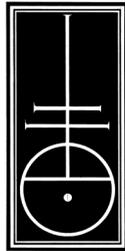


VISIBLE SPIRIT  
THE ART OF  
GIANLORENZO BERNINI

VOL. I

IRVING LAVIN



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## III

**Bozzetti and Modelli****Notes on Sculptural Procedure from the  
Early Renaissance through Bernini\***

*Dedicated, with admiration and gratitude,  
to Richard Krautheimer*

ONE of the problems that has most occupied historians of Italian Renaissance art during recent years concerns the amount and kind of preparation that lay behind the great mural decorations of the trecento. Following the basic work of Robert Oertel, and especially since the discovery of sinopias (the monumental and often astonishingly sketchy preparatory drawings executed directly on the wall) the old view that the medieval painter worked by a more or less mechanical method of copying from prescribed models and patterns can no longer be maintained. Indeed, the chief controversy has been reduced at present to the question whether even small-scale compositional sketches were used.<sup>1</sup> There has taken place what

\* The observations presented here are in the way of prolegomena to a general survey of sculptors' models and bozzetti and related problems of working procedure; this will form part of the introduction to a critical corpus of the bozzetti of Gianlorenzo Bernini, which I am now preparing for publication.

<sup>1</sup> R. Oertel, "Wandmalerei und Zeichnung in Italien," *Mitteilungen des kunsthistorischen Instituts in Florenz*, 5, 1940, pp. 217 ff. Recent bibliography: E. Borsook, *The Mural Painters of Tuscany*, London 1960; U. Procacci, *Sinopie e affreschi*, Milan 1961 (review, with additional observations by Procacci, by M. Muraro, *Art Bulletin*, 45, 1963, pp. 154 ff.); L. Tintori and M. Meiss, *The Paintings of the Life of St. Francis in Assisi with Notes on the Arena Chapel*, New York 1962 (review by J. White, *Art Bulletin*, 45, 1963, pp. 383 ff.); now

amounts to a fundamental reversal in our view of how works of art were conceived. The medieval artist, formerly thought of as being bound by an iron clad system of servile copying, now emerges as the paragon of direct and unpremeditated creation. It was the Renaissance that sought to objectify and rationalize the artistic process into a fixed body of rules.

The problem has its counterpart in sculpture, though it has received far less attention in this domain. And it is in this context that I shall offer some rather loosely connected and tentative remarks on the history of the use of *bozzetti* and *modelli* and Sculptural procedure in general.<sup>2</sup>

A useful point of departure is provided by the pioneering study by Carl Bluemel on Greek sculptural technique, first published in 1927.<sup>3</sup> On certain unfinished pieces of ancient statuary there is preserved a number of small protuberances or knobs, with tiny holes in the center (Fig. 5, especially on the head and above the knees; Fig. 6, on the chest and knee). By analogy with modern sculptural practice, it is evident that these knobs are what are called 'points,' fixed reference marks by means of which measurements are made in copying from a model or another sculpture. Such examples prove beyond question that a system of mechanical pointing-off was known and used in antiquity.<sup>4</sup> On this basis, Bluemel made an observation that is of fundamental significance. It concerns an inherent difference in procedure between sculpture that is executed free and directly in the

L. Tintori and M. Meiss, "Additional Observations on Italian Mural Technique," *Art Bulletin*, 46, 1964, p. 380. An important contribution is that of E. Kitzinger, *The Mosaics of Monreale*, Palermo 1960, pp. 64 ff.

<sup>2</sup> The reader should bear in mind that our attention will be focused on monumental stone sculpture. Models for bronze and terracotta sculpture pose a special problem because, unless there are external indications, it is practically impossible to determine with certainty whether a given example is a study or the work itself in a pre-final stage. Sculptural models for painting also form a category apart (J. von Schlosser, 'Aus der Bildnerwerkstatt der Renaissance,' *Jahrbuch der kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses*, 31, 1913, pp. 111 ff.).

<sup>3</sup> *Griechische Bildhauerarbeit*, Berlin 1927 (Jahrbuch des deutschen archäologischen Instituts. Ergänzungsheft XI), published independently thereafter (third edition, Berlin 1940) though omitting valuable documentation; English edition, *Greek Sculptors at Work*, London 1955. Further observations by Bluemel appear in *Archäologischer Anzeiger*, 54, 1939, cols. 302 ff.

<sup>4</sup> Recent bibliography and examples: P. E. Corbett, 'Attic Pottery of the Late Fifth Century from the Athenian Agora,' *Hesperia*, 18, 1949, pp. 305 f, 341; G. M. A. Richter, *Ancient Italy*, Ann Arbor, Michigan 1955, pp. 105 ff.; E. B. Harrison, 'New Sculpture from the Athenian Agora, 1959,' *Hesperia*, 29, 1960, pp. 370, 382; G. M. A. Richter, 'How were the Roman Copies of Greek Portraits Made?,' *Römische Mitteilungen*, 69, 1962, pp. 52 ff.

stone, and sculpture produced by pointing off from a model. In the former case, characteristic of archaic and classical Greece, the artist tends to carve the statue uniformly in the round (Fig. 7). He removes, as it were, a series of 'skins' from the figure, and at any given stage in the execution it will show a more or less uniform degree of finish. With the technique of pointing-off, used particularly by the Romans for copying Greek statuary, the tendency is to work the figure from one side at a time, and to bring some parts to a state of relative completion before others.

These questions seem to be largely unexplored as regards 'medieval sculpture'.<sup>5</sup> What little evidence there is comes mainly from the Gothic period. But though limited the evidence is of great value because it speaks with a single and unequivocal voice. Bluemel himself cited several unfinished sculptures, such as the small female figure, probably an allegory of Fortitude, from the late fourteenth century in Orvieto (Fig. 10). The technique is basically similar to that of archaic Greek sculpture; indeed, all the medieval examples show the characteristics of direct carving, without pointing from a model.<sup>6</sup>

Even more striking is the consistency of the documentary evidence, which for the late fourteenth and early fifteenth centuries, particularly in Italy, is rather extensive. We have the abundant records of both Florence

<sup>5</sup> An important extension of Bluemel's analysis to the development of Egyptian sculpture was made by R. Anthes, 'Werkverfahren ägyptischer Bildhauer,' *Mitteilungen des deutschen Instituts für ägyptische Altertumskunde in Kairo*, 10, 1941, pp. 79 ff.

