

VITRUVIUS' ARTS OF ARCHITECTURE

WITHIN the almost encyclopedic range of Oscar Broneer's contributions to our understanding of classical culture, it is conspicuous that his path has often lain within the realm of the classic architect, Vitruvius. It is perhaps appropriate to recognize this formally, if only by an effort to suggest a slight refinement in a structure of theory as compared with his substantial disclosures about structures in stone.

Vitruvius, in the first paragraph of the second chapter of Book I, writes as follows: "Architectura autem constat ex ordinatione, quae graece taxis dicitur, et ex dispositione, hanc autem Graeci diathesin vocitant, et eurythmia et symmetria et decore et distributione quae graece oeconomia dicitur."

This is translated by Granger in the Loeb edition as: "Now architecture consists of Order, which in Greek is called *taxis*, and of Arrangement, which the Greeks name *diathesis*, and of Proportion and Symmetry and Decor and Distribution, which in Greek is called *oeconomia*"; the other standard English translation, by Morris Hickey Morgan, reads: "Architecture depends on Order (in Greek *τάξις*), Arrangement (in Greek *διάθεσις*), Eurythmy, Symmetry, Propriety, and Economy (in Greek *οἰκονομία*)."

In general it seems fair to say that a common understanding of this passage is that the six terms listed refer primarily to qualities of a building—that they represent somehow aesthetic properties of the work of art which is the product of the architect's creativity. The point to be urged here is that Vitruvius actually has in mind two quite separate categories among which the six terms should be distributed: first, what the architect does—his "art" in the sense of his technical activity; and, second, the aesthetic qualities of the building that is produced—the "work of art" itself. To the first belong *ordinatio*, *dispositio* and *distributio*; to the second belong *eurythmia*, *symmetria* and *decor*.¹

¹ I think that almost all of my individual interpretations can be found in some form in the literature, but that my formulation, in varying degrees in the details and in the synthesis, represents a clarification. For the reasons which it is the purpose of this article to discuss, it is usually difficult or even impossible to ascertain how previous students have understood the matter. In all the translations I have consulted there is a verbal ambiguity which could represent either a misunderstanding of Vitruvius' intention or an intention on the part of the translator to convey Vitruvius' ambiguities in spite of the translator's own awareness of Vitruvius' intent. Among the commentaries, J. A. Jolles, in *Vitruvius Aesthetik* (Diss. Freiburg im Breisgau, 1905) provides a painstaking and exhaustive analysis of all terms, but, while noting alternatives, seems finally to tend to regard them all as essentially aesthetic. So, too, does F. L. Schlikker in his *Hellenistische Vorstellungen von der Schönheit des Bauwerks nach Vitruv* (Diss. Münster, 1940): although he deals substantially only with *symmetria*, *eurythmia* and *decor*, when he does discuss the others (e.g., pp. 70-71, 72 ff.)

The problem in these distinctions is basically a semantic one, initially in Vitruvius' own writing and subsequently in the language of the translations. The initial problem derives partially from Vitruvius' own purpose and from his background. His over-all purpose is announced at the end of the Preface to Book I: to set forth all the "*rationes disciplinae*" (kinds of reasoning in the profession of architecture). Then in the first chapter of Book I he discusses the "*scientia*"—the knowledge—which an architect ought to have. In the second chapter he appears to be attempting to analyze the basic theoretical structure of "architecture" itself, as he conceives the term. With the third chapter he begins to deal comprehensively with the practical particulars of the subject, to which he devotes the rest of his work. Thus it seems clear that he is attempting to construct a complete, quasi-Aristotelian, logical system for his subject.

At the same time he is at pains to make explicit his limitations in this endeavor. He asserts, at the end of Chapter 1, that he is not an accomplished philosopher or rhetorician or *grammaticus* experienced in the high levels of the "*rationes*" of their arts, but that, as an architect "who has a mere tinge" (Granger) of these things he promises that he will provide a precise statement of the "*potestas*" of his own art and its "*ratiocinationes*."² Moreover, he seems to imply (in Book VII, Pref., 15, 18) that, although there have been writings on the subject in Greek and even in Latin, his own work has some claim to originality.

