H. W. Janson

FORM FOLLOWS FUNCTION OR DOES IT?

Modernist design theory
and the history of art

Form follows function — or does it?

When I was invited to deliver the first Horst Gerson Memorial Lecture, I felt that this was a privilege I could not possibly refuse. I was at something of a loss, however, to find a subject suitable for the occasion – a subject linked in some way with the scholarly interests of a man I greatly admired. Our paths had crossed on many occasions, but never on the plane of research; his domain was painting, mine sculpture. I decided, therefore, that the best I could do to honor the memory of Horst Gerson would be to choose a topic that lay outside his range of interests as well as mine, something that demanded a great deal of work and thought. 'Form follows function' suggested itself because the phrase had been nagging me, like a mild toothache, ever since my graduate student days in the late 1930s. I even discussed it once with Walter Gropius, who was then teaching at Harvard, with less than satisfactory results. Now, I thought, I must try to get to the bottom of this thing, or as close to it as my cast of mind permits. I must confess that temperamentally I am not strongly inclined toward abstract questions such as this one. Goethe was right, I always thought, in telling us that 'grau ist alle Theorie.' I suppose I would have to call myself an empiricist if I were forced to adopt a philosophical label. To think about 'Form follows function,' then, was a special challenge for me. I am not sure I have met it, and I beg your indulgence if I have not.

What we have to deal with is a simple declarative sentence – about as short a sentence as any Western language permits: just three words, subject, verb, object. It is, of course, familiar to us all as the credo of what has come to be known as the Functionalist School of modern architecture and architectural theory. If we take it as a credo, a dogma, it escapes all rational discussion. Dogmas by their very nature have no need of justification. All we can do is inquire how well those who profess it live up to it in practice. Of the three words that make up the credo, only the first, 'form,' has a clear meaning: it refers to the visual configuration of a specific object, as against 'style,' which refers to a class of objects. The verb, 'follows,' can be interpreted in various ways: it may mean 'is determined by' or 'is derived from,' or it may be read in a temporal sense, as in 'night follows day,' in which case the statement means that form

adjusts to function but not necessarily right away; there may be a considerable time lag between the two. 'Function' is surely the most problematic of our three terms. Is it mechanical, machinelike, or does it include other, less tangible aspects of function?

Let us take a look at what is probably the best-known statement of the functionalist aesthetic, Le Corbusier's 'The house is a machine for living in.' The machines Le Corbusier was thinking of, if we read his definition of a house in the context of the manifesto of 1920 in which it appears, were airplanes and automobiles.[1] These Le Corbusier regarded as paradigms of form determined by function or, as he put it, of 'the logic which governed the statement of the problem and its realization.' In contrast, he says, 'the problem of the house has not yet been stated,' although he adds that 'there do exist standards for the dwelling house.' He does not tell us what these standards are, but evidently he has hopes for a house that is as logical in design as an airplane or an automobile.

Well, let us cast our minds back to the airplanes and automobiles of 1920. In the perspective of 1981, they are archaic objects valued by certain collectors of antiques for their particular period flavor, and we marvel at Le Corbusier's belief that their design was governed by nothing but logic. An automobile of 1920 still has the air of a 'horseless carriage,' and in view of what we have learned about aerodynamics since 1920 it seems surprising that the planes of those days could fly at all. Le Corbusier's confidence in the logic of their design is clearly a matter of faith, of being in love with machinery of a certain kind, which blinded him to all those aspects of the planes and cars of 1920 that were non-functional or even anti-functional: shapes arrived at by aesthetic choice rather than derived from functional considerations. Over a distance of sixty years, we have become sensitized to the 'style' of these vehicles. We realize, moreover, that Le Corbusier was skating on rather thin ice when he spoke of *the* airplane and *the* automobile. There were, in 1920 as today, many different kinds of planes and cars, all looking distinctly different rather than alike even if they performed equally well. In other words, 'flying' or 'driving' are insufficient statements of the problem (in Le Corbusier's language) to permit a logical solution of the design problems involved. We might say, again using Le Corbusier's language, that planes and cars are 'machines for living in' in addition to being flying machines or road transport machines. Or, to use a more up-to-date term, that they are 'environments' which satisfy all sorts of human demands quite apart from locomotion: they may be status symbols or expressions of a particular lifestyle. (Some people wouldn't be found dead in a Rolls Royce but love their Volkswagen.)

4

I wonder, in fact, whether it is possible to find *any* kind of man-made object – tool, machine or work of art – that has a purely functional shape. George Kubler, the eminent art historian at Yale University, in an essay to which we shall return later on, thought to have found such an object: a hammer.[2] It signals, he says, that its handle is for grasping and that the peen, or head, is an extension of the user's fist ready to drive a nail. Well and good, if you happen to live in a culture familiar with nails. What would a man of the Stone Age make of a hammer? He, too, would probably grasp the handle, and decide that what he was holding was a not very efficient weapon of some sort. Nor can we be sure that nails will always be with us. In an age of plastics, they might well be replaced by other forms of bonding, and the hammer would then join the museum of archaic tools – such museums already exist – where its purpose would have to be explained to the visitor by elaborate labels and diagrams. Admittedly, the variety of designs in the field of hammers is not very large, but I suspect that it is larger than the variety of functions a hammer can perform. In other words, chances are that even a hammer has some non-functional design elements if we look for them hard enough, and to speak of *the* hammer may be no more justified than to speak of *the* plane or *the* car.

But let us return to Le Corbusier and the other modern exponents of functionalism (statements equivalent to his can be found among the dicta of Mies van der Rohe, Gropius, Loos, Taut and many others). What is the historic background of functionalist theory? Its roots have been traced back as far as Vitruvius, who demanded of any good piece of architecture that it have 'durability, convenience and beauty.' That he, and his countless medieval and Renaissance successors, should have included 'convenience,' that is, respect for function, among the criteria of what is desirable in a building, does not come as a surprise; architecture, after all, is an applied art. A completely functionless building is just as hard to imagine as a completely functional object. Even 'paper architecture,' i.e. designs not meant to be actually built, however fantastic they may be, conforms to established building types and thus reflects a purpose of some kind. Appropriateness as a desirable feature is acknowledged in Aristotle's *Poetics* and throughout the classical tradition of rhetoric.[3] But this is not really what we are looking for. We should like to know when function, preferably machinelike function, becomes the principal consideration, at the expense of durability and beauty, or perhaps as the source of beauty, in architectural theory. This happened, not surprisingly perhaps, in the mid-eighteenth century. The earliest of these radical theorists was that remarkable Franciscan friar, the Venetian Carlo Lodoli, whose ideas are known only at

second hand through the writings of Algarotti and Memmo.[4] Lodoli condemned Baroque architecture as immoral and demanded 'an entirely new architecture' independent of the past, where 'nothing shall show in a structure which does not have a definite function, or which does not derive from the strictest necessity. No useless ornament is to be admitted, and the new architecture must conform to the very nature of the material.' This begins to sound very much like Le Corbusier, although we are not yet in the machine age, so that Lodoli could not be expected to liken his new architecture to machines.

