RESEARCH ARTICLE

The *Composto Ordinato* of Michelangelo's Biblioteca Laurenziana: Proportion or Anthropomorphy?

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Starting from reactions to the Ricetto of the Biblioteca Laurenziana by contemporaries, who tried to make sense of its strange and unprecedented forms either by using the rhetorical concept of *compositio* or by assuming a proportional system in the vestibule, I will show how in the latter part of the 18th century proportion lost its role as the objective foundation attributed to architectural beauty. Instead, beauty became redefined as an experience of the human mind, arising from the accordance between the properties of an object, its sensuous experience and the perceptive apparatus of the human mind. But this redefinition does not mean that proportion, or to be more precise, the assumption of a proportional system, became irrelevant. In the final part of this paper I will argue that in Kant's aesthetics, proportion, in the sense of a visible set of relations between the dimensions of the parts of a building that can be expressed in mathematical terms, became one of the key features of a building, or indeed any object, that enables the human mind to make sense of, and judge, the objects of sense perception. Continuing Kant's line of thought I will argue that the assumption of a proportional system, together with the projection of anthropomorphy onto architecture, are the two major hermeneutic strategies by which human beings try to understand buildings.

Introduction

The argument of this essay is a philosophical one, but it has an historical dimension. It starts from a building not usually associated with proportional systems, the Ricetto or anteroom of the Biblioteca Laurenziana in Florence (1525–1534), and a few drawings Michelangelo made in connection with his designs for the San Lorenzo complex (**Figs. 1**, **2**).

What do these images, which combine an architectural profile with a human one, tell us? Do they suggest that the human profile shares some proportional relation with the architectural outline, in the sense of a common pattern of mathematical relationships, for instance that the face can be divided into four equal parts? That the human profile is the visual manifestation of some geometrical substructure? Or conversely, that the geometrical structure of an architectural profile can best be understood in anthropomorphic terms?

Starting from reactions to the Ricetto of the Biblioteca Laurenziana by contemporaries, who tried to make sense of its strange and unprecedented forms either by using the rhetorical concept of *compositio* or by assuming a proportional system in the vestibule, I will show how in the latter part of the eighteenth century proportion lost its role as the objective foundation attributed to architectural beauty. Instead, beauty became redefined as an experience of the human mind, arising from the accordance

between the properties of an object, its sensuous experience and the perceptive apparatus of the human mind. But this redefinition does not mean that proportion, or to be more precise, the assumption of a proportional system, became irrelevant. In the final part of this paper I will argue that in Kant's aesthetics, proportion, in the sense of a visible set of relations between the dimensions of the parts of a building that can be expressed in mathematical terms, became one of the key features of a building, or indeed any object, that enables the human mind to make sense of, and judge, the objects of sense perception. Continuing Kant's line of thought I will argue that the assumption of a proportional system, together with the projection of anthropomorphy onto architecture, are the two major hermeneutic strategies by which human beings try to understand buildings. In the course of Western architectural theory there have been other approaches to beauty — Alberti's definition in terms of splendour and magnificence, for instance — but they lend themselves far less well to conceptualization or theorization than these two, perhaps because of their cultural contingencies.

The *Composto Ordinato* of the Ricetto

As is well known, viewers have long found the Biblioteca Laurenziana, and its vestibule or Ricetto in particular, very puzzling.[1] In the 20th century Nicolaus Pevsner wrote of the feeling of oppression the room created; James Ackerman of the disobedience to the Vitruvian rules in the orders and the subversion of architectural decorum (Pevsner 1983: 222; Ackerman 1961: 42). More recently Cammy Brothers has argued that the discomfort,