Thus one should have in mind that he is attempting to deal with material that is thoroughly familiar to him, but, in this chapter, in a way which is not fully established in his own language and with which he is not perfectly familiar. It should therefore be expected that his expression might in some respects prove to be somewhat clumsy and ambiguous.

All of this is of course generally recognized in modern treatments of Vitruvius, but even when his actual meaning may have been clear to the commentator or translator, some of the same ambiguities and clumsiness remain in the translations or interpretations because of semantic problems in the modern language. In a sense this makes for a fair representation of Vitruvius' own actual statements, but it does leave room for exegesis and clarification of his real thought and intention.

The problem can perhaps be most clearly illustrated by a discussion of the term *dispositio*. This is translated as "Arrangement" by both Granger and Morgan.

he seems to me to try to involve them in the aspects of the aesthetic concepts. Silvio Ferri, in his *Vitruvi de architectura* (Rome, 1960; pp. 48-60), in his translation and extensive notes appears to regard all six terms as parts of an aesthetic system or systems. Paul Frankl, in *The Gothic-Literary Sources and Interpretations through Eight Centuries*, Princeton, 1960, pp. 90-102, seems to come very close to my view.

² Is there a reflection here of the opening lines of Aristotle's *Poetics*:

Περὶ ποιητικῆς αὐτῆς τε καὶ τῶν εἰδῶν αὐτῆς, ἦν τινα
δύναμιν ἕκαστον ἔχει, καὶ πῶς δεῖ συνίστασθαι τοὺς μύθους.

Like *dispositio* in Latin, the word "Arrangement" in English can be taken in two senses: the act or process of arranging things, or the position of things in relation to each other in the completed work. In the wording and phrasing of both of their translations, while it is possible to sustain either meaning in the English, the broad general impression left is of the latter. In a close reading of Vitruvius' own explanation, however, it is clear that he really and unequivocally means the former, and is trying, however awkwardly, to express this.

In the first place, in his short definition of the term *dispositio* he uses as synonyms the words *conlocatio* and *effectus*. Of these it will be observed that like *dispositio* itself, *conlocatio*—and almost all Latin nouns in *-tio -tionis* (*Thesaurus Linguae Latinae, s.vv.*)—have as their primary meaning the sense of the performing of a process, and only as a secondary meaning the result of the process. So, too, verbal abstracts in the fourth declension (e.g., *effectus*) commonly carry the same distinction. Moreover, *diathesis*, which Vitruvius mentions as a Greek synonym, belongs to a class of words ending in *-σις* which, according to Buck,³ "forms verbal abstracts or action nouns consistently." Thus *dispositio* is defined as "the placing together" and "the effecting" or "the working out"—not as "the resultant composite form" or as "the effect (impact) of the object on an observer."

In the second place, the subdivisions of *dispositio* are given—namely *ichnographia*, *orthographia*, and *scaenographia*. These are Greek words without, apparently, Latin equivalents suitable for Vitruvius' purpose. Whatever their normal meaning (in English: ground plan, elevation, perspective?) Vitruvius is at pains to define them for his own purpose. *Ichnographia* and *scaenographia* are specifically defined as actions: the "using" of compass and rule, and *adumbratio* (shading or sketching). *Orthographia* is defined as an *imago* and a *figura*, but this could be a lapse from precision, and is outweighed by the other two. In any case, these activities are in turn explained as emerging (*nascuntur*) from *cogitatio* and *inventio*, which are defined in terms of *cura* and *effectus*, *explicatio* and *ratio*, all of which would have as primary reference the activity of the architect.

Thus for *dispositio* we may assume that what Vitruvius has in mind is the process of designing something, as distinguished from the completed design. That is, the making of plans and drawings, not the plan, elevation and spatial form of the building itself.

The same considerations are operative in an understanding of the term *ordinatio* (see esp. Forcellini, *Lexicon Totius Latinitatis, s.v.*, though here oddly entangled with *dispositio*). There is a difficulty, perhaps, in that the short definition given is that *ordinatio* is a "*modica membrorum . . . commoditas separatim, universeque proportionis ad symmetriam comparatio.*" *Comparatio* of course is a *-tio -tionis* word, but *commoditas* is not. In this connection it is worth noting that Krohn (Deubner,

³ *Reverse Index of Greek Nouns and Adjectives*, Chicago, 1944, p. 574.