<sup>6</sup> Cf. after Bluemel, T. Müller in *Reallexikon zur deutschen Kunstgeschichte*, Stuttgart 1937 ff, II, cols. 608 ff, s.v. 'Bildhauer'; also F. V. Arens in *ibid.*, cols. 1062 ff, s.v. 'Bosse, Bossenkapitell.' On medieval sculptural procedure generally, see P. du Colombier, *Les chantiers des cathédrales*, Paris 1953, pp. 83 ff, with bibliography, though much more study is necessary.

Needless to say, considerable variation in degree of surface finish on a given work is possible within the general principle of 'uniform, in-the-round' carving in medieval sculpture. Yet, there are real exceptions. On certain incompleated Romanesque capitals, parts were brought to a final finish before the rest of the carving was even roughed out (suggesting the use of a repeated pattern?); cf. J. Trouvelot, 'Remarques sur la technique des sculpteurs du moyen-âge,' *Bulletin monumental*, 95, 1936, pp. 103 ff. J. White, in his exemplary study of the Orvieto façade reliefs, showed that a uniform working technique was used only in the initial stages of blocking-out; execution of the subsequent stages progressed at varying rates ('The Reliefs on the Façade of the Duomo at Orvieto,' *Journal of the Warburg and Courtauld Institutes*, 22, 1959, pp. 254 ff). In this case however, we are not dealing with an artist's 'creative procedure,' but, as White concludes, with a workshop system in which specific kinds of secondary tasks were assigned to 'specialists' once the main forms had been established by the leading masters.

and Milan cathedrals. And they show by repeated instances, and without exceptions, that the monumental sculptures of these buildings were executed at this period not from models but from drawings. The drawings were not provided by the executing sculptors themselves but by other artists; and these other artists were usually not sculptors at all, but painters.<sup>7</sup> The evidence concords perfectly with what the preserved examples suggested, for sculpture executed exclusively from drawings is of necessity carved directly.

This then was the situation in the period immediately preceding the emergence of the great masters of the early Renaissance, and it was the system under which they grew up. It is astonishing how rapidly and completely things changed. We cannot even remotely conceive of Ghiberti or Donatello or Luca della Robbia executing sculpture as a general practice after someone else's drawings, especially a painter's. And as the sculptor began to provide his own designs, the documents show with equal consistency that these designs now normally took the form of models.<sup>8</sup> Drawings

<sup>7</sup> On sculptor's drawings generally *cf.* H. Keller, in *Reallex. z. deut. Kunstg.*, II, cols. 625 ff, s. v. 'Bildhauerzeichnung.' On the painters' drawings for sculpture in Milan and Florence, *cf.* Oertel, *op. cit.*, pp. 267 ff (also, for Milan, U. Nebbia, *La scultura del Duomo di Milano*, Milan, 1910, pp. 45 ff, 59 ff). This suggests a link between the Milanese and Florentine series of 'giganti' as regards working procedure, as well as program (*cf.* R. and N. Stang, 'Donatello e il Giosuè per il Campanile di S. Maria del Fiore alla luce dei documenti,' *Acta ad archaeologiam et artium historiam pertinentia. Institutum Romanum Norvegiae*, 1, 1962, p. 119).

Needless to say, drawings by sculptors are documented in the trecento (*cf.* Nino Pisano, Scherlatti tomb, Pisa, 1362, I. B. Supino, *Arte Pisana*, Florence, 1904, pp. 230 f.; wooden choir-stall, Siena cathedral, 1377 ff, G. Milanesi, *Documenti per la storia dell'arte senese*, Siena, 1854-56, 1, pp. 332, 356, etc., R. Krautheimer, 'A drawing for the Fonte Gaia in Siena,' *Bulletin of the Metropolitan Museum of Art*, 10, 1952, p. 272).

It must be emphasized that, regardless of who made them, the question whether there were true preparatory studies, as distinct from commission or working drawings, remains open.

<sup>8</sup> On models and bozzetti generally, *cf.* H. Keller and A. Röss, in *Reallex. z. deut. Kunstg.*, II, cols. 1081. ff, s. v. 'Bozzetto,' and Müller, *ibid.*, cols. 600 ff.

This writer must report that so far he has encountered no certain example, either preserved or documented, of a model in whatever scale for monumental stone figural sculpture before the fifteenth century. It should be emphasized, however, that there was an important trecento practice of making models for architectural elements which may or may not have included sculptured decorative details (documented at Prague, Xanten, Bremen, Milan, Florence, and Bologna; *cf.* Keller, *loc. cit.*, and L. H. Heydenreich, in *idem*, I, cols. 918 ff, s.v. 'Architekturmodell'); to this tradition presumably belongs the plaster model made by Claus Sluter for the 'maçonerie et façon' of the fountain at Dijon (H. David, *Claus Sluter*, Paris 1951, p. 86).

continue to be used, of course, but they are no longer the distinctive basis upon which works were commissioned or appraised.<sup>9</sup>

I suspect that the documentary notice of one of the key monuments in this Florentine procedural revolution is still preserved to us. This is the record referring to one of the famous series of colossal statues, or *giganti*, commissioned for the cathedral of Florence, the series that resulted ultimately in the *David* of Michelangelo. It is a partial payment made in 1415 jointly to Donatello and Brunelleschi for a small figure of stone, draped with gilt lead (*una figuretta di pietra, vestita di piombo dorato*); they were to execute the figure 'for a test and illustration of the large figures that are to be made upon the buttresses (*per pruova e mostra delle figure grandi che s'anno a fare in su gli sproni*).<sup>10</sup> As far as I can discover this is the first reference to a model made in preparation for a piece of free-standing monumental sculpture since classical antiquity.

It is important to emphasize that the chief reason for making the model was probably of a technical nature. We know that considerable difficulties were experienced with the giant that Donatello had made a few years earlier out of terracotta; it had to be repaired on several occasions within a few years after it was completed.<sup>11</sup> Chances are that Donatello and Brunelleschi were trying out what would indeed have been a novel combi-

<sup>9</sup> Jenö Lányi was apparently the first to draw attention to this fact, and stressed the marked contrast between the Florentine masters on the one hand and on the other Jacopo della Quercia, in whose work drawings play a leading role ('Quercia-Studien,' *Jahrbuch für Kunstwissenschaft*, 1930, pp. 25 ff.). But in this effort to establish Quercia's originality, Lányi overlooked the fact that, in this respect at least, Quercia was carrying on a medieval tradition that was no less firmly rooted in trecento Siena than it had been in Florence and Milan (*cf.* Oertel, *op. cit.*, p. 263). Lányi was right, however, in emphasizing Quercia's departure, along with the Florentines, from the late trecento tradition of monumental sculpture executed on the basis of drawings supplied by painters.