What brought on these revolutionary ideas? It must have been the waning authority of the Renaissance tradition, which had guided architectural theory and practice ever since Brunelleschi. Why this tradition collapsed when it did is a question we must leave aside, although various plausible answers are available. Nor need we trace the path by which Lodoli's ideas were transmitted to the nineteenth and twentieth centuries; the task has been well accomplished by the historians of functionalist theory.[5] Instead, let me cite the earliest spokesman for the Lodoli approach in the United States, whose name and ideas may be less familiar in Europe than they should be. He was America's first Neoclassic sculptor, Horatio Greenough (1805–1852), a man of exceptionally wide intellectual range who spent most of his adult life in Europe without ever losing his American identity. His ideas on functionalism were formed during the late 1820s and the 1830s, although not published until the year of his death.[6] Like Lodoli, Greenough looked for a new source of authority to take the place of tradition, and not only in architecture. He believed to have found it in two fields: nature and technology, both of which struck him as paradigms of the completely functional. As an avid student of anatomy, he was fully conversant with recent developments in comparative zoology, which ever since Tyson and Cuvier had stressed the adaptation to function in animal structure. Evolution as the unifying principle of all forms of life had been acknowledged a century before Darwin, even if the mechanism proposed by Lamarck, the inheritance of acquired characteristics, proved untenable. Thus the conclusion that form follows function in nature seemed plausible enough. Greenough extolled the perfection of the lion, given the lion's function as a beast of prey, and maintained that nowhere in nature do we find 'embellishment,' a term that to him meant 'any non-functional element, whether of shape or color.' Man, as the creature endowed with the highest functions, is therefore also the most beautiful, but only when he is nude, displaying 'the majesty of the essential instead of the trappings of pretension.' Among the recurrent themes of

6

Greenough's writings is the dispute over the nature of beauty, which had been raging in England since the late eighteenth century. Burke's claim that beauty is a positive entity with specific attributes struck Greenough as absurd. All beauty, to him, was derived from function. He formulated his own creed in the following three axioms: beauty is the *promise* of function; action is the *presence* of function; character is the *record* of function. Among man-made things, Greenough again equated function with beauty. Living as he did in the early machine age, he extolled the steam engine, the ship, even the American trotting wagon, and protested that 'the style pointed out by our mechanics is sometimes miscalled...a cheap style.' No, he exclaimed, 'it is the dearest of all styles, because it costs the thoughts of men, untiring investigation, ceaseless experiment.' In architecture, Greenough distinguishes two classes of buildings: the organic, formed to meet the needs of their occupants, which might also be called machines, and the monumental, addressed to the sympathies, the faith or the taste of a people. For the latter class, he is willing to acknowledge the Greeks as a source of instruction but, he warns, 'let us learn principles, not copy shapes; let us imitate them like men, and not ape them like monkeys.' These ideas, inspired at least in part by those of Lodoli and his interpreters, continue to echo through the second half of the nineteenth century in America and helped to form the theory and practice of Louis Sullivan and Frank Lloyd Wright.[7]

Functionalism was one possible response to the collapse of the Renaissance tradition. The alternative, represented by Winckelmann, was to discover a new source of authority in the past. Winckelmann, however, not only championed the *edle Einfalt und stille Grösse* of the Greeks; he was also the founding father of the history of art. And this, surely, was no mere coincidence. Vasari, whose *Lives* had been the model for writers on art until the mid-eighteenth century, can at best be called the grandfather of our discipline, because the historic pattern into which he fitted his biographies was too rigid and simple-minded to yield the basis for a more differentiated approach to historic continuity. It was, to be sure, superior to that of Pliny the Elder, who had treated the history of art as an aspect of the history of technology, a succession of discoveries along the road toward ever greater fidelity to nature. For Vasari, the art-historical past looked like a secular counterpart of Biblical history: Paradise (the classical world) followed by the Fall (the collapse of ancient civilization), the Era before the Law (the 'barbaric' Middle Ages), the Era under the Law (the Trecento and Quattrocento in Italy) and the Era of Grace (with Michelangelo in the role of the Saviour). Winckelmann, in

contrast, treated Greek art as if it were an organism: its birth, growth, flowering and decay. And he saw Greek art as an expression of the genius of the Greek people, whose superiority over the present even extended, he thought, to the superior beauty of their bodies. He also offered a rationale for the decay of the Greek genius: the progressive loss of political independence, when Hellenic became Hellenistic.

We must acknowledge Winckelmann as the inventor of 'period style' and of what I should like to call 'the lockstep of the arts,' i.e. the assumption that architecture, sculpture, painting and the applied arts show the same characteristics at a given time, since they all reflect a common source, the national genius of the Greeks in its various stages. The same pattern could of course be applied, and indeed was applied, to other periods. If Greek art expressed the genius of Classic Man, medieval art could be viewed as expressing that of Gothic Man, Renaissance art that of Renaissance man, and so forth. The metaphor of organic growth and decay – archaic, classic and decadent – could be fitted with equal ease to these later periods: Romanesque, Gothic, Late Gothic or Early Renaissance, High Renaissance and Baroque. The normative bias behind these names for period styles has been well pointed out by Ernst Gombrich.[8]

Two further events of the mid-eighteenth century, with a direct bearing on Winckelmann's role as the father of the history of art, need to be kept in mind. The systematic classification of the arts by philosophers who founded aesthetics as one of their disciplines, displacing Renaissance and Baroque art theory, was one of these events; it produced the concept of 'the fine arts' (or rather, as in all the other Western languages, 'the beautiful arts') and the definition of the artist as a practitioner of the fine arts.[9] The other event was the transfer of the word 'style' from literature and music, where it had long been at home, to the visual arts. Before about 1750, the only term available had been 'manner,' *maniera*. It survived but soon acquired a negative flavor, so that Goethe could fault Henry Fuseli for imitating only the manner but not the style of Michelangelo.[10] As George Kubler has shown, style as applied to the visual arts has a double root: from the Latin *stilus*, a writing tool, and the Greek *stylos*, a column.[11] This helps us to understand why the earliest use of 'style' in the visual arts seems to occur in architecture; a building 'in Gothic style' as we find it mentioned in eighteenth-century writings does not refer to a historic period but to an architectural order analogous to the classical orders although very different from them. Oddly – or perhaps not so oddly – Gothic was being rehabilitated at the very time when the term Baroque came into use as an expression of contempt for Bernini,

Borromini and their followers.

With these developments, the basic armamentarium of the history of art as a scholarly discipline had been provided. It is, once more, hardly a coincidence that the first university chairs in the new discipline were established in Winckelmann's homeland in the early nineteenth century. What has all this to do with 'form follows function,' you will ask at this point. Well, quite apart from the fact that art history and functionalist design theory were born at the same time, each in response to the collapse of the Renaissance tradition, they can be viewed as the opposite faces of the same coin. Functionalist theory, future-oriented and rejecting all past art as a source of authority, seeks to derive form from function even if, in actual practice, some sort of compromise must be worked out because function by itself turns out to be an insufficient guide. Art history, at least as practiced from 1750 to 1900, is concerned with the past and, with a very few exceptions, negativistic toward contemporary art, which it leaves to the art critic. Perhaps under the influence of philosophical aesthetics, art history assumes that the goal of any work of art properly so called must be to arouse the beholder's disinterested delight (there are many variations on this formula, all amounting to the same thing); hence a work of art cannot have any function other than aesthetic. To the extent that it has non-aesthetic functions, it is not a work of art but belongs to the lower realm of 'applied art' or may be nothing but a tool. Once we accept this axiom, it is evident that form must come from form, or rather, since the art historian does not deal with individual works in isolation but with groupings of kindred works, style comes from style. The biological analogy implicit in Winckelmann's view of Greek art still rules Wölfflin's *Kunstgeschichtliche Grundbegriffe,* published in 1915 but based on ideas going back some twenty years, as the author himself admits. The book remained basic reading for art history students on both sides of the Atlantic for several decades.