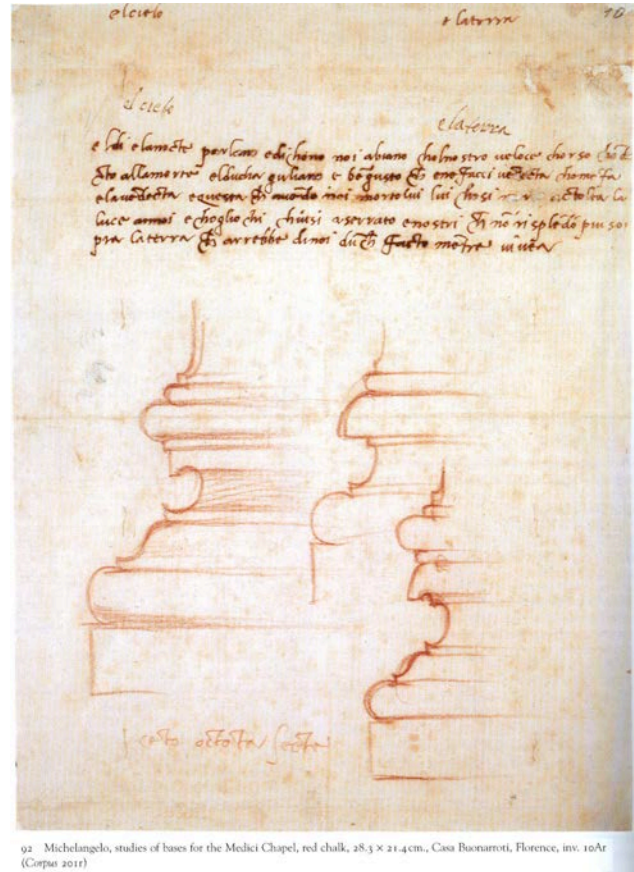* Leiden University, Netherlands
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Fig. 1: Michelangelo Buonarotti, Biblioteca Laurenziana, vestibule, from 1524 onwards. Photo: Wikipedia commons.

92 Michelangelo, studies of bases for the Medici Chapel, red chalk, 28.3 × 21.4 cm., Casa Buonarroti, Florence, inv. 10Ar (Corpus 2011)

Fig. 2: Michelangelo Buonarotti, study for the orders of the Ricetto of the Biblioteca Laurenziana, Florence, Casa Buonarroti, inv. 10Ar.

disorientation or disquiet experienced by visitors may be accounted for by Michelangelo's introduction of elements usually reserved for façades into an interior (Brothers 2008: 161–181). Furthermore, it is not a building usually studied for its proportional system.

Michelangelo's contemporaries, even though they do not report the malaise felt by the historians just mentioned, also found the Ricetto singular and difficult to interpret. Vasari's comments about Michelangelo's work in the Sacrestia Nuova, that there he liberated architecture from the chains and bonds by which architects before him had followed a beaten path in the execution of their work, are relevant to this issue, because they give some sense of the metaphors a contemporary drew on to speak about Michelangelo's work (Vasari 1927, 7: 193). The reactions by Francesco Bocchi, Cosimo Bartoli and Carlo Lenzoni, who drew on analogies between Michelangelo's freedom in handling the orders and contemporary literary inventiveness, are less well known. Even less studied is the attribution by the 18th-century historian Giuseppe Ignazio Rossi of a proportional system to the Ricetto to make sense of it.

The analogy with language
In the *Bellezze della città di Firenze*, first published in 1591, Francesco Bocchi clearly struggled to make sense of the Ricetto, and is not always successful. After mentioning the

very simple measurements of the room (twenty by twenty *braccia*), he notes that the measurements of the columns ('le misure') are different from elsewhere, but their handling here is nonetheless evidence of Michelangelo's extreme talent. He is also very astute in noting that the brackets, which do not support anything, are handled correctly, because despite appearances, the supporting work is done by the columns.[2]

Other contemporaries noted the combination of Corinthian proportions with a Doric appearance in the Ricetto's order: whereas the columns have a Doric capital and base, and no fluting, their ratio of height to diameter is 1 to 9 instead of 1 to 6. Caroline Elam has shown, in her 2005 article on the Biblioteca, that the Florentines Cosimo Bartoli (1503–1572) and Carlo Lenzoni (d. 1551), who, following Vasari, analysed the design in terms of a mixture of Doric ornament and Corinthian proportions, did not make sense of this mixture in mathematical terms (Elam 2005: 61–66). Instead they suggest a parallel with language, and in particular with the question of the *composto*; i.e., whether it is allowed to make new combinations that did not exist in antiquity, as does the Tuscan dialect, which was seen as a *composto* of Latin, Etruscan and Tuscan elements. In Carlo Lenzoni's *Difesa della lingua fiorentina*, published posthumously in 1556, set in San Lorenzo, and dedicated by its editor Pierfrancesco Giambullari to Michelangelo, the architect

is held up as an example and defence of such new developments, in which imitation is replaced by new *composti*. If critics were to forbid poets to move beyond the Greek and Latin classics and invent something new, architects might just as well limit themselves to the Doric, Tuscan, Ionic, and Corinthian orders, and resign themselves to avoiding the possibilities for new invention afforded by the Composite order (Elam 2005: 64, where this passage is cited in full).