Lányi (*op. cit.*, pp. 53 f) also misinterpreted the passage in which Vasari discusses Quercia's equestrian monument for the catafalque of Giovanni d'Azzo Ubaldini (*Le vite . . .*, ed. G. Milanesi, Florence 1906, II, pp. 110 f) to mean that Vasari attributed to Quercia the invention of the full-scale sculptor's model. Vasari in fact is referring specifically to the material construction of the piece, which in the sixteenth century was used for large models. Quercia's monument, however, was not a model in the sense of being preparatory to execution in more permanent form, but belongs to the category of large scale decorations executed in temporary materials for special occasions such as funerals and festivals.

<sup>10</sup> C. Poggi, *Il Duomo di Firenze*, Berlin 1909, doc. no. 423.

<sup>11</sup> *Cf.* H. W. Janson, 'Giovanni Chellini's "Libro" and Donatello,' in *Studien zur toskanischen Kunst. Festschrift für Ludwig Heinrich Heydenreich*, Munich 1964, p. 134.



1. Benedetto da Maiano,  
*Confirmation of the  
Order of St. Francis*,  
Terracotta,  
Victoria and Albert  
Museum, London.



2. Benedetto da Maiano,  
*Confirmation of the  
Order of St. Francis*,  
Pulpit,  
S. Croce, Florence.



3. Luca della Robbia,  
*Crucifixion of St. Peter*,  
National Museum,  
Florence.

4. Verrocchio,  
Model for the  
Forteguerri  
monument,  
Terracotta,  
Victoria and Albert  
Museum, London.



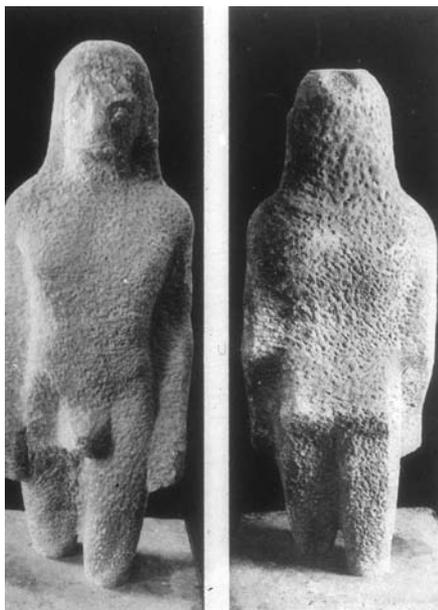


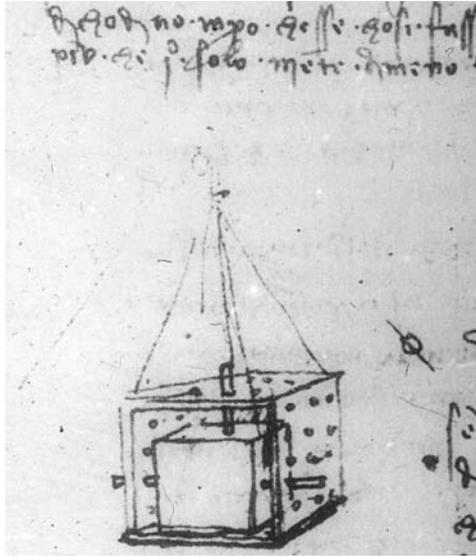
5. Unfinished group, *Dionysus and Satyr*,  
National Museum, Athens.



6. Unfinished statuette of a Youth,  
Agora, Athens.

7. Unfinished archaic  
Kouros,  
National Museum,  
Athens.





8. Leonardo,  
Drawing for a  
mechanical pointing  
device for sculpture,  
Ms. A., Institut  
de France,  
Fol. 43 recto.



10. Unfinished statuette, Cathedral  
Museum, Orvieto.



9. Michelangelo,  
Bozzetto for a  
two-figure group,  
Terracotta,  
Casa Buonarroti,  
Florence.

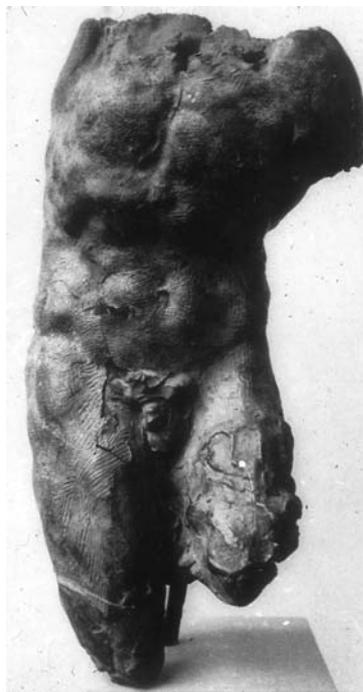


11. Michelangelo, *David*, Accademia, Florence.

12. Michelangelo,  
*David*, Detail,  
Accademia,  
Florence.



13. Verrocchio.  
*Resurrection*, Detail,  
Painted terracotta,  
National Museum,  
Florence.



14. Michaelangelo,  
*Torso*,  
Terracotta,  
British Museum,  
London.

15. Michelangelo,  
Model of a  
River God,  
Accademia,  
Florence.



16. Michaelangelo,  
*St. Matthew*,  
Accademia,  
Florence.



17. Giambologna,  
Cast model  
for the Bologna  
Neptune fountain,  
Museo Civico,  
Bologna.

nation of stone with a protective cover of metal in the form of drapery. But even if it was primarily a technical rather than an aesthetic experiment it represents a radical new departure in the way of conceiving a work of sculpture.<sup>12</sup>

What were the models of the early Renaissance like, and how were they used? The evidence for the first question is entirely indirect; so far, at least, I have not encountered a single Italian work from the first half of the quattrocento that is convincing as a model for sculpture.<sup>13</sup> But since the designs, whether drawings or models, mentioned in the documents were made as the basis for commissions and were often intended to be kept as a standard against which the completed work would be judged, it seems probable that they were highly finished.<sup>14</sup> This assumption receives some support from examples from the second half of the century that have a better (though by no means certain) claim to be regarded as authentic models. Such is the terracotta in the Victoria and Albert Museum, showing the Confirmation of the Order of St. Francis, one of a series related to the reliefs on Benedetto da Majano's Pulpit in S. Croce of around 1475; the executed sculptures show only slight variations from the models (Figs. 1, 2).<sup>15</sup>

As to the way the models were used we have one important direct clue for the early part of the century — an unfinished relief by L. della Robbia

<sup>12</sup> Brunelleschi's participation and the fact that what was being planned was, after all, a piece of architectural sculpture, may not be fortuitous. It is my feeling that this experiment, and the development of the sculptor's model generally was closely related to the earlier tradition of architectural models (*cf.* above, n. 8).