Every work of art, Wölfflin tells us, is like an organism: 'Sein wesentlichstes Merkmal ist der Charakter der Notwendigkeit, dass... alles so sein muss, wie es ist.' The same necessity prevails throughout the history of art, which he defines as an 'innerlich weiterarbeitende Formengeschichte.' Ideally, it should be an art history without names, since even the greatest artists are subject to the inherent laws of 'Formengeschichte.' Needless to say, these laws are the same for *all* the visual arts – the lockstep of the arts once more. Wölfflin sees the evolution of styles as cycles governed by the polarity of classic and baroque. His book demonstrates only one such cycle, between 1400 and 1800, but he postulates the universal validity of the cycle with the claim that it can be shown

to have occurred in ancient and Gothic art as well. Surprisingly, he does not look upon the Neoclassic style as the beginning of another cycle but calls it 'a unique case' and attributes its cause to external circumstances. Nineteenth-century art to Wölfflin is a tissue of contradictions. He hopes – without much conviction, I daresay – that the 'wissenschaftliche Kunstgeschichte' will help 'das verwirrende Durcheinander zu überwinden.' Needless to say, Wölfflin no longer sees Baroque as decadence. He himself had contributed earlier in his career to the rehabilitation of Baroque art,[12] just as Riegl, in Vienna, had rehabilitated the 'spätrömische Kunstindustrie.' Riegl, too, operated with binomial terms – optic vs. haptic – but unlike Wölfflin he did not construct recurrent cycles. Instead, he launched the term 'Kunstwollen,' as the cause of any given style at any given time. What exactly 'Kunstwollen' means, neither Riegl himself nor his most sympathetic interpreters have been able to explain.[13] Its only certain meaning is that it governs all the visual arts at a given time and place.

Why this insistence on art history as 'innerlich weiterarbeitende Formenge-schichte'? For Wölfflin – and, I suspect, for his Viennese forerunners as well – the goal was to elevate art history to a science by creating a method unique to *Kunstwissenschaft*, as against aesthetics, cultural history, connoisseurship and *Künstlergeschichte*. Only Jakob Burckhardt, a great cultural historian as well as an art historian, opposed the trend toward an ever more formalistic history of art (its last monument, I suppose, is Focillon's book, *La vie des formes,* of 1934, the source of Malraux's *Voices of silence*). In his old age, Burckhardt asked for a 'Kunstgeschichte nach Aufgaben' as his legacy for future generations. His call has not yet been heeded.[14] Since 1950, the conventional art-historical use of 'style' has been subjected to a growing tide of criticism, but even the most thoughtful of these critics, George Kubler, never mentions Burckhardt's challenge. We must take a quick look at Kubler's arguments as set forth in *The shape of time,*[15] and most recently in the essay, 'Towards a reductive theory of visual style,'[16] before we can try to imagine what a 'Kunstgeschichte nach Auf-gaben' would be like. Kubler's main objection to what he calls 'binomial historic styles' such as Gothic style or Rembrandt's style is that they assume a 'constant form' in the art of societies or individuals, which is an illusion. What is constant in the history of art is not form but change itself, even in the production of an individual artist. The continuity of history, Kubler insists, cuts anywhere with equal ease, so that any kind of periodization is arbitrary. It provides no more than 'an illusion of classed order,' whether we speak of Middle Minoan or Early Rembrandt. Kubler is searching for a more verifiable

method of classification. He rejects – quite rightly, I think – the biological metaphors customary since Winckelmann and proposes instead to learn from the methods of anthropologists and historians of science.

What Kubler is trying to discover is what causes forms to change, and he finds the existing answers as provided by Riegl, Wölfflin or Focillon un-satisfactory. In *The shape of time* he provides some intriguing partial answers, and his 'reductive theory of visual style' arrives at the conclusion that style as a diagnostic tool is useful only synchronically, rather than diachronically. In plainer language, this means that style helps us to recognize artistic events that took place at the same time, but not events that took place in a time sequence. I wonder, though, whether Kubler is not in danger of replacing what he terms the tyranny of diachronic styles with another tyranny. Does the fact that a number of artistic events took place at the same time – not, of course, at the same instant but within a time span that is short in relation to the order of magnitude we are considering: let us say a year within an artist's lifetime, five years within a century, fifty years within a thousand – does that fact really force these events to exhibit enough common features to constitute a style? It may do so if we consider the artefacts of a culture remote in time and place about which we know little more than these artefacts, but I fail to see it in more familiar territory such as the seventeenth century. Suppose we examine the work of three painters born at roughly the same time, i.e. within a year or two of each other: Nicolas Poussin, Georges de La Tour and Pietro da Cortona; does their work in, say, 1635 exhibit common features characteristic of the mid-1630s? And how are we to account for artists who worked in more than one style at the same time? There are enough instances of these, since the ancient Greeks, to complicate the synchronic theory of style beyond repair, I suspect. Curiously enough, Kubler remains a student of Focillon (who was in fact his teacher at one time) in that he assigns to the study of subject-matter or content, common-ly known as iconography (or, if we follow Panofsky, iconology), a place outside the history of art properly speaking. He declares it to be part of cultural history. He does not call it irrelevant, as the formalist art-historical tradition did, but seems to think of it as a source of supplementary data, somewhat like stratigraphic evidence in archaeology or the analysis of artist's materials and techniques by scientifically trained conservators. There is also a residue of *La vie des formes* in Kubler's approving reference to the anthropologist A. L. Kroeber, who arranged undated items of a certain type of pre-Columbian pottery in correct chronological order on the assumption that simple formulations are diachronically replaced by complex ones. The postulate may well be correct for

this and similar bodies of material, but is it a universal law? Is early Cubism, as represented by Picasso's *Demoiselles d'Avignon*, less complex than mature or late Cubism? There is a similar disjunction between Kubler's claim that the flow of history cuts anywhere with equal ease and his approving reference to 'the clustered bursts of achievement marking the history of all civilizations' as postulated in another work of A. L. Kroeber. Kubler, moreover, tacitly admits visual style as 'constant form' at least in some limited sense when he himself uses such terms as Gothic vaulting and Plateresque. To sum up, Kubler is at his best when he points out the deficiencies of the formalist tradition of art history. What he proposes as a replacement consists of a number of provocative ideas but has not yet jelled into a coherent system.

I would propose that the difficulties Kubler and other thoughtful critics of the traditional methodology of art history have encountered can be resolved if we take up Burckhardt's challenge and view the history of art in terms of *Aufgaben*, or 'tasks,' a term I should like to translate more broadly as functions. Let us then postulate as an axiom that in the history of art form follows function. I suggested earlier that the function of apparently simple machines such as airplanes and automobiles turns out on closer inspection to be rather complex, since it includes the satisfying of human needs of a non-technical kind. The function of a work of art such as a picture or a statue is a great deal more complex still, and we need a very great deal of information in order to define it – information that is often not fully available and thus will have to be guessed at. But reasonable conjecture has always been a legitimate part of scholarship. And it is my belief that the questions we ask when we think of the function of a given work of art will not only help us to integrate form and content but to reintegrate the history of art with social and cultural history in a way that accounts for changes of form more satisfactorily than any of the traditional methods of analysis. Let me now give a few concrete examples, so you may judge whether my proposed axiom is tenable or not.

