an earlier date for the sculpture of the embrasures of the West Doors of Chartres. Apart from their awkward imitation of the dress of Bathsheba, the other major sculptors fit quite comfortably into the Romanesque world of the 1130s. It is the Head Master who is the outsider, catapulted into the midst of a group of artists drawn from different parts of France. This suggests something like the following chronology.

Immediately after the fire of 1134 a team of sculptors would have been assembled to carve the sculpture for a new doorway for the west end of the eleventh-century basilica. It was planned that it should emulate and even surpass the Portail Royal at Étampes, completed soon after the National Council of 1130, at which Innocent II was proclaimed Pope. Among the participants on that occasion, including Louis VI, Abbot Suger of Saint-
Denis, Abelard and Bernard of Clairvaux, was Geoffroy de Lèves, Bishop of Chartres. A new Portail Royal might then have been seen by Bishop Geoffroy as an opportunity to divert royal attention and patronage from Étampes to Chartres by expressing in monumental form the new accord between regnum and sacerdotium.

Among those chosen for the project was the sculptor responsible for most of the South Doorway of Notre Dame at Étampes, whose association with a church enjoying royal patronage would give him additional prestige within the profession. To him perhaps should be given the credit for the invention of the column-figure, even though his plank-like figures at Étampes appear to be suspended against the columns, since the bare shaft continues beneath their feet. (The canopies over his figures suggest that he was used to protecting the end grain of wood sculpture in this way.)

Two others on the team were drawn from northern France. Although related in style to some of the sculptors working at the Abbey of Saint-Denis, they cannot be identified with any individuals on that team. Still, their stylistic similarities with the latter suggest that they were at least contemporaries, rather than followers of the Saint-Denis style at an interval of ten to fifteen years.

Among the sculptors responsible for the side tympana and the archivolts was one identified by Priest as the Master of the Angels, possibly from Burgundy. However, the extent of his work at Chartres is still debatable, since there is a spread in style between the angels of the side tympana and those in the archivolts of the central tympanum. Among the Elders of the Apocalypse attributed to him by Stoddard are standing figures flanking the central tympanum that might be seen as even closer to the Gothic than the column-figures of the Head Master. This raises the question as to their possible later date.

The dominant figure from the outset, if not the designer of the whole scheme of the triple doorway, was the Head Master himself. Brought to France from the eastern Mediterranean by a returning crusader, his credentials would have included his skill in carving ivory and/or marble. His first work on site was probably the figure of Bathsheba, in which he kept to the Byzantine convention of incising the iris of the eyes. His modeling of the face and handling of the drapery are almost too refined for the unfamiliar medium of
limestone, but the impact on his fellow-sculptors was immediate, as we have seen in the female column-figures of the outer embrasures of the side doors. Again, the treatment of the eyes in the enthroned Christ of the central tympanum suggests that this block too was carved soon after his arrival on the site. Later, as soon as he realized that all the sculpture was to be painted, he adopted the local convention of the blank eyeball.

Once the Portail Royal was complete in its original setting its effect on other “Royal Doors” was immediate, as we have seen in the South Doorway of Le Mans Cathedral, which may well date from the late 1130s as Polk suggested. However, here, as in the later copies, the personnel of the column-figures changed as the memory of the original narrative faded.

THE RELOCATION OF THE PORTAIL ROYAL
As has been demonstrated above the Portail Royal was moved at least once, when the three doorways and the lancets above them were squeezed in between the massive bases of the West Towers. When did this take place? Clearly it would have to be after the copy of the Central Doorway was made at Le Mans. The most likely date would seem to be after the fire of 1194, when the westward expansion of the nave called for a new façade flush with the west walls of the towers.

The survival of the three lancet windows, even if in an altered state, suggests that the chapel at the west end of the cathedral was spared the worst ravages of the fire, and that the damage to the sculpture of the three doorways would also be minimal. However, even the dismantling of such a complex ensemble, and its temporary storage on or close to the building site, would have resulted in serious damage to some of the more fragile pieces.

This is particularly evident in the fate of the colonnettes between the column-figures, originally cut from slender blocks of uniform height. It has recently been argued that the present ad hoc assemblage of random lengths was the result of using mass-produced shafts imported from a Paris quarry. However, the survival of upper and lower mouldings (some of them misplaced) suggests that the colonnettes were originally monolithic, and most probably carved on the spot.
Were there losses as well? As suggested above, the reduced number of column-figures in later copies of the Portail Royal may indicate that the missing figures were replaced by plain columns at that date. Also, to what extent were there additions? Apart from architectural ornament, is it possible that we are looking at late-twelfth-century sculpture in some of the archivolts, the work of an Early Gothic ‘Angel Master’, for instance?

THE HEAD MASTER’S LEGACY
The above examination of the Portail Royal has attempted to demonstrate that the master sculptor who created the central doorway of the west façade of Chartres Cathedral, and influenced the design and execution of those around him, was an outsider, and most probably a Greek. To what extent did his work at Chartres influence the future of monumental sculpture elsewhere in France, in Western Europe?

We have seen that the impact of the Central Doorway on the design of doorways throughout France was immediate, and continued throughout the twelfth century. The elegant economy of the tympanum, with the *Maiestas Domini* flanked by symmetrically posed Symbols of the Evangelists, opened up the space for the staging of the *tableaux vivants* of the Gothic Last Judgment. At the same time the tension between the emerging personalities of the column-figures and the restraints of their setting prepared for their interaction in Gothic portals such as those at Amiens and Rheims.