<sup>13</sup> For a convenient list of early terracottas, *cf.* C. von Fabriczy, 'Kritisches Verzeichnis toskanischer Holz- und Tonstatuen bis zum Beginn des Cinquecento,' *Jahrbuch der Preussischen Kunstsammlungen*, 30, 1909, Beiheft, pp. 1 ff.

In particular, I would reject as a 'Nachbildung' the small plaque (with original paint and gilding) in the museum at Arezzo first published by Fabriczy as a model by Bernardo Rossellino for the relief of the Madonna della Misericordia ('Ein Jugendwerk Bernardo Rossellos und spätere unbeachtete Schöpfungen seines Meissels,' *Jb. d. Preuß. Kunstsgn.*, 21, 1900, pp. 99 ff); similarly, the relief published by A. Marquand ('A terracotta Sketch by Lorenzo Ghiberti,' *American Journal of Archaeology*, 9, 1894, pp. 206 ff; *cf.* R. Krautheimer with T. Krautheimer-Hess, *Lorenzo Ghiberti*, Princeton 1956, p. 191), etc.

<sup>14</sup> *Cf.*, e.g., C. Guasti, *Il pergamo di Donatello pel Duomo di Prato*, Florence 1887, p. 13; A. Marquand, *Luca della Robbia*, Princeton, etc., 1914, pp. 78, 197; Poggi, *op. cit.*, doc. 1099.

<sup>15</sup> See now, J. Pope-Hennessy, *Catalogue of Italian Sculpture in the Victoria and Albert Museum*, London 1964, pp. 156 ff.

in the Bargello, representing the Crucifixion of St. Peter (Fig. 3). Together with its partner, which shows the Deliverance of St. Peter, it formed part of an altar in the cathedral of Florence, commissioned in 1439, for which a wooden model is recorded in the documents.<sup>16</sup> The reliefs, however, give no evidence of having been worked from a model; there are no pointing marks, and while the surfaces are not absolutely uniform the artist certainly did not bring one part to completion before beginning another. The technique is similar to that of the late medieval examples, and it would appear that the introduction of models was not accompanied by a radical change in procedure. In general we may say that the model was a kind of preview of the final work; it was not really a study, and it did not play a really integral role in the creative process.

The one literary source we have concerning the sculpture of this period, Alberti's *Treatise on Sculpture*, written probably in the 1430s gives the same impression.<sup>17</sup> It is, needless to say, one of the major documents in the Renaissance tendency to codify artistic creation. Its chief technical contribution is that it provides a system whereby the measurements of a statue can be taken and proportionally enlarged or reduced. But it is important to realize that Alberti does not actually give a method of pointing off. He tells you how to obtain a given dimension on the prototype, but not how actually to reproduce it in working the stone. The distinction is meaningful because it is entirely possible to copy a model by taking its measurements, and yet to work the stone directly without a true method of pointing-off. Such a procedure is exactly what the other evidence we have cited suggests for the early quattrocento.<sup>18</sup>

In fact, the first instance of a mechanical pointing method comes only at the end of the century. This is the famous perforated box of Leonardo's *Trattato*, for which a drawing appears in Ms. A of the Institut de France, of

<sup>16</sup> A. Marquand, *op. cit.*, pp. 41 ff. The wording of the document (*ibid.*, p. 44) suggests that the figural parts may not actually have been included on the model.

<sup>17</sup> H. Janitschek, *Leone Battista Alberti's Kleinere Kunsttheoretische Schriften*, Vienna 1877 (Quellenschriften für Kunstgeschichte und Kunsttechnik des Mittelalters und der Neuzeit, XI), pp. 165 ff.

<sup>18</sup> A proportional enlarging method is alluded to by Ghiberti (J. von Schlosser, *Lorenzo Ghiberti's Denkwürdigkeiten*, Berlin 1912, 1, pp. 50 f, cf. II, p. 38), and Pomponius Gauricus also includes one (H. Brochhaus, *De sculptura von Pomponius Gauricus*, Leipzig 1886, p. 26).

about 1492 (Fig. 8).<sup>19</sup> Leonardo's device, it must be admitted, is very crude. It would not allow for more than a relatively small number of points to be taken, it would be cumbersome for work on a large scale, and would not be very well suited for enlargements or reductions in scale. If in this case, as in others, Leonardo's invention was at the vanguard of its time, we must conclude that pointing techniques were being experimented with, but were not very highly developed by the end of the quattrocento.

If this assumption is correct we can perhaps gain some insight into the peculiar facts surrounding that other famous giant commissioned for Florence Cathedral from Agostino di Duccio in 1464. According to the record the statue, which was to be 9 braccia high, was to correspond to a model that Agostino had made in wax.<sup>20</sup> It was to have been made of four pieces of white marble, one for the head and neck, one for each arm, and one for the rest of the body. Since so far as we know Donatello's and Brunelleschi's figure never got beyond the model stage, Agostino's would have been the first colossal freestanding marble statue since antiquity. One cannot but admire the boldness of his attempt, and I suspect that it was based upon a pointing method of some kind. At least, a system of proportional measurement must have been involved if he expected to reproduce a wax model on a colossal scale. We may recall, moreover, that Alberti had specifically recommended his method both for executing sculpture in several pieces, and for enlargement to superhuman size.<sup>21</sup>