Figures 1 and 2 show two works of Donatello, strikingly different in appearance (or style, if you will) yet comparable in that both of them are lifesize; his bronze *David* and the wooden *Mary Magdalen*. Neither is documented, but nobody has doubted that they are in fact by Donatello, although the sixteenth-century sources on which the attribution of the two statues rests are not always beyond doubt.[17] Nor do we have a date for either work. There has been a consensus, however, which I myself shared when I published my book on Donatello in 1957, that there must be a considerable gap in time between the bronze *David* and the *Magdalen*. Donatello spent most of his life in Florence,

12

with only one major break: his ten-year absence in Padua, from 1443 to 1453, during which he produced the bronze equestrian monument to Gattamelata and the high altar for the church of St. Anthony. The great majority of scholars, myself included, place the bronze *David* before the Paduan phase of Donatello, although the dates proposed vary from about 1430 to 1440, while the *Magdalen* has been unanimously dated after his return, around 1455. Recently, however, a very surprising discovery was made. During the great flood that devastated Florence in 1964, the Baptistery, where the *Magdalen* then stood (there is no reason to assume that this was its original location), was flooded with water that carried a layer of heating oil and reached up to the knees of the *Magdalen*, leaving the oil behind as it receded. The statue had to be cleansed of the oil, but the conservators went farther: they removed the coat of brown paint that covered the figure and restored its original coloring, which included gilt highlights on every strand of the long hair. Today, she has a room to herself in the Museo dell'Opera del Duomo, where she can be viewed from all sides in good light. Now, the main reason why the *Magdalen* was always given a post-Paduan date is that a very similar wooden figure, a *St. John the Baptist,* also Donatello's by common consent, exists in the Frari church in Venice (fig. 3).[18] That statue was assumed to have been done between 1450 and 1453, when Donatello had finished both the *Gattamelata* and the high altar but was staying on in Padua instead of coming home, so that he could well have undertaken a comparatively modest commission such as the *St. John*, which he made for the chapel of a Florentine confraternity in Venice. Unlike the *Magdalen*, the *St. John* had never been disfigured by a uniform coat of paint, but there was some doubt whether its coloring was still the original one. When the *Magdalen* had been cleaned with such spectacular results, the Venetians decided to clean their *St. John* as well. This did not change the appearance of the statue significantly except for the base, which now revealed the name of Donatello and the date – 1438 (fig. 4). The signature was probably not applied by Donatello himself, since it reads OPUS DONATI DE FLORENTIA while all his other signatures read either OPUS DONATELLI or OPUS DONATELLI FLORENTINI; but it certainly is original, i.e. of the time when the statue was erected in the Frari, and the date therefore is equally trustworthy, whether it refers to the date the statue was made or to the date of its installation.

Well, if the Frari *St. John* was pre-Paduan, the *Magdalen* also had to be before 1443 – let us say around 1440. But this placed her uncomfortably close to the very different bronze *David*. Was it conceivable that Donatello could produce two works so unlike each other within, at a maximum, a span of ten years, and

1   Donatello. *David*, bronze. Bargello, Florence

2   Donatello. *Mary Magdalen*, wood. Museo dell'Opera del Duomo, Florence

3 Donatello. *St. John the Baptist,* wood. S. Maria dei Frari, Venice

4 Donatello. *St. John the Baptist,* detail of base

perhaps less than ten years? The *Magdalen* and the Frari *St. John* suddenly no longer fitted into the curve of Donatello's artistic development visualized by most art historians, including myself (as of 1957). Nobody, I submit, can doubt that the *Magdalen* and the Frari *St. John* are next-of-kin; yet they form an isolated pair in the master's oeuvre. Did he perhaps have a distinct 'wood-carving style' unrelated to his work in marble and bronze? We have only one other work in wood by his hand, a very early *Crucifix*, in S. Croce, which relates well to his works in marble between 1408 and 1415 and thus gives no hint of a special wood-carving style.[19] Could it be that the difference between the *Magdalen* and the bronze *David* is accounted for by their different functions? Factually, we know nothing of their function, which is to say we do not know who commissioned the two works and for what locations or purposes. But we can to some extent reconstruct these circumstances by relating the two works, not only to other works by Donatello but to other works of their type or class. In the case of the *Magdalen*, this is an old and well-established class, going back, in painted examples, to the thirteenth century.[20] Mary Magdalen apparently was the object of special veneration in Tuscany (we could probably find out why if the question seems important enough to pursue) and this veneration produced a number of statues of the saint, all of them in wood, all of them rather provincial-looking and sharing the same pose and the narrow, elongated shape.[21] Donatello's scope was thus narrowly circumscribed by these precedents, and it is a marvel that he was able to create a great work of art under these conditions. Once we know more than we do now about the cult of Mary Magdalen in Tuscany, we might be able to guess for which local fraternity (or perhaps sorority) Donatello carved his *Magdalen*. It is possible that she was done slightly earlier than the Frari *St. John,* since she is the stronger work of the two. In 1438 Donatello surely was in Florence; he must have carved the *St. John* there, for export to Venice, and maybe because of this he did not exert himself quite so hard as in the case of the *Magdalen*. If I am right in this conjecture, the *Magdalen* would be even closer to the probable date of the bronze *David*.

What do we know about the *David*? The earliest reference to him dates from 1465 in an account of the wedding of Lorenzo the Magnificent, which tells us that the statue stood in the courtyard of the Medici Palace. It has been commonly assumed that the *David* was made for the Medici, but this seems unlikely for several reasons. Before they built their palace, the Medici lived in a series of older houses that provided no room for a statue of this kind, and the palace wasn't begun until after Donatello had left for Padua, so that the date of the figure would have to be after 1453, the year of Donatello's return. Yet the

nearest relatives of the *David* are the three angels Donatello made for the font in the Baptistery of Siena, securely dated 1429.[22] Figure 5 shows the one that was stolen a long time ago and has been in the Berlin Museum for many years. It is on a smaller scale than the *David*, and we are comparing a child with an adolescent, but both are of bronze and free-standing figures made to be viewed from any side. Even the complicated way they stand – the angel on a shell, the *David* on the head of Goliath – is quite similar, as is the surface treatment of the body. The Siena angels derive from Etruscan bronze statuettes, which seem to have been readily available in Tuscany,[23] and belong to a classicizing phase of Donatello that also produced the two *Virtues* at the Siena Font, the *Annunciation* in S. Croce, and the Brancacci tomb in Naples. All this argues strongly for a date before Padua, between the late 1420s and 1443, and preferably a relatively early date within this span of about fifteen years. Unlike the *Magdalen*, the bronze *David* is not an image of well-established and clearly defined type. There are of course representations of the combat of David and Goliath from Early Christian times on, but as an isolated figure David was traditionally represented not as a youth but as king and psalmist. There is in fact a marble statue in the Florentine Duomo by Ciuffagni, of about the same date as our *David*, that shows him in the traditional way (fig. 6). The earliest known image of David as the victor over Goliath outside a narrative context is a fresco in S. Croce by Taddeo Gaddi, a follower of Giotto, dating from about 1330. The earliest sculptural image of this type is Donatello's own marble *David* (fig. 7), of 1408–1409.[24] It was made to crown one of the buttresses of the Cathedral but proved too small to be effective at such a height and was put in storage for future use in some other position, perhaps on the façade. In 1416, the city government of Florence urgently requested the transfer of the statue to the city hall, the Palazzo Vecchio, where it was installed in one of the great public rooms. Originally, the figure had been intended to form part of a cycle of Old Testament prophets; now it became a civic-patriotic symbol. David stands for Florence, small but invincible because favored by God. The statue still shows strong traces of the Gothic tradition but is nevertheless a bold new venture. Let us note that here the head of Goliath clearly shows the stone implanted in its brow. This, then, is the only direct precedent for the bronze *David*. Was the latter, too, meant to be a civic-patriotic symbol? Not necessarily, but there are strong indications that such was indeed the case. The most striking feature of the statue is its conspicuous nudity (except for the hat and the boots), indeed its classic nudity, we might say, since the youthful body has a strong sensuous appeal. The meaning of the nudity, however, is not self-