The personal style of the Head Master is an anomaly in the main stream of 12th-century sculpture in France. Had the real significance of his constructed space been grasped at the time, the development of perspective in Western European Art might have followed a very different path. As it turned out his contemporaries and followers in France took from him only what they could understand and use. The superficial, and therefore easily imitated, features of his work - the bold schema of the tympanum and the fluid pattern of drapery folds - spread his influence so widely in the second half of the century that we tend to forget how exceptional his style was in the second quarter.
On a more profound level, we should not discount the impetus he gave to the development of Gothic sculpture in the creation of noble and serene prototypes for the figures of Christ and the saints. Without his *Maiestas Domini* we might never have had the ‘Beau Dieu’ on the trumeau of the South Transept of Amiens Cathedral.

Although he may have substituted a hidden geometric order for the Romanesque “tyranny of the frame” as the setting for his column-figures, he created a tension between them and their columns that was to lead to their liberation and interaction. It is perhaps for this reason that we should regard him as not only the *Hauptmeister* of the *Portail Royal* of Chartres Cathedral, but as the Forerunner of Gothic sculpture, and the greatest creative genius of the twelfth century in Western Europe.

**POSTSCRIPT**

In the end the Head Master must be seen as a tragic figure. Perhaps the barrier of language prevented him from communicating the secret of his hidden geometry to his fellow-sculptors. His masterpiece at Chartres survived for little more than fifty years, to be severely damaged when it was dismantled after the fire of 1194, and, with the flanking West Doors, to be completely scrambled in its new location between the western towers. At the same time his subtle metaphor for the Shape of Eternity was lost for over eight hundred years.
Figure 40. Saint Andrew, Detail of Ivory Panel from Saint-Denis, Louvre Museum.
1 The drawings, made for Bernard de Montfaucon by Antoine Benoist (Paris, Bibliothèque Nationale, Ms français 15634), were illustrated in his Monumens de la monarchie française, (Paris: J.M. Gandouin, 1729-33). Copies of the original drawings were made in reverse from which the engravings were made.


6 Recueil des historiens des Gaules, vol.14, 318-19. A translation is given in Branner, Chartres Cathedral, 94. The date 1145 in the concluding sentence appears to refer to the introduction of the “Cult of the Carts” to Normandy, rather than its inception at Chartres.

7 Stoddard, 14-17 & 160-164, reviews the conflicting theories about the original location of these doors, and the archaeological evidence for their move to their present site.

8 Branner, 149-168.

9 For the important royal connections of Étampes in the early twelfth century see Stoddard, 27-28.

L. Eugène Lefèvre, Le Portail royal d’Étampes, dated the South Portal before 1130, when a National Council met to end the schism that followed the death of Honorius II. Since his successor Innocent II spent from January 18 to 21, 1131, in Étampes as the guest of Louis VI, the creation of a Portail Royal soon after that date would seem more likely.

10 ‘Sculpture and Its Architectural Context at Chartres around 1200,’ The Year 1200: A Symposium, The Metropolitan Museum of Art, 1975, 509-60. If true, why was this sculptor singled out for special treatment?


John James ("An Examination of Some Anomalies in the Ascension and Incarnation Portals of Chartres Cathedral," *Gesta*, vol.XXV, 1, 1986, 101-108) argues that the seeming randomness in the erection of the side doorways was the result of changing personnel during their construction. However, he accepts the present arrangement of the Central Doorway as the original one.

The author is indebted to the Director and staff of the Musée des Monuments François in Paris for their assistance in obtaining some basic measurements of the tympanum from the cast of the central doorway in that collection. He was unable to gain direct access to the original sculpture.

The final projected height depends on the length and number of consecutive chords.

The calculated width of the top of the throne minus its lateral extensions is 73.02 cm (28.75"), as against 73.5 cm (28.93") on the cast. The calculated width of the bottom of the throne is 62.07 cm (24.44"), as against 63 cm (24.8") on the cast. The calculated radius of the intermediate arcs of the mandorla, 121.71 cm (47.92"), is in keeping with its outside width of 125 cm (49.31") on the cast. Because of the backward and forward slopes of the throne and footstool, the vertical intervals were more difficult to measure.


Katzenellenbogen, 7-36.

Victoria & Albert Museum, no.702-1884. A. Goldschmidt and K. Weitzmann, *Die Byzantinischen Elfenbeinskulpturen des X bis XIII Jahrhunderts*, II (Berlin: 1934), no.51. In view of the aversion to sculpture in the round in Byzantine Art could this have been commissioned by, or for, a Western patron?

Carolyn Connor, in *The color of ivory: polychromy on Byzantine ivories*, (Princeton, 1998), argues for a much wider use of color on these works.
Victoria & Albert Museum, no.215-1866. Goldschmidt & Weitzmann, II, no.68. They date both the Hodegetria and the John the Baptist to the 10th century, a position to which Anthony Cutler returns in The Hand of the Master: Craftsmanship, Ivory, and Society in Byzantium (9th–11th centuries), (Princeton University Press, 1994). The author is indebted to Paul Williamson for having the side views of both pieces photographed for this publication.

Sergio Bettini, La Scultura Bisantina, II, Novissima Enciclopedia Monografica Illustrata, (Florence: NEMI, 1944), 34, 40, 41. The avoidance of cast shadows in the representation of sacred figures in sculpture as well as pictorial art may be related to verse 17 of the first chapter of the Epistle of James: ‘Every good gift and every perfect gift is from above, and cometh down from the Father of lights, with whom there is no variableness, neither shadow of turning.’


For a similar use of changing eye levels to suggest a view from below, see Cutler, The Hand of the Master, Figs 94 and 99. His Plate IV of the Romanos panel is taken from slightly to the right, and is therefore skewed.


Otto von Simson, 155.


See n.9. For the presence of Geoffrey of Chartres see Maxime de Mont-Rond, Essais historiques sur la Ville d’Etampes, 1836, 111-116.

This copy of “The Greek at Chartres” was completed at London, Ontario, Canada, on November 2, 2014.