But Agostino's daring did not end there. In December of 1466 the operai of the cathedral agreed to increase Agostino's fee for the figure, because now he proposed to execute it from a single block of marble, rather than four.<sup>22</sup> Most remarkable is the fact that the document stipulates that the increase in fee was determined not only by the great *spendio et expensa*, but also by the greater *intellecto* involved in the new scheme. This extra

<sup>19</sup> C. Ravaisson-Mollien, *Les manuscrits de Léonard de Vinci. Le Manuscrit A de la bibliothèque de l'institut, Paris 1881*, fol. 43 *recto*; cf. J. P. Richter, *The Literary Works of Leonardo da Vinci*, London, etc., 1939, II, no. 706; A. P. McMahon, *Treatise on Painting*, Princeton 1956, I, no. 556, II, fols. 160 *verso*, 161 *recto*. Another sketch of a similar device, in the Codex Atlanticus (fol. 68 v-a), was kindly brought to my attention by Prof. Carlo Pedretti, who dates it 1500-05 (*Studi Vinciani*, Geneva, 1957, p. 268).

<sup>20</sup> Poggi, *op. cit.*, doc. 441.

<sup>21</sup> Alberti was no doubt in part following a literary convention from antiquity, as in Diodorus Siculus' story (I, 28) of two sculptors who made a statue in two sections and in separate locations; with the fundamental distinction, however, that Alberti is speaking in this con-

*intellecto* might well refer to an improvement in his pointing system that Agostino hoped would enable him to accomplish this unprecedented feat.

I submit the possibility that Agostino's notorious failure was due to some miscalculation in his pointing system, as a result of which he was forced to give up and leave the block *male abozatum*. This phrase, *male abozatum*, occurs in the record of 1501 in which the operai of the cathedral ceded the block to Michelangelo, who would in the next two years carve the *David* from it (Figs. 11, 12).<sup>23</sup> If the hypothesis about Agostino's abortive attempt at pointing off his giant is correct, perhaps we can shed some light on another part of the same entry, which is by all odds one of the most curious notices in the whole history of Renaissance sculpture. In the margin next to the main giving the block to Michelangelo the following note was added:

The said Michelangelo began to work on the said giant on the morning of 13 September 1501, although a few days earlier, on 9 September, he had with one or two blows of the chisel (uno vel duo ictibus) removed a certain nodus (quoddam nodum) that it had on its chest.

This *nodus* has been interpreted as a knot of drapery, on the assumption that Agostino's figure was to be clothed.<sup>24</sup> I wonder, however, whether the *nodus* was not in fact a point, a knob of marble deliberately retained by Agostino as a fixed reference for measuring off his colossus from the model.

The *David* is one of the vivid cases of Michelangelo's phobia against people seeing his work while in progress; he actually had a wall built around it to keep away the curious, as we know from both Vasari and the documents.<sup>25</sup> Yet the payments show that Michelangelo had removed the *nodus* before the wall was built, while the block was still visible. He seems to have wanted one and all to know that he intended to execute the statue without Agostino's *nodus*.

text not of a system of proportions, but of his method of measuring from a prototype (as has been emphasized by E. Panofsky, *Meaning in the Visual Arts*, New York 1955, p. 72, n. 26).

<sup>22</sup> Poggi, *op. cit.*, doc. 444.

<sup>23</sup> *Ibid.*, doc. 449.

<sup>24</sup> Cf. C. de ToInay, *Michelangelo*, Princeton 1948 ff, I, p. 154, citing K. Lanckoronska.

<sup>25</sup> Vasari-Milanesi, VII p. 154; K. Frey, 'Studien zu Michelagnolo Buonarroti und zur Kunst seiner Zeit,' *Jb. d. Preuß. Kunstslgn.*, 30, 1909, Beiheft, p. 107, nos 12 (payment for the wall, October 14, 1501 and 13 (for the roof, December 20, 1501).

We can scarcely even speculate as to how Michelangelo himself accomplished the feat. We know from Vasari that he too made a wax model. That he used a system of enlargement is suggested by the very fact that he built a wall around the figure, which would have made it practically impossible to judge proportions from a distance. Another tantalizing notice in both Vasari and Condivi is that he also left portions of the original block, which might have served as stationary references for a measuring system, at the head and at the base of the figure:<sup>26</sup> but that at the head was removed, unfortunately, in the eighteenth century.<sup>27</sup>

In any event, the *David* is the first definite instance we have of Michelangelo's use of the model in preparation for monumental sculpture. Thereafter in his work the model takes on a virtually unheralded significance, but at this point we must consider briefly some aspects of what might be called the 'pre-history' of Michelangelo's achievement.

In the general framework of late quattrocento Italian sculpture it is possible to define a powerful undercurrent of experimentation with new ways of creating plastic effects. Verrocchio seems to have been a key figure in this tendency. Certain passages in his relief of the Resurrection from Careggi in the Bargello, for example, show a strikingly loose and expressive modeling (Fig. 13) and the same may be said of his bust of Giuliano de' Medici in

<sup>26</sup> Vasari-Milanesi, *loc. cit.*; A. Condivi, *Vita di Michelangelo Buonarroti*, ed. Pisa 1823, (Collezione di ottimi scrittori italiani), p. 22.

<sup>27</sup> As reported by D. M. Manni (in a note to the edition of Condivi by A. F. Gori, Florence 1746, p. 83; reprinted on p. 98 in the edition cited above, note 26), who says, 'La scorza nella sommità del capo ora non si vede più, dacchè anni alquanti sono fu di nouvo ripulita.'

A brief search by the writer in the Florentine archives for a record of this operation was unsuccessful. There did appear, however, an undated estimate for a later cleaning by the sculptor Stefano Ricci (1765–1837):

Dovendosi da me sottoscritto Restaurare, ripulire, ed Incausticare la statua del'-  
davidde dell'Immortal' Michelangelo esistente in Piazza del' Gran' Duca, e restau-  
rare i due Leoni che esistono sotto la loggia detta dei lanzi, Avendo Ponderato ed i  
Tasselli che ci mancano e la ripulitura, l'Incausto, Ponti, ed altro, Esaminando la  
Fatica necessaria p rimetter' con criterio dei pezzi ad opera simili, giudico, e credo  
potere ascender' la total' somma a Zechini quarantacinque

Tanto a l'onore di esporre l'Umilissimo Servo

Stefano Ricci Scultore

(Archive of the Soprintendenza della Galleria agli Uffizi, ms. no. 277.)