5   Donatello. *Angel,* bronze. Staatliche
Museen, Berlin-Dahlem

6   Bernardo Ciuffagni. *King David,* marble.
Cathedral, Florence
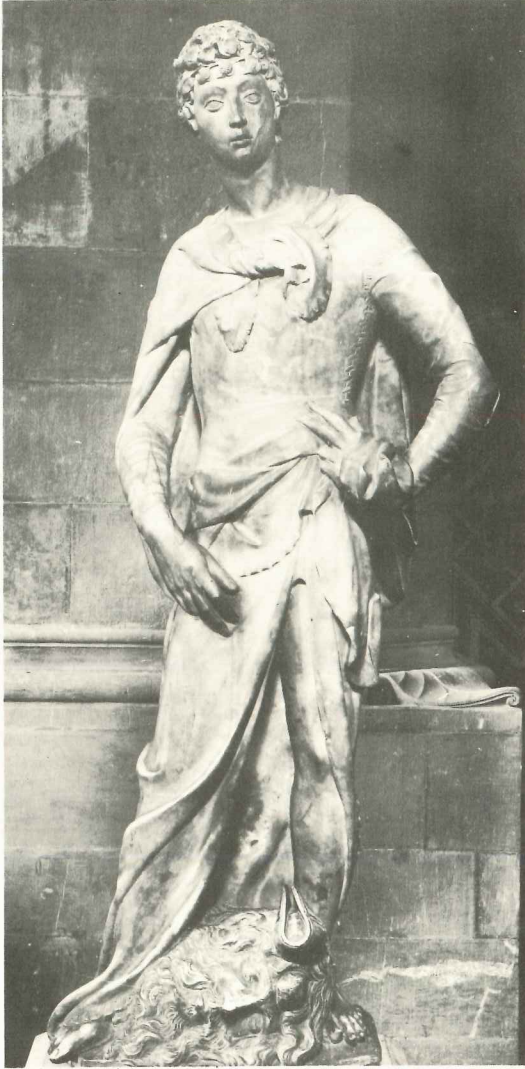
7   Donatello. *David*, marble. Bargello,
Florence

evident. Its explanation must wait until we have found other, more specific indications of the function of the statue. And these in fact exist, although nobody has offered a plausible explanation for them except myself (if I may be permitted this overly self-confident claim).[25] Well, what are they? The head of Goliath, you may have noted, here wears a helmet, which remains in place despite the decapitation of its owner, and a modern helmet rather than a classical one, since it has a visor to protect the face. Where could David's stone have done its damage, we wonder. Donatello evades our question, since this *David* has removed the stone and is holding it in his left hand, a unique iconographic detail never repeated by all the later Davids derived from the bronze *David*. Nor do any of these later Davids retain the helmet of Goliath, since it is clearly implausible.

Donatello, then, must have had compelling reasons to equip the head of Goliath in this instance with such a helmet, which is further distinguished by the enormous wings attached on either side. David's right foot rests on one of these wings; the other curves upward along the inside of David's right leg, pointing, as it were, to his genitalia. Psychoanalytically oriented scholars have explained this feature, along with David's sensuous nudity, as the consequence of the artist's homosexuality. They may well be right, but neither the naughty wing nor the nudity explain the genesis of the statue. Had Donatello been heterosexual, the nudity might have been less sensuous, and the wing might have been placed differently. What we want to know, however, is the *raison d'être* of the helmet, and specifically this helmet with its distinctive features. Well, the winged helmet has a history, which links it clearly with the Holy Roman Empire – the wings are eagle's wings. In Italy, this meant that it was a Ghibelline helmet. Why such a helmet in Guelf Florence, unless it had a specific meaning for the statue? If we look for winged helmets on Italian soil, we find them most conspicuously on the heads of the della Scala family, the lords of Verona, which they held as an imperial fief. Such a helmet appears on the statue of Can Grande della Scala (fig. 8) on the latter's tomb outside S. Maria Antica in Verona, as well as on the biographic reliefs on the sarcophagus. His descendants, all buried next to the same church, also display this helmet. Between the wings appears their crest, the head of a dog, a pun on Can Grande, which did not mean 'great dog' but 'great Khan,' an Asian title purloined from the travel accounts of Marco Polo and others. When his tomb was opened in modern times, the body of Can Grande turned out to have been wrapped in Chinese silk, reinforcing the fanciful Eastern title. Meanwhile, Milan had grown powerful under the Visconti; Giangaleazzo Visconti conquered Verona

shortly before 1400 and adopted the winged helmet (but of course not the crest, since he had his own, the *biscia,* a snake or dragon with a human figure in its mouth which to this day appears on the coat of arms of Milan). Giangaleazzo had a right to the winged helmet, since he had received the title of duke from the emperor. Between 1400 and 1402, after conquering or neutralizing most of northern and central Italy, he threatened Florence and might well have conquered it if he had not died suddenly in 1402. His elder son was a weak ruler, and for twenty-five years there was peace between Milan and Florence. But when his younger son, Filippo Maria, took over, he revived both the heraldry and the political ambitions of his father. This is evident from the *Visconti Book of Hours,* which was begun in the 1390s under Giangaleazzo and finished thirty years later for Filippo Maria. Both sections of the book constantly display the winged helmet with the *biscia* (fig. 9). The helmet of Goliath in Donatello's statue originally also had a crest, now lost, which had been cast separately and inserted in the neat square hole between the wings. We can only guess what this crest was, but the wings strongly suggest that it was the *biscia.* The Milanese threat against Florence lasted from 1427 until the early 1440s, exactly the time span in which we have placed the bronze *David* on grounds of style.

Now everything begins to fall into place. The peculiar features of the statue are not, as some scholars have claimed, arcane humanistic conceits. The bronze *David* must have been intended as a civic-patriotic monument, a more explicit successor to Donatello's own marble *David.* As a free-standing bronze statue, it surely was planned for display out-of-doors, to rally the citizens of Florence against the Milanese. The only detail one might argue about is the exact occasion that led the city government to commission the statue. Its nudity also fits its civic-patriotic purpose; the reference to antique statues is meant to stress the ancient origins of Florence – the Baptistery was then believed to be a temple of Mars converted to its present Christian function, and humanists such as Leonardo Bruni were wont to praise Florence as the modern Athens. Only under these circumstances, I suspect, was it possible for Donatello to make something so nearly like a heathen idol. And that may have been the reason why the monument was never put on public display: the more conservative members of the city government could well have been shocked at its idollike quality. Or perhaps Donatello was late in delivering it, so that at the time he did the pressure of the Milanese threat was less keenly felt. In any event, the city government must have been willing to dispose of the statue, and the Medici acquired it for their splendid new palace, probably in the 1450s. It was, in fact,

8   Equestrian tomb statue of Can Grande
della Scala. S. Maria Antica, Verona

9 Belbello da Pavia. *The Visconti Book of Hours*, f.158v (detail). National Library, Florence

the Medici who had helped to remove the Milanese threat by supporting the Sforza after Filippo Maria's death, so that suddenly the old enemy had turned into a friend. That may have been the reason for the removal of the crest from Goliath's helmet, if I am right in thinking that it was the *biscia*.