Thus, the novelty of the Ricetto, its strange forms and *composto* of Doric forms and Corinthian ratios between the diameter and the length of the column, and its novel handling of ornaments such as the brackets, is interpreted in terms derived from the rhetorical concept of *compositio*. Originally, in Cicero and Quintilian's treatises on rhetoric, this word was used for composite sentences with subordinate clauses. Subsequently it was introduced into artistic theory by Leon Battista Alberti, to designate the painterly process of putting together the figures of an image into a coherent and persuasive representation, or, the creation of a persuasive unity out of conflicting elements (Baxandall 1971: 129–139; Puttfarken 2000; Van Eck 2007: 66–73, 127–134). Cosimo Bartoli, in his *Raggionamenti academici* of 1567, draws these strands together: 'If Michelangelo differed from the Ancients, he has kept a proportion in his works which is very agreeable to the spectator, and gives much pleasure to those who consider it carefully'.[3]

The assumption of a proportional system

Another strategy was pursued by Vincenzo Danti, who also dedicated his *Trattato delle perfetti proporzioni* of 1567 to the artist. Although originally planned to have nine books, only one was finished. For Danti, proportion — that is, proportional beauty as defined throughout this volume — is the visible manifestation of *ordine*, the commensuration or *commisurazione* of the parts and the whole, both in the cosmos (i.e., in nature) and the works of man. Such proportion is not limited to quantitative relations. Instead, Danti defines it, in a reprisal of Aristotelian metaphysics, as the beauty resulting from the perfect *attezza*, aptitude or fitness of the parts forming together a *composto ordinato*. In other words, proportion here is the expression or manifestation of fitness for the purpose of the whole of the parts of a *composto*. Proportion redefined as fitness for purpose thereby gives outward form, often based on organic forms, particularly the human body, number, and measure to the parts of a natural organism or human artefact. It also ensures commensurate quantities. In the case of the human body, for instance, the fitness of the members for their functions generates beautiful proportions, and that is what viewers, according to Danti, call beauty. These viewers prefer the *composto ordinato*, resulting in beautiful proportions of different parts because these offer in their differentiation more variety or *varietà*. In the human body, the commensurate measurements of the members therefore reflect the underlying fitness of those members. Artists can imitate the *composti* to be found in nature, in plants and animals, or create their own works and new *composti*, including the ornaments designed by

architects. They can produce new forms which seem to possess much more artifice and perfection than natural organisms; these forms follow architecture's own laws, but are still governed by the authority of nature (Hemsoll 2003: 61).

In the case of Michelangelo's Ricetto in San Lorenzo, the basis of his new, composite repertoire of forms is provided by the forms of nature according to Danti. The *composti* of the architect are combinations of natural forms, mainly derived from the human body, but with an underlying system of commensurate measurements. Such proportional systems therefore, according to Danti, are not just mathematical relations; they are primarily expressions of the fitness for purpose, the teleological unity of the elements of an organism or artefact. In uniting unequal elements, proportional systems create *varietà*, a major cause of beauty according to Danti.