Washington.<sup>28</sup> The Careggi relief was certainly painted, the Medici bust probably, so that much of the effect would have been lost. But in fact a host of other works of this period, perhaps best exemplified by the series of reliefs attributed to Francesco di Giorgio, show analogously bold vagueness of form.<sup>29</sup> It is scarcely necessary to emphasize that this whole phenomenon was incalculably indebted to Donatello, and here is where its relevance for Michelangelo becomes specific. When, as Vasari says, the youthful Michelangelo in making his *Madonna of the Stairs* set out to 'contrafare la maniera di Donatello,'<sup>30</sup> it is more than likely that at least part of his interest lay precisely in the diffuse and irregular surfaces that play a central role in Donatello's relief technique. Certainly, in view of Michelangelo's subsequent development it is difficult to imagine that the 'pictorial' possibilities of the *rilievo schiacciato* were of great concern to him.

What I wish to suggest is that the basic redefinition of sculptural 'finish' implied in this development was closely related to the emergence of the sculptural study as an independent form. For here, too, the first steps were taken in the late quattrocento, both towards freer handling in the model itself, and towards an appraisal of the model in terms of its own special properties. In both these respects Verrocchio once more seems to have been a leader. His terracotta model in the Victoria and Albert Museum for the Forteguerra monument in Pistoia (c. 1475, Fig. 4),<sup>31</sup> though hardly a sketch, is very different from such highly finished models as those of Benedetto da Majano. And if the London relief was actually a presentation piece, submitted for the patron's approval, it marks the appearance of a new attitude in this domain. That something of the sort was taking place is further evidenced by the fact that a few years later (1482) Verrocchio's model of the *St. Thomas* of Or San Michele was purchased for the Università dei Mercatanti. The model was to be placed on public display, and the decree authorizing the acquisition states the motive in eloquent terms, 'per non

<sup>28</sup> Illustrations of the former in L. Planiscig, *Andrea del Verocchio*, Vienna 1941, Pls. 1–7, of the latter in C. Seymour, Jr., *Masterpieces of Sculpture from the National Gallery of Art*, New York, 1949, Pls. 113–116, Cf. p. 114.

<sup>29</sup> See A. S. Weller, *Francesco di Giorgio*, Chicago 1943, pp. 135 ff.

<sup>30</sup> Vasari-Milanesi, VII, p. 144.

<sup>31</sup> Pope-Hennessy, *op. cit.*, pp. 164 f.

lasciare guastarsi e perire la bozza et principio di si bella cosa;<sup>32</sup> it attaches a definite and positive value to the work of genesis as such.

Whatever their ancestry, however, Michelangelo's small figures in wax and clay have the quality of directness that prompts us to speak for the first time of real sculptural sketches, or 'bozzetti' (Figs. 9, 14).<sup>33</sup> In the terracotta torso in the British Museum, we even find the same very personal graphic surface treatment that appears in the unfinished marbles and in many of the drawings. Throughout the whole prior history of European sculpture there is nothing that conveys in this way the feeling of being confronted with the artist's most inward and private searchings. Moreover, the sources and preserved examples together leave no doubt that he made such studies regularly for all sorts of projects, so it can also be said that with Michelangelo the three-dimensional sketch became an essential part of the sculptor's creative machinery.

At the opposite extreme stands the equally dramatic fact that with Michelangelo we are able, again for the first time since antiquity, to prove the use of large-scale models for monumental stone sculpture. I refer of course to the Medici tombs; large models for the figure sculptures are amply documented in Michelangelo's own Ricordi, and one, the River God in the Accademia is still preserved (Fig. 15).<sup>34</sup>

<sup>32</sup> Cf. C. von Fabriczy, 'Donatello's Hl. Ludwig und sein Tabernakel an Or San Michele,' *Jb. d. Preuß. Kunstsgl.*, 21, 1900, p. 257.

Fundamentally different is the situation described by Pliny, (*NH*, XXXV, 155), in which Arkesilaus' models brought more than the final works of others, and one of his statues was set up before it was finished; these stories merely document the exceptionally high esteem in which the artist's works were held.

It is tempting to speculate that a direct line in the development of the three-dimensional sketch may have led from Verrocchio through Leonardo; a drawing in Windsor with figures for the Anghiari battle (c. 1505) has an inscription recording Leonardo's intention 'to make a small one of wax the length of a finger.' These studies, in turn, are probably reflected in a number of bronze statuettes, and in the small terracotta battle groups attributed to Rustici. (Cf. K. Clark, *Leonardo da Vinci*, Harmondsworth, 1959, p. 132) There is no evidence that the latter were preliminary studies, but it seems quite possible that Leonardo's example was followed in the preparation of larger works in sculpture.

<sup>33</sup> See L. Goldscheider, *A Survey of Michelangelo's Models in Wax and Clay*, London, 1962, with many problematic attributions.

<sup>34</sup> For the Ricordi, cf. G. Milanesi, *Le Lettere di Michelangelo Buonarroti*, Florence 1875, pp. 591 ff. The frequency with which he used large models for sculpture is not so evident as with the bozzetti; Cellini (cited below, note 35) says that Michelangelo had worked both with and without full-scale models, and that after a point he used them regularly. On the

Both these innovations should be kept in mind when one considers still another aspect of Michelangelo's working procedure (Fig. 16). This is his habit, described by Vasari and Cellini and confirmed by the works themselves, of attacking the block from one side only, uncovering the projecting forms first and proceeding only gradually to the deeper excavations.<sup>35</sup> The significance of this technique has not I think been clearly grasped, though Vasari himself supplies the explanation. He says that its purpose was to avoid errors by leaving room at the back of the block for alterations. In other words, should the artist encounter any flaws in the marble as he proceeds, should he make a mistake, should he alter his conception, he will be in a much better position to make any necessary allowances or changes than if the opposite side were already hewn away.