Once we accept the axiom that in the history of art the *Aufgabe,* the function, determines form, we must consider just how promptly form follows function. Often, I suspect, it follows at some distance, a phenomenon that might be described as pouring new wine into old bottles until new and more suitable ones are created. This can be shown very strikingly in Early Christian art. Let me instead adduce a later example, just to prove that new wine in old bottles can be found at other times as well. About 1735 the French sculptor François Roubiliac, recently arrived in England, was commissioned by the owner of Vauxhall Gardens to carve a marble statue of the great composer, George Frederick Handel (fig. 10). Monuments to culture heroes such as scholars or artists were very rare before the eighteenth century. De Keyser's Erasmus statue in Rotterdam, of the early seventeenth century, is the exception that proves the rule. To honor a culture hero with a monument during his own lifetime was completely unheard of, so that Roubiliac's *Handel* is a true primordium of its kind. It was Roubiliac who brought the vocabulary of Baroque sculpture to England, and the style of his *Handel* is clearly Baroque. Handel is shown in the guise of Apollo, the god of music, playing the classical lyre, with genii at his feet recording the music. But this is an Apollo *en negligé,* in dressing gown and slippers, and without a wig. It is also a clearly recognizable portrait of the composer. All this reflects the curious double purpose of the statue, which was to glorify Handel but also to advertise Vauxhall Gardens, where his music was often performed. Here, then, we have Apollo with the features of Handel and in the costume customary for French Baroque portraits of artists, known as *portraits en negligé.* Moreover, this Apollo is suffering from gout, because Handel did: the right foot is not inside its slipper but on top of it – Handel is allowed to be comfortable while composing. This little detail is a fine instance of 'wit,' that quality of mind so highly valued in eighteenth-century England. Still, as a whole this is an instance of new wine – very new wine – in an old Baroque bottle, and the combination is striking indeed as compared to the French monuments to culture heroes such as Voltaire later in the century, which try very hard and not always succesfully to be un-Baroque. To the British, who in the first half of the eighteenth century were sculpturally far behind the rest of Europe, Roubiliac was a revelation. They took to his work with such enthusiasm that he had a far more successful career in England than

10   Louis-François Roubiliac. *George Frederick
Handel*, marble. Victoria and Albert Museum,
London (Crown copyright)

he could have expected on the other side of the Channel. He had been preceded by other sculptors from the continent such as Delvaux, Rysbrack and Scheemakers, but Roubiliac was by far the most talented, and hence the most influential, of the group. There thus arose a curious situation that makes us wonder whether Kubler is right in claiming that style is a useful synchronic tool. For just when the consciously anti-Baroque Neo-Palladian movement sponsored by Lord Burlington was at its height, sculpture in Britain was at its most Baroque. The style was imported rather than homegrown, but the patrons were British. Nor can we blame them for taking Roubiliac to their bosom, as a simple comparison will make evident. Roubiliac's grave monument to Mary Middleton, of 1750 (fig. 11), shows the 'inmate' of the tomb vigorously rising from her sarcophagus on Judgment Day as an angel sounds the trumpet and a pyramid, the symbol of permanence, crumbles in the background. It is as dramatic a monument as we could wish, in striking contrast with the monument to Sara Colville (fig. 12) by an anonymous British sculptor of the seventeenth century, one of several such monuments that constitute the British antecedents of Roubiliac's. Here the deceased rises frontally, or rather she does not rise at all but simply stands or kneels in her sarcophagus, which is framed by a rather awkward Renaissance arch. This artistically very modest native tradition helps to explain why Mary Middleton, or her heirs, wanted a 'resurrection tomb.' Roubiliac stood ready to oblige, for he knew, from his early years in France, a more effective way to show the same scene: the tomb of Charles Lebrun's mother, designed by Lebrun but executed by Tuby and others (fig. 13). Apparently Lebrun invented it to solve a rather special problem – how to design a monumental tomb for an old woman whose only claim to fame was to have given birth to a famous son. We may take it for granted that Lebrun did not know the English resurrection tombs such as that of Sara Colville; he must have decided quite independently that the only merit of his mother that could be celebrated in her tomb was her piety. So he shows her rising from her grave at the call of the angel's trumpet – rather less vigorously than Roubiliac's Mary Middleton. It is a very original concept, since it manages to be dramatically Baroque without using any of the apparatus of glorification familiar from other tombs of the period. In any event, it remained without successors until Roubiliac remembered it some fifty years later.

But weren't there any resurrection tombs in medieval art? The idea seems so natural and fitting. Yet among the many hundreds of surviving medieval tombs, which have been thoroughly surveyed and classified by Kurt Bauch, the

11 **Louis-François** Roubiliac. Monument to
Mary Middleton. Wrexham

12   Monument to Sara Colville (died 1631).
All Saints, Chelsea, London

13　Charles Lebrun (executed by Tuby and others). Monument to the artist's mother. St. Nicolas-du-Chardonneret, Paris

resurrection tomb appears only in a few examples, all of them quite late, i.e. in the latter half of the fifteenth century.[26] The most conspicuous example – the epitaph of Canon Etienne Yver (fig. 14), who died in 1462 – happens to be in Notre Dame in Paris, where Lebrun could easily have seen it. What makes this epitaph so relevant to our subject is the fact that Canon Yver stands in his open tomb very much as Sara Colville does. It seems likely, then, that the English resurrection tombs of the seventeenth century and the tomb of Lebrun's mother have a common late Gothic ancestry represented by plaques like that of Canon Yver. Roubiliac could not have known this, but for us to know it helps us to understand the genesis of the Mary Middleton monument, which is fashionably Baroque by British standards of 1750 but also continues a native British tradition. It was this conjunction that made Roubiliac's design acceptable. There is of course one striking difference between Mary Middleton and Lebrun's mother: one is young, the other old. Oddly enough, however, Mary Middleton too was an old lady when she died. Why did Roubiliac show her as so much younger than she really was? To resolve this puzzle, we would have to delve into the theological arguments as to what will actually happen at the Last Judgment. Does the Resurrection of the Flesh mean that we shall come back to life just as we were at the instant of our death? Surely not, according to one school of thought: we may all look forward to being resurrected in the full vigor of youth instead of being burdened with the ills of old age. Roubiliac, or whoever comissioned the monument to Mary Middleton, must have shared this view. And the artist surely enjoyed the opportunity to show her fairly exploding out of her sarcophagus. Seven years later, in Westminster Abbey, Roubiliac used the same pattern even more dramatically in the monument to General Hargrave, now combined with such familiar Baroque presences as Time and Death.[27]

Let me conclude my plea for form-follows-function in art history with a problem from the field of painting. The still life of 1633 by Francisco de Zurbarán in the Norton Simon Collection in Pasadena (fig. 15) is surely among the most beautiful still lifes ever painted – and among the most mysterious. It is the only still life that is beyond doubt by Zurbarán's own hand. Our picture is also known in several copies, so it must have been well known in its day,[28] and there is a small group of still lifes which, if not by Zurbarán himself, are close to him in style. The Pasadena picture is exceptional for the master, whose large oeuvre consists otherwise almost entirely of religious subjects. There can be no doubt that Zurbarán was a deeply religious man himself. Still lifes as a class – at least those produced in Western art since the sixteenth century – always seem to