In 1739, almost 180 years later, Giuseppe Ignazio Rossi would push this tendency to find proportion in the Ricetto even further in his monograph on the Biblioteca, *La Libreria Mediceo-Laurenziana, architettura di Michelagnolo Buonarotti*, attempting to retrieve a proportional system of the walls and their orders. His conclusion was that Michelangelo here developed a new order, 'Dorico-Corinthio', with a ratio of diameter to shaft height of 1 to 5.5, but in which the pedestal and shaft are quite close to the Corinthian order in their detailed articulation. It cannot be established whether Rossi actually measured the Biblioteca, and if so, by what method. In fact, Rossi's monograph can be read as one big essay in normalization, submitting the building to the uniformizing representational regime of orthogonal and sectional projection, which robs the staircase of its dynamism, and the room as a whole of its play of light and above all shadow achieved by the pietra serena ornament. Indeed, Rossi concludes that the pure force of the underlying proportional system he attributes to the Ricetto makes it perfect, without the need of the 'external dress of studious ornament'.[4] It is an admirable attempt at ignoring or downplaying what cannot be accounted for — the strangeness of the ornament combined with its hidden, but quite compelling logic, which makes all the difference between the genius of Michelangelo and the talent of his followers, by hypothesizing what can be understood in mathematical, that is, rational terms: Michelangelo's development of a new proportional system.

So up to now we have found several ways of accounting for the strangeness and novelty of the Ricetto: by trying to discover a proportional system, or a new, Dorico-Corinthian order; that is, by relating Michelangelo's innovations to existent precedents and thereby normalizing them; or, as in the case of Lenzoni, by drawing the Ricetto into the sphere of debates about the Tuscan dialect, and thereby assimilating the mode of utterance and address of the Biblioteca Laurenziana to that of rhetoric. Lenzoni, like Bocchi before him, did so by taking the concept of *composto*, with its rhetorical associations of *compositio* — since Alberti, one of the major cases, if not the major case, of using a rhetorical concept to discuss artistic design — as the guiding

metaphor to articulate the experience and strangeness of the Ricetto. Danti went even further, endowing the rhetorical concept of *composto ordinato* with Aristotelian associations because he made it the result of fitness for purpose, or teleological unity of the parts.

To return for a moment to Michelangelo's drawings for San Lorenzo, with their juxtapositions of architectural and human profiles, we might go somewhat further in the rhetorical analysis of Michelangelo's overall design or individual ornaments in the Biblioteca, with its anthropomorphic references and analogies, and read it in terms of the rhetorical figure of style called *hypotyposis*. Derived from the Greek *túpos*, or type, it referred initially to an image or model impressed on the mind. Subsequently, it came to mean a verbal or visual image, or a series of illustrative details, that makes a strong impression on the mind. Michelangelo's couplings of human forms and architectural elements can be termed *hypotyposes*: by their abundance of descriptive detail, they make vivid and imprint on the mind their analogy, or even metaphor, of architectural and human profiles, with their underlying *tertium comparationis*.

Assumptions of proportional systems in the Ricetto thus served as the basis for various narratives about the room: narratives of *composto*, *ordine*, and *varietà*, of novelty and originality, and fitness for purpose. This analysis of viewers' reactions to the Biblioteca Laurenziana can be pushed even further. The square dimensions of the Ricetto suggest that there may be easily perceptible relations between dimensions on a very basic level. But as the various attempts to account for its uniqueness discussed here show, there is no evident, consistent or even logical relation between the proportions as observed and the conclusions drawn from them. Rather, it seems as if the proportions viewers think they observe here function as the first guide to making sense of what they see. They have a function in making the viewers think and reformulate what they see in terms of Aristotelian teleology, rhetoric or the *questione della lingua*, but there is no inherent quality in the observable relations between measurements to connect them in a necessary or sufficient way to these interpretations — let alone to the Ricetto's beauty. That is, they have a hermeneutic or epistemological role in the process of the viewer's perception, but they are not inherent aesthetic qualities of the design.

Proportion: a matter of conventions?
In Michelangelo's writings or designs there is very little demonstrable interest in the Platonic legitimation of proportional systems that had become current in sixteenth century theology and metaphysics, and adopted late in the century by the more philosophically inclined architectural theorists, such as Daniele Barbaro and Vincenzo Scamozzi (e.g., in Scamozzi 1615: xxiv, 1–3, 5).[5] For him mathematical features of the human body, such as symmetry, do not reflect the divine mathematical structure of the universe or of man, but the actual, physical appearance of the human body, as is shown by the letter to an unknown prelate (Buonarroti 1983, 5: 123; Summers