I need hardly point out the similarity of this to the later classical procedure, which Bluemel showed was based on making copies by pointing-off. What this would indicate, however, is that Michelangelo's technique, too, developed in relation to his use of models. Indeed, Vasari gives his description of the procedure in a passage dealing with the use of models. His description is even couched in terms of the famous analogy of a wax model slowly withdrawn from a pail of water. I do not mean to imply that Michelangelo actually pointed-off in a modern way, as has been claimed,<sup>36</sup> or even that he necessarily made models, on whatever scale, in every case. Rather, I suggest in general terms that these two most salient features of his working procedure — his one-sided approach to the block, and the unprecedented role of bozzetti and modelli in his work — should be viewed as interconnected phenomena, the one proceeding directly from the other. Michelangelo's revolutionary technique may thus be understood against the broad background of sculptural procedure since the early fifteenth century. The development that began with Donatello's and Brunelleschi's quasi-scientific experiment reaches here, a hundred years later, a kind of threshold.

other hand, in a letter of 1547 Bandinelli reports Pope Clement as having said that Michelangelo could never be persuaded to make such models (G. Bottari, *Raccolta di lettere sulla pittura . . .*, ed. S. Ticozzi, Milan, 1822 ff, I, p. 71).

But that Michelangelo himself thought of them as a means of facilitating the work is apparent from his letter of April 1523 concerning full-scale models for the Medici tombs (Milanesi, *Lettere*, p. 421; cf. on the dating, K. Frey, *Die Briefe des Michelagnolo Buonarroti*, ed. H.-W. Frey, Berlin 1961, pp. 243 ff).



18. Bernini, Model for the Four Rivers fountain,  
Detail, Private Collection, Rome.



19. Giambologna, *River God*,  
Terracotta,  
Victoria and Albert Museum,  
London.

20. Bernini,  
*Angel with the  
Inscription*,  
Terracotta,  
Side View,  
Hermitage,  
St. Petersburg.





21. Bernini,  
*Angel with the  
Inscription*,  
Terracotta,  
Front View,  
Hermitage,  
St. Petersburg.

20. Bernini,  
*Angel with the  
Inscription*,  
Terracotta,  
Coll. Mr. and Mrs.  
Richards S. Davis.





23. Bernini, *Angel with the Inscription*,  
Ponte S. Angelo, Rome.

In the course of the sixteenth century this threshold was crossed and the creative process became, as it were, so self-conscious and articulate as to be virtually autonomous. The treatises of Cellini and Vasari on sculpture give detailed accounts involving a series of clearly defined steps from small study through the full-scale model, to the final work. An important factor in this context was that Michelangelo could be cited as authority; the Medici chapel is Cellini's chief witness when insisting on the desirability of the full-scale model.<sup>37</sup> Characteristically, they both give as much attention to the preparatory stages, the making of the models, as to the final execution. This attitude has its visual corollary in the fact that the preliminary studies and models now become independent and highly finished works of art in their own right. It is probably no accident that two of Giambologna's full-scale models, the *Florence Triumphant over Pisa* and the *Rape of the Sabines*, were preserved along with the executed works themselves.<sup>38</sup> And of course the small 'studies' for works in a large scale were often cast in bronze as 'Kleinkunst' (Fig. 17).

This by no means signifies that true *bozzetti* were not produced in the sixteenth century; although the highly finished studies form the backbone of Giambologna's preparations for a work of art, under certain 'iconographical' circumstances at least, he produced sketches that go far beyond Michelangelo in freedom of handling (Fig. 19).<sup>39</sup>

I strongly suspect that Bernini's *bozzetto* style was not developed without a direct knowledge of such sketches by Giambologna, possibly in the

<sup>35</sup> Vasari-Milanesi, I, pp. 154 f, cf. VII, pp. 272 f.; Cellini, *Trattato della Scultura* in A. J. Rusconi and A. Valeri, eds. *La Vita di Benvenuto Cellini*, Rome 1901, p. 780; these are the most important among numerous allusions to Michelangelo's procedure.

<sup>36</sup> F. Kieslinger, 'Ein unbekanntes Werk des Michelangelo,' *Jb. d. Preuß. Kunstsln.*, 49, 1928, pp. 50 ff.

<sup>37</sup> *Op. cit.* (above, no. 35), p. 778–780

<sup>38</sup> E. Dhanens, *Jean Boulogne: Giovanni Bologna Fiammingo*, Brussels 1956 (Koninklijke Vlaamse Academie voor Wetenschappen . . . , Kl. der schone Kunsten, Verhandeling nr 11), pp. 147 (n. 2) ff.

<sup>39</sup> It now seems certain that the London model illustrated in our Fig. 19 is a study for a colossal Nile at Pratolino, which was ultimately superseded by the famous figure of the Apennines (cf. Pope-Hennessy, *op.cit.*, p. 473, citing H. Keutner, review of Dhanens, in *Kunstchronik*, 11, 1958, p. 327). And indeed, from the 'fluid' treatment of the river god a subtle but definite change may be observed toward sharper, almost 'craggy' surfaces in the Bargello study for the mountain deity (A. E. Brinckmann, *Barock-Bozzetti*, Frankfurt a. M. 1923–25, I, Pl. 29).

Medici collection in Florence.<sup>40</sup> Moreover, Bernini continues and even surpasses the late sixteenth century in working out his conception fully in advance. This may be judged from the fact that Sandrart reports he saw no less than twenty-two wax bozzetti for the *St. Longinus* alone.<sup>41</sup> Sandrart was himself astonished, and observes that the number of studies was far greater than other sculptors were wont to produce. Eleven bozzetti for the angels of the Ponte S. Angelo are preserved still today, and in them we follow the development of Bernini's ideas with a degree of intimacy that can only be described as startling. Even in the famous case where we know Bernini worked the marble directly, the bust of Louis XIV, he did so only after the most painstaking study, which included besides drawings, many clay models.<sup>42</sup>

No less clear is the evidence for Bernini's commitment to the full-scale model. In every case where the documents for his larger commissions are preserved they show that he used full-scale models; it was through them that he was able to control and give his personal stamp to vast undertakings executed largely with the help of assistants. Symptomatic of this development is that by far the most elaborate and practical description to date of techniques of model-making, measurement and proportional enlargement comes in a treatise on sculpture, still unpublished, written around 1650 by one Orfeo Boselli.<sup>43</sup> Boselli, though a pupil and follower of Duquesnoy, worked under Bernini on the decoration of St. Peter's, and his account may well reflect the practise in Bernini's studio. Symptomatic, too, is the fact that with Bernini and his school we begin to get measured bozzetti; that is, bozzetti on which calibrated scales have been incised, for the purpose of

<sup>40</sup> Bernini's acquaintance with the Medici collections seems evident from a comparison of his *Rape of Proserpine* with the bronze by Pietro da Barga in the Bargello (cf. G. de Nicola, 'A Series of Small Bronzes by Pietro da Barga,' *Burlington Magazine*, 29, 1916, Pl. III, Q), a relationship I hope to enlarge upon in another context.