14 Epitaph of Canon Yver (died 1462).
Notre Dame, Paris. After M. F. de Guilhermy,
*Inscriptions de la France…*, vol. 1, Paris 1873, p. 32

have a double function. On the one hand, they demonstrate the artist's delight in, and mastery over, the beauty of inanimate objects, which is re-experienced by the beholder; on the other hand, the choice and placement of these objects must be meaningful on some level for both the artist and his public. A still life without such a meaning remains an art school exercise and is unlikely to survive for long because nobody will treasure it. Before this audience, I hardly need refer to the rich variety of meanings in Dutch seventeenth-century still lifes, a subject on which there now exists a considerable body of scholarly literature. Spanish still lifes are another matter. As a distinctive native pictorial tradition, they had a surprisingly brief life span, from the late sixteenth to the middle of the seventeenth century. After that, Spanish still lifes imitated Netherlandish models. We might expect that in Spain, the home of the Counter Reformation, still lifes needed a religious *raison d'être*, although their symbolic meaning is often difficult to spell out even when there can be no doubt of its existence, as in the small but memorable group of still lifes painted around 1600 by Sánchez Cotán, who then withdrew into a monastery and apparently stopped painting altogether. The example in Granada (fig. 16), with its highly 'artificial'

15   Francisco de Zurbarán. *Still life.* Norton
Simon Foundation, Pasadena

arrangement of a star made of carrots and a crescent moon of a cardoon (a kind of giant celery plant), surely conveys a message, but nobody has been able to define it in precise terms. The Zurbarán still life in Pasadena presents the same question even more insistently. I cannot answer it, but I can at least indicate the path along which future research ought to proceed in order to arrive at an answer.

The objects are sharply lit from the left, a device inherited from Caravaggio that brings out their three-dimensional reality. They almost become tangible for the beholder. Texture, shape and color have been rendered with what can only be called reverential care. And the objects are placed before us on a table that suggests an altar. That they are arranged in three groups suggests a possible trinitarian meaning, although not necessarily. There is an equally
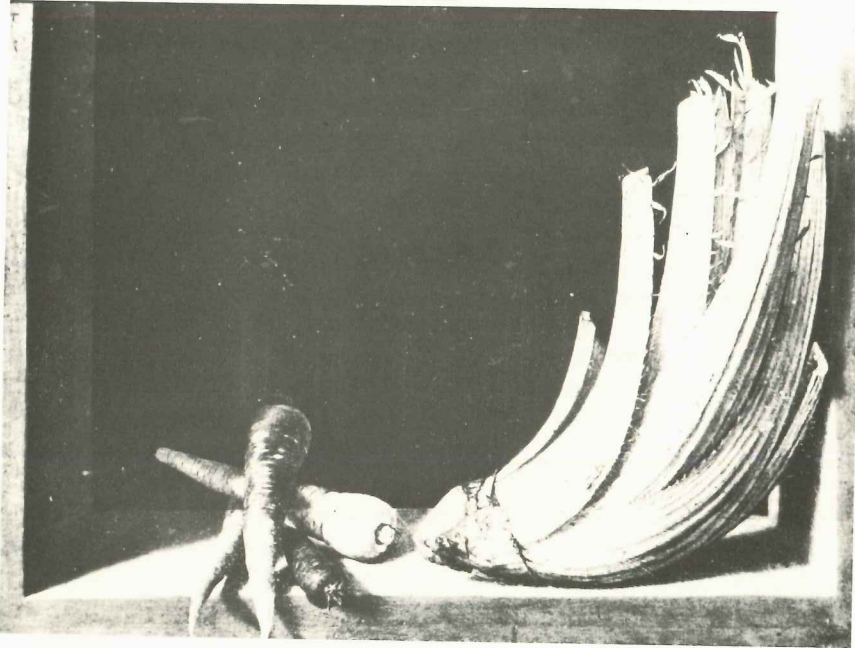
16   Juan Sánchez Cotán. *Still life*. Museum, Granada

solemn still life by Philippe de Champaigne, lost but known from a masterly engraving by Jean Morin (fig. 17) of about 1650, with three objects arranged facing the beholder in the same way as in Zurbarán's picture, where the meaning is obvious at first glance: it is a *Vanitas*, dominated by the centrally placed skull and elaborated by the clock on the left (a reminder that *tempus fugit*) and the two roses in the vase on the right, one a bud that has not yet fully opened, the other one beginning to fade (note the petal it has already shed), an age-old symbol of the brevity of human life. The problem posed by the Pasadena still life is how to account for the choice of objects – four citrons on a pewter plate on the left, a basket of oranges (six are visible) in the center topped with sprigs of orange blossoms, and on the right a highly polished metal plate holding a single rose and a white, two-handled cup with a clear liquid, presumably water. This last group of objects could be accounted for as a choice among the many synonyns for the Virgin Mary extracted from the Song of Songs and familiar since late medieval times. Are the oranges and citrons also Mariological? Orange trees are capable of flowering and bearing fruit at the same time, a botanical peculiarity stressed by Zurbarán and hence surely meaningful. And what of the citrons?[29] There is a large body of scholarly and not-so-scholarly literature on the symbolism of fruit and flowers, but their symbolism is not a stable vocabulary; it varies according to time, place and context, so that we would have to know what the things chosen by Zurbarán meant to a seventeenth-century beholder in southern Spain. I do not know how close a persistent search might come to meeting this demand. We can be sure, however, that the Pasadena picture was part of an established tradition going back to the late sixteenth century. This is evident from a still life in the High Museum of Atlanta, Georgia (fig. 18) by Blas de Ledesma, who worked in Granada, not far from Seville, Zurbarán's hometown, and died in 1598 at the age of forty-two. Aesthetically, this still life is a modest affair, but it shares several important features with the Pasadena picture: an altarlike table, its front edge parallel to the picture plane, and a centrally placed woven basket, which this time contains cherries, another fruit of possible Mariological meaning. The basket is flanked symmetrically on either side with irises and lupins, whose blue and white colors contrast effectively with the red cherries. Oddly enough, these flowers are not *on* the table but *behind* the table, suggesting decoration of the altar for a specific occasion. The symbolic meaning of these elements will have to be clarified by the same sort of research suggested above for the Zurbarán still life. What is immediately evident is that the Blas de Ledesma picture has the same sacramental solemnity as the Zurbarán, and

that both paintings share the same arrangement with the *Vanitas* by Philippe de Champaigne, whose message is immediately understood. Once we know the reasons for the choice and placement of the objects in the Zurbarán and Blas de Ledesma still lifes, we shall have understood their function, their *Aufgabe*, and we shall at the same time have gained a new understanding of them as aesthetic

Quid terra cinisque superbis,
Hora fugit, marcescit Honor, Mors imminet atra.
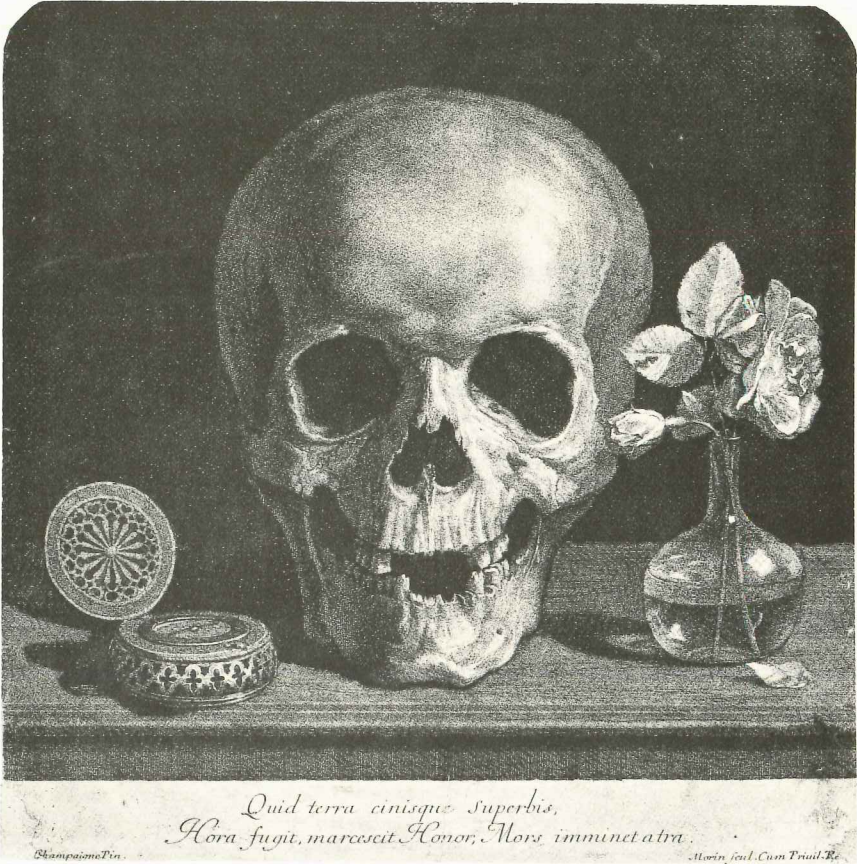
17   Jean Morin after Philippe de Champaigne. *Vanitas*, engraving