1981: 418–446). A major step in the deconstruction of the Platonist conceptual substructure of proportional systems was made, as is well known, by Claude Perrault in the *Ordonnance*, with his distinction between positive architectural beauty founded on reasons that convince everybody and arbitrary beauty based on the effects of habits and association; the appreciation of proportion belongs to the latter category (Claude Perrault 1683: i–x). What is perhaps slightly less well known is the way his brother Charles takes this movement even further in the *Parallèle des anciens et des modernes* of 1688, published five years after the *Ordonnance*. Here he asked whether the capacity to employ the figures of speech of rhetoric is innate and therefore universal, and compares that capacity to that of using the orders, which according to the defenders of the ancients is also innate. By implication he also questions whether the capacity to use proportional systems is innate, and hence universal and not in need of being taught (Perrault 1692: 126–177). He thus leaves room to entertain the idea that the use of the orders and, by extension, of proportion is a matter of culture and instruction, and hence capable of development or innovation, and liable to decay or even to become obsolete. By this move, proportion became part of the domain of human culture, subject to convention and change, and liable to the threat of relativism.

Proportion, beauty, and human perception
In a section of *Architectural Principles* titled 'The Break-away from the Laws of Harmonic Proportion in Architecture', Rudolf Wittkower describes 18th-century developments in the use and theory of what he calls proportion, without distinguishing between mathematical proportion and proportion-as-beauty, as a matter of decline and increasing relativism, caused mainly by the impact of British Empiricist aesthetics. By locating the foundation of judgments on beauty, so his argument runs, in the sensuous experience of the subject, and not in the measurable qualities of the object, beauty judgments lose their objective basis, and with this shift proportion lost its foundational role as the basis for beauty as well. This move had been prepared by Claude Perrault's voicing of social relativism in the *Ordonnance*, connecting an appreciation of the orders to the social standing of those who propagate them, that is the King and his *Académiciens*, and his brother Charles's implicit presentation of cultural relativist views in the *Parallèle*, when he opens the possibility of conceiving that the orders, like rhetoric, may be a contingent feature of European classical culture.

One of the most explicit cases of the impact of empiricism on architectural aesthetics, however, Julien-David Le Roy's 'Essai sur la théorie' included in the second edition of his *Les ruines des plus beaux édifices de la Grèce antique* of 1770, points in a different direction from the one Wittkower suggests. Instead of a statement of empiricist aesthetic relativism, the chapter entitled 'Des Principes de l'Architecture qui dépendent de notre âme, et de notre vue' is an attempt to understand how architectural beauty

can arise once the argument for its objective basis has lost its validity in the interaction between a building, the spectator and the environment (Van Eck 2015). Le Roy does not have in mind a unique individual, endowed with a biography and with a private and personal taste, but the manner in which the perceptual and cognitive make-up of all human beings conditions their perception of buildings. Although Le Roy agreed with the Perrault brothers and John Locke that there is no fixed, inherent, objective basis for beauty, he is no subjectivist. Beauty, we might say using the terminology Locke developed, is not a primary quality, like weight or number, but a secondary one, arising in the mind's perception of sense impressions (Geraghty 2011: 125–143).

In Le Roy's analysis, there are first principles, general axioms such as the laws of mechanics, whose application does not result in beauty; and there are secondary principles, less general and secure, that do lead to beauty: 'the agreeable sensations, the force or the variety of sensations that Architecture makes us feel'.[6] Le Roy's analysis applies in particular to colonnades or peristyles, as his well-known description of viewing the east colonnade of the Louvre (1672) illustrates:

> Run your eye along the full extent of the colonnade [...] while walking the length of the row of houses opposite; stand back to take in the whole; then come close enough to discern the richness of its soffits, its niches, its medallions; catch the moment when the Sun's rays add the most striking effects by picking out certain parts while plunging others in shadow: how many enchanting views are supplied by the magnificence of the back wall of this colonnade combined in a thousand different ways with the pleasing outline of the columns in front of it and with the fall of the light! (Le Roy 2004: 372).