<sup>41</sup> A. R. Peltzer, *Joachim von Sandrart's Academie . . .*, Munich 1925, p. 286.

<sup>42</sup> Cf. R. Wittkower, *Bernini's Bust of Louis XIV*, Oxford 1951 (Charlton Lectures on Art), p. 8.

<sup>43</sup> *Osservazioni della Scoltura antica*, Rome, Bibl. Corsini, ms. 36, F. 27, Bk. I, chs. xiv ff., II, chs. xviii ff. Concerning one of his methods he says 'salvarai sempre le doi cime del sasso, grosse tre dita, ben riquadrate, tanto nel di sopra, quanto nel fianco, perche perse quelle, sarebbe vano il tutto; ne le levarai mai sin tanto, che non habbi posto a loco certo tutte le parti principali' (fol. 60 verso). On the treatise, cf. M. Piacentini, 'Le "Osservazioni della scoltura antica" di Orfeo Boselli,' *Bollettino del R. Istituto di Archeologia e Storia dell'Arte*, 9, 1939, pp. 5 ff.

mathematically precise enlargement. One of the first examples I know is a magnificent unpublished bozzetto by Bernini for the *Angel with the Inscription* on Ponte S. Angelo, in which measured scales run vertically up both sides of the rear support (Figs. 20, 21).<sup>44</sup>

I do not believe one could duplicate this kind of advanced preparation in the work of any previous sculptor. We are faced with the paradox that behind Bernini's revolutionary effects of freedom and spontaneity there lay an equally unprecedented degree of conscious premeditation. In a sense, of course, it may be said that Bernini simply carries to a new level the tendency to externalize and articulate the creative process that had begun in the early Renaissance. But there are a number of factors that taken together point to a profound difference from earlier procedure and have some bearing upon the paradox of Bernini's calculated spontaneity. As regards full-scale models the examples recorded were made either for the benefit of assistants, or as a means of trying out the projected work *in situ*. There is no evidence that Bernini used full-scale models as part of his own personal working procedure. Interestingly enough, Boselli says specifically that whereas it had previously been the custom to make full-scale models, he considers a small model sufficient, except for larger works requiring try-outs for size.<sup>45</sup>

With regard to smaller models, in Bernini the relationship between developed studies and sketches is reversed as compared with Giambologna. Rapidly executed bozzetti, instead of being relatively rare, form by far the greater portion of the corpus of known Bernini terracottas. Conversely, highly finished studies are exceptional in Bernini's work, and those that exist can usually be linked to special circumstances such as execution by assistants. No certain example of a study by Bernini cast in bronze is known.<sup>46</sup> The loose and very personal sketch, then, was his characteristic instrument of creation.

It is remarkable, finally, that his bozzetti do not necessarily become more highly finished as they approach the final conception. A striking case in

<sup>44</sup> Height: 32.5 cm.; Inv. no. 630.

<sup>45</sup> *Op. cit.*, fol. 56 *recto*.

<sup>46</sup> One possibility is a small bronze version of the *Countess Matilda*, cf. R. Wittkower, *Bernini*, London 1955, p. 196. A small lead statuette, supposedly a trial model for Bernini's Neptune fountain at the Villa Montalto, was owned by Antonio Muñoz (cf. I. Faldi, *Galleria Borghese. Le sculture dal secolo XVI al XIX*, Rome 1954, p. 43, and Muñoz in *L'Urbe*, 1957, no. 6, p. 13).

point is the one just mentioned (Fig. 21). It is extremely close to the third of Bernini's angels, the one now on the bridge (Fig. 23),<sup>47</sup> and as we have seen it is actually measured for enlargement. Nevertheless it is not much more highly finished than studies produced at an earlier stage in the planning (Fig. 22).<sup>48</sup> To be sure, Bernini's chief purpose in making the models was to study the general disposition of pose and drapery, rather than to work out details. But there is also, I think — and this can be shown in many other ways as well — a deliberate effort to retain, or actually to increase the sense of immediacy and freshness. These qualities which had previously been, so to speak, incidental by-products of the creative process, become part of its very purpose, a goal toward which Bernini's elaborate preparations were aimed.

In this way one can also understand the vast gulf separating Bernini's conception of sculpture from that of Michelangelo, despite the many points they have in common. For Michelangelo sculpture was a matter of taking away material to reveal the form in the stone. And he was obsessed with the difficulties of the task — such phrases as *dura* and *alpestra pietra* occur repeatedly in his poems in reference to sculpture.<sup>49</sup> Sculpture was not an easy business for Bernini either; one of Michelangelo's own dicta that he applied to himself was 'nelle mie opere caco sangue.'<sup>50</sup> But for him a major challenge was to preserve in the final execution the momentary quality, though not the roughness, of a sketch. Hence he thought of sculpture as a process of moulding the marble, rather than hewing it away; and he said precisely that one of his greatest achievements was to have succeeded in rendering the marble 'pieghevole come la cera.'<sup>51</sup>

<sup>47</sup> On the attribution of this figure, cf. Wittkower, *Bernini*, p. 233.

<sup>48</sup> Height: 30 cm.; one of a pair of unpublished bozzetti for the angels in the collection of Mr. and Mrs. Richards. Davis, formerly of Wayzata, Minnesota, illustrated and discussed in my dissertation, *The Bozzetti of Gianlorenzo Bernini*, Harvard Univ., 1955, pp. 184 f.

<sup>49</sup> Cf. E. Panofsky, *Studies in Iconology*, New York and Evanston 1962, p. 178 and n. 16.

<sup>50</sup> P. Fréart de Chantelou, *Journal du voyage du Cavalier Bernin en France*, ed. L. Lalanne, Paris 1885, p. 174.

<sup>51</sup> D. Bernini, *Vita del Cavalier Gio. Lorenzo Bernino*, Rome 1713, p. 149; cf. A. Riegl, *Filippo Baldinucci's Vita des Gio. Lorenzo Bernini*, eds. A. Burda and O. Pollak, Vienna 1912, p. 235.