objects. The great promise of Burckhardt's functional approach is that it enables us to see style and iconography under a common perspective instead of keeping them in separate and mutually exclusive mental compartments.

In closing, it behooves us to cast a brief backward glance at our starting point, Modernist design theory. If function as understood by Lodoli and his successors has proved inadequate as a source of form, the reason is their narrow and unrealistic concept of function rather than a lack of relationship between form and function. With Burckhardt's help, I have tried to strengthen this relationship by proposing a more inclusive view of function. The ultimate test of my thesis ought to be a demonstration of its applicability to the works of the great champions of functionalism such as Le Corbusier. I think it could be done – but not today.

18   Blas de Ledesma. *Still life*. The High Museum of Art, Atlanta, Georgia

Notes

1 The full text, in English translation, is reprinted in Ulrich Conrads (ed.) and Michael Bullock (transl.), *Programs and manifestoes on 20th-century architecture,* Cambridge, Mass. 1970, p. 59ff.

2 *The shape of time: remarks on the history of things,* New Haven and London 1962, p. 24.

3 See Edward de Zurko, *Origins of functionalist theory,* New York 1957, p. 155ff.

4 Ibid., p. 177ff. and the literature cited there.

5 Cf. especially the writings of Emil Kaufmann, as well as de Zurko, op cit. (note 3).

6 Greenough's writings are conveniently accessible, under the title *Form and function,* ed. Harold A. Small, in a paperback issued by the University of California Press, Berkeley and Los Angeles 1957. On his life and opinions, see Nathalia Wright, *Horatio Greenough, the first American sculptor,* Philadelphia 1963.

7 On Greenough's importance as an architectural theorist see especially Wright, op. cit. (note 6), p. 190f.

8 'The stylistic categories of art history…,' in *Norm and form,* London 1966, p. 81ff.

9 See Paul Oskar Kristeller, 'The modern system of the arts,' *Journal of the History of Ideas* 12 (1951), p. 496ff. and 13 (1952), p. 17ff.

10 *Winkelmann und sein Jahrhundert: in Briefen und Aufsätzen herausgegeben von Goethe,* Tübingen 1805, p. 296. The passage in question occurs as part of a discussion of late eighteenth-century painting in an *Entwurf des achtzehnten Jahrhunderts* that is largely, and perhaps wholly, the work of Heinrich Meyer, Goethe's friend and consultant in matters of art; yet the fact that, as editor of the volume, Goethe did not excise the passage permits us to assume that he approved it even if he did not originate it.

11 'Towards a reductive theory of visual style,' in *The concept of style,* ed. Berel Lang, University of Pennsylvania Press 1979, p. 119ff.

12 See his *Renaissance und Barock: eine Untersuchung über Wesen und Entstehung des Barockstiles in Italien,* first published in 1888. English translation, by Kathrin Simon, London 1964.

13 E.g. Otto Pächt, 'Alois Riegl,' *The Burlington Magazine* 105 (1963), p. 188ff., reprinted in the author's *Methodisches zur kunsthistorischen Praxis: ausgewählte Schriften,* Munich 1977, p. 141ff.

14 For Burckhardt's methodological position, see the perceptive essay by Norbert Huse, 'Anmerkungen zu Burckhardts Kunstgeschichte nach Aufgaben,' in *Festschrift Wolfgang Braunfels,* ed. Friedrich Piel and Jörg Traeger, Tübingen 1977, p. 157ff. As Huse points out, the only scholar of importance to follow the direction of Burckhardt's late art-historical research was Aby Warburg, who viewed his article of 1902, 'Bildniskunst und florentinisches Bürgertum,' as a *Nachtrag* to Burckhardt's *Beiträge zur Kunstgeschichte Italiens.* Among all of Warburg's writings, this early piece comes closest to the spirit of 'Kunstgeschichte nach Aufgaben.'

15 New Haven and London 1962.

16 Cited in note 11 above.

17 For these sources, and the history of scholarly opinion on both statues up to 1955, see

H.W. Janson, *The sculpture of Donatello*, Princeton 1957, pp. 77ff. and 190ff. respectively.

18 Ibid., p. 187ff.

19 Ibid., p. 7ff.

20 See the large altar panel by the Magdalen Master in the Accademia, Florence.

21 The material is collected and analyzed by Deborah Strom, in *Studies in quattrocento Tuscan sculpture*, Ph.D. dissertation, Princeton University, 1979.

22 Janson, op. cit. (note 17), p. 65ff.

23 See H.W. Janson, 'Donatello and the antique,' in *Donatello e il suo tempo: Atti dell'VIII° Convegno Internazionale di Studi sul Rinascimento*, Florence 1968, p. 77ff. (reprinted in H.W. Janson, *Sixteen studies*, New York 1973, p. 251ff.).

24 Janson, op. cit. (note 17), p. 3ff.

25 H.W. Janson, 'La signification politique du David en bronze de Donatello,' *Revue de l'Art* 39 (1978), p. 33ff.

26 Kurt Bauch, *Das mittelalterliche Grabbild*, Berlin 1976.

27 See Margaret Whinney, *Sculpture in Britain 1530–1830* (The Pelican History of Art), Harmondsworth 1964, plates 82A, 83.

28 For a list of copies see Mina Gregori and Tiziana Frati, *L'opera completa di Zurbarán*, Milan 1973, p. 93f. (nr. 101).

29 Julián Gallego and José Gudiol, *Zurbarán*, London 1977, p. 49f., cite earlier references to the altarlike table and the religious symbolism of the Pasadena picture but neglect to document their claim that the entire canvas is an homage to the Virgin, the citron being a paschal fruit, the oranges and orange blossoms the fruit and flower of chastity, the rose symbolic of love and the water of fruitful purity.

30 See Ramón Torres Martín, *Blas de Ledesma y el bodegón Espanol*, Madrid 1978, p. 119f., nr. 100, with references to the earlier literature but no discussion of the meaning of the picture. Lottlisa Behling, *Die Pflanze in der mittelalterlichen Tafelmalerei*, Weimar 1957, p. 38, offers good documentation for the iris as a 'Marienpflanze'; she offers no information, however, on the symbolism of cherries, oranges or citrons. Elizabeth Haig, *Floral symbolism of the great masters*, London 1913, p. 243, calls cherries 'the fruit of heaven' but without citing any sources.

H.W. Janson died on September 30, 1982, before *Form follows function* appeared in print. He did, however, read and correct the proofs of the text as it stands.