That is, the empiricist shift from an objective beauty inherent in a building and based on a system of mathematical relations between the parts and the whole, to a subjective definition of beauty as a *sensation* or *experience* of beauty that arises in the interaction between the building, its environment, its viewer and viewing conditions is not, as Wittkower and James Ackerman argued, a shift from objective rules to individual, subjective feelings and emotions. Instead, Le Roy attempts to demonstrate how the sensation of beauty arises from the fit between the object, its perception, and the human sensory and cognitive apparatus. In this, Le Roy was much influenced by Montesquieu's *Essai sur le goût*, published in 1757 and a major step in introducing British empiricist thought in France (Becq 1994: 437–474).[7]

Also, in Le Roy's account of viewing the Colonnade the experience is triggered by the placement and proportioning of its columns. It is no longer a narrative of *composto ordinato* or fitness for purpose of the building. Instead it has become a narrative about form and light, about the changing perception of the colonnade as the light changes or the spectator changes her position. It is, as Sigrid de Jong has argued in her recent *Art History* article on architecture and theatricality, a plot about the first perception, gradual apprehension, and understanding of a building in the interaction of architecture, situation, and spectator (De Jong 2010: 334–352). But in Le Roy's case it is also an account of almost empty, purely sensual narrative, a proto-phenomenological experience of architecture, light and shade, solids and voids, columns and arcades. It is a recollection of an aesthetic experience in the 18th-century sense, prefiguring Kant's definition of the experience of beauty as the harmony of a human being's powers of perception and cognition. Le Roy's narrative also reconstitutes the awareness and articulation of a physical experience of inanimate stone which to the viewer appears to become animated by the changes caused by the trajectory of the sun and the movement of the spectator's gaze (Le Roy 1770: vii). Le Roy's narrative of viewing the colonnade documents the change, in 18th-century architectural aesthetics, from the attribution of proportion to a building as a way of accounting for its beauty, to a new, subjective experience of beauty in which empathy, or *Einfühlung* — endowing lifeless stones with human emotions and memories of physical experiences — takes over from a more analytic attitude.

A new version of *hypotyposis*: anthropomorphy and Kant's schematism

Now let us return for a moment to Michelangelo's drawings of a human profile merged with an architectural profile (**Figs. 1**, **2**). It is unclear what these images purport to say: that the human face has a formal architectural substructure? that the proportions of architecture can best be understood, or figured out, as human forms? that there is a fundamental similarity between the forms of the human face and body and those of pediments or architraves? I also mentioned that these sheets may be interpreted, drawing on rhetoric, as cases of *hypotyposis*: as a wealth of visual, illustrative detail that allow the images to be forcibly impressed on the mind of the viewer. Leaving the historical case of Michelangelo's Ricetto and the attempts of early modern viewers to make sense of it, we touch here on a fundamental question in human cognition: how does the human mind make sense of, articulate or conceptualize sense perception? Can we say that perceptions of buildings are influenced by geometrical or numerical proportion, or that they resemble human faces? Does it still make sense to argue that the best conceptualization of architecture is in terms of mathematics or anthropomorphy?

Kant addressed this problem in the *Critique of Judgment*, published in 1790, which combines his critique of aesthetic judgment with that of teleological judgment. I will not go into detail here, but just want to discuss briefly section 59, where he defines what he calls *Schematismus*: to decide, by an act of judgment, how to define sense perceptions. To illustrate this cognitive process he calls on the rhetorical concept of *hypotyposis*, describing it as *Versinnlichung*, making an abstract concept visual

or perceptible by clothing it, filling it, with sensuous experience.

Architecture plays an interesting role in Kant's thought. He rarely wrote about it, with a few notable examples such as citing Saint Peter's as a case of the sublime in his early essay on the sublime (Kant 1905–1912: 239). His late work, however, is full of architectural metaphors, which structure his presentation of his system in the three Critiques. *Schematismus* as used in the *Critique of Judgment* is also a metaphor with strong architectural connotations: the filling in of a structure with material and ornament.[8]

In this context he does not mention proportion or anthropomorphy, but I think we are justified in presenting Michelangelo's drawings, and the attempts we have discussed so far to make sense of the perception of the Ricetto, as instances of Kantian schematism, of *hypotyposis* in Kant's adaptation of a rhetorical strategy into a way of understanding what goes on in the mind when people try to make sense of their perceptions.