1912) thought that *modica* and *commoditas* were a gloss on *οἰκονομία* in the preceding line, and should be stricken from the text. If not, it does remain a difficulty. Moreover, in the following sentence Vitruvius says that *ordinatio* “*componitur ex quantitate*,” which on the face of it might seem to also be a difficulty, but he then defines *quantitas* as “*modulorum . . . sumptio*” and “*universi operis . . . effectus*”—again concepts with the thrust of activity. Thus *quantitas* might be understood as a kind of colloquial technical term—the “how muchness,” or “quantification,” in the operation. Finally, the Greek equivalent, *taxis*, belongs in the same category of words as *diathesis*, primarily an action noun.

Vitruvius gives no explicit specific examples of *ordinatio*, but we can perhaps surmise easily enough what the architect would be doing while he was carrying out that process. He would be calculating the module for the *symmetria* and from this the dimensions of the individual members of the building. In other words, he would be calculating and writing up specifications for the building, such as we know from numerous more or less fragmentary Greek inscriptions. For a frequently observed example, in Book VII, Pref., 12, Vitruvius, in speaking of Greeks who had produced books *de symmetris*, notes that “Philo (produced one) on the symmetries of the sacred temples and on the arsenal which was in the port of the Piraeus”—and an inscription known to us as a set of specifications by Philo for this arsenal still exists (*I.G.*, II-III², 1668). And, “curiously enough” (to use Granger’s translation) in paragraph 14 he mentions a Fufidius (or Fuficius) as “the first (of our architects) to write on these matters,” and both a Fufidius and a Fuficius appear on the sole example of such specifications in Latin, from Puteoli (though not, to be sure, signed explicitly as architect).⁴

Thus *ordinatio* should be understood not as “order”—a quality of a building—but as “the putting of things in order,” “the ordering of the parts”—the calculating of the dimensions of the building and its parts.

Finally, in this category belongs also *distributio*, although it comes at the end of Vitruvius’ list, separated by the three terms of the other category. *Distributio*, too, is a *-tio -tionis* word. In the short definition, the synonyms are *dispensatio* and *temperatio*, in the same class of words. The explanation makes it clear that the term covers the activity of the architect in constructing a sensible budget of costs, taking into account the financial and public position of the patron. Indeed, this latter consideration, as Vitruvius puts it, might seem to fall more appropriately with *decor* (see below), and perhaps we might see here too a degree of imprecision in his thought or expression. But clearly his eye is on the patron—he specifies several kinds, and with particular reference to his economic level—whereas in the discussion of *decor* he is apparently thinking primarily of the form of the building.

⁴ *Lex Parieti Faciendo Puteolana: C.I.L.*, X, 1781: Col. I, 1.2; Col. III, 1. 17. James G. Egbert, *Introduction to the Study of Latin Inscriptions*, New York, rev. 1896, pp. 377-378.

Thus we have three words in *-tio -tionis*, each with an innate ambiguity but each easily, and most plausibly, understood as having to do with activity of the architect. Turning now to *eurythmia*, *symmetria* and *decor* we find no such ambiguity semantically: these words clearly do not designate an activity or operation, but must certainly refer to qualities.

It is strange, perhaps, that Vitruvius does not begin with *symmetria*. This is obviously the fundamental principle in his whole concept of design (and, by consequence, of designing), and his operative basis in calculating specifications. It is of course misleading to translate the term by the English "symmetry," since this commonly has the sense of balance on some axis or around some point, and is therefore unnecessarily ambiguous, whereas the Greek word itself and Vitruvius' explanations make it crystal clear, and everyone understands that he means it in the sense of "a common scale of measure"—"having all parts of a size rationally measurable in terms of a common module derived from the work itself."⁵ This relationship is what creates logical clarity in the structural pattern of the work.

Eurythmia he explains so sketchily that his entire concept of it is not at all clear. He says it is a "*venusta species*," a "*commodus aspectus*," and that it is achieved by having the proportions of height, width, length, and everything else respondent to *symmetria*. This is little more than to say, as Morgan translates, that it is "beauty and fitness" in the adjustment of members. But one might suggest that he was thinking of the quality of rhythm in more specific ways: the dynamic factor in the visual impression—the kinds of movement embodied in straight or curved lines, the major and minor stress of accents in the repetitive detail, and so forth, that would correspond to the rhythms of stress or quantity in poetry or prose. He makes the point that architecture should have *good* rhythm, pleasing to the senses, but elaborates only to say that essential to this is *symmetria*.

Decor, on the other hand, is explained at considerable length, but in a way that seems at first sight almost extraneous to our own more abstract aesthetic values. It is brought about by *statio* (Greek, *thematismos*), *consuetudo* or *natura*. (Granger: convention, custom, nature; Morgan: prescription, usage, nature). The examples of achievement by *statio* refer to styles (i.e., Doric, Ionic, Corinthian) as each may be appropriate to the several kinds of divinity. The examples of achievement by *consuetudo* (translated by Granger here as "fashion") include the observations that magnificent interiors should have magnificent vestibules, and that details of the Ionic and Doric orders should not be mixed. Examples of "natural" decor include the

⁵ Irrelevant to the particular theme of this discussion, though not to the exegesis of the passage, is the thought that in paragraph 4, where Vitruvius says that the calculation of the symmetries in temples is got "from the thickness of the columns or a triglyph or the *embater*," the word *embater*, which is often translated "module," might not unreasonably be taken to mean what we would call the stylobate—the "footing" or base on which the columns stand—i.e., the basic over-all width of the building.

recommendation that temples (especially of Aesculapius) should be in healthy sites, and that interiors should be provided with the kind of light appropriate to their use.

Thus *decor*, in general, seems to imply some kind of appropriateness of the building to function or tradition. Indeed, we might not be far wrong in supposing that in this term Vitruvius was approaching our own concept of functionalism in architecture—that “form should follow function.” His analysis is certainly not as complete as would be ours in this department, but some of his examples might be closer to our principle than we might at first be inclined to think: his sense of the appropriateness of certain styles or orders to certain divinities might well correspond to our sense that a church, for example, should not look like an apartment house.

To recapitulate: Vitruvius analyzes in his own mind the “art” of architecture first by distinguishing between the “art” of the *architect*—the operations he performs—and the “art,” or aesthetic qualities, in the *work*, or building, which he has accomplished. The art of the architect consists in *ordinatio* (preparing specifications), *dispositio* (designing the forms) and *distributio* (allocating the costs). The art in the building consists in *eurythmia* (dynamics), *symmetria* (commensurability) and *decor* (functionalism).

In retrospect one may wonder why this does not come out more clearly in his statement. If, for example, he had begun with the art in the building (the *potestas*?), and put the terms in the order *symmetria*, *eurythmia* and *decor*; and then followed with the art of the architect (the *ratiocinationes* ?), in the order *dispositio*, *ordinatio*, *distributio*, the rationale of the analysis might have been more readily apparent. But Vitruvius was first and foremost a practicing architect and engineer, and only secondarily, somewhat painfully and self-consciously, an aesthete. Surely the most laborious part of the architect's activity, and high in his mind, would have been the preparation of the specifications—the *ordinatio*. *Distributio*, on the other hand, to him may have been almost an afterthought, slightly unworthy of inclusion in a high-principled analysis of a supreme art, though obviously necessary.

Furthermore it is interesting that, with the exception of *symmetria*, none of these terms recurs with any frequency or consistency in the remaining part of his book. It is as though he was struggling impatiently in this chapter to construct an overall theoretical framework, more than a little alien to his usual way of thinking, and having accomplished this, set it aside, perhaps with some relief, to discuss his material in a more personally congenial fashion. He felt an abstract value in establishing his own art on conventionally or “academically” proper theoretical grounds, and tried to do this as best he could by sturdily trying to comprehend the arts of the philosopher, rhetorician and *grammaticus*. The result is, perhaps, less than perfect, but nonetheless reflects creative insights that constitute genuine contributions in the history of the effort to understand art.

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