But there is also another way of connecting Kant with the reactions to the Biblioteca, and in particular Danti's presentation of proportion as the visual manifestation of a body's fitness for purpose. The main type of schematism Kant discusses in the *Critique of Judgment* is that of teleology or *Zweckmäßigkeit*. According to him the appearance and structure of natural organisms and their parts — eyes, human bodies, the claws of birds, and the fangs of wolves — can only be fully understood if we consider them not as contingent aggregates of matter, but *as if* designed by God or nature, in the neo-Platonic sense of *natura naturans*, with their purpose in mind: their structure is one of fitness for purpose. In the case of natural organisms there is no such prime creator, according to Kant, but to understand them, the human mind uses the concept, or *schema* in his terminology, of teleology or fitness for purpose. It can only grasp why the human eye looks the way it does, its shape and organization, if it knows that its purpose is to function as the organ of visual perception. In the case of art, however, there is the artist, the prime mover or *auctor intellectualis*, who has conceived the work of art with its end in mind.

It is this Aristotelian, objective fitness for purpose which Kant takes over, but changes into a concept, a hypothesis to make sense of human perceptions of the natural world and art. I would indeed argue that according to the *Critique of Judgment* there are two fundamental groups of schematisms: a mathematical one and an organic one.[9] Peter Kidson's statement that the medieval use of, and search for, proportional systems is an expression of the first group: the belief that all forms can ultimately be expressed in number illustrates such mathematical schematism (Kidson 1997). The very widespread human tendency to speak of works of art as if they were living beings may be considered a representation of the second group. The use by Pevsner, Ackerman, and Brothers of empathetic reactions to the Ricetto mentioned at the opening of this paper are also examples of the second group, in that they all attribute characteristics of human life and emotions to stone forms. And

again, we might return to Michelangelo's drawings as suggestions of this double way of trying to understand perception: in either mathematical or organic, that is, anthropomorphic, terms.

## Conclusion: Wittkower on movement in mannerist architecture

One of the very first essays Wittkower wrote, his 'Das Problem der Bewegung innerhalb der manieristischen Architektur' of 1933, bears on the issues presented here (see author's translation in the Appendix).[10] It is about movement in Mannerist architecture, and discusses among other works of architecture Giuliano da Sangallo's Gondi Chapel in Santa Maria Novella of 1503–1506, a model for the Ricetto, as Cammy Brothers has recently argued (**Fig. 3**; Brothers 2008: 191).

Of the triumphal arch motif framing the altar, Wittkower wrote that each pilaster carries its own architrave, but that it is unclear to which bay, the outer or the inner, the inner pilasters belong. This ambiguity is strengthened by the egg-and-dart list running unbrokenly above them. The tectonic ambiguity of these pilasters creates a feeling of movement — not in the building, but in the viewer, whose gaze cannot settle. When the viewer's eye follows one set of directions it is confronted with a contradictory set. Hence, Wittkower concludes in an ambiguous formulation which is typical of the aesthetics of empathy, 'a moment of movement is inherent in the architecture'. This unsettled conflict of directions leads to 'an oscillating emotional state', characteristic of unsettled times such as the 1530s and 1540s 'with their desperate need for clear solutions'.[11]

It is totally unlike Wittkower's post-war work. Like Le Roy's description of the colonnade of the Louvre, it is an attempt to put into words the experience of architecture by drawing not on the scripts or narratives of proportion or the orders, but on the physical experience of architecture as movement and animation. It is, in fact, an exercise in the aesthetics of *Einfühlung*, of the animation of lifeless objects by endowing them with the emotions and sensations of the spectator, about which Wittkower's first teacher, Wölfflin, had written so eloquently in his *Prolegomena to a Psychology of Architecture*:

> Physical forms possess a character only because we ourselves possess a body. If we were purely visual beings, we would always be denied an aesthetic judgment of the physical world. […] We have carried loads and experienced pressure and counterpressure, we have collapsed on the ground when we had no longer the upward pull of our own bodies, and that is why we can appreciate the noble serenity of the column and understand the tendency of all matter to spread out formlessly on the ground. (Wölfflin 1994: 151)

After the war, Wittkower would react completely against this approach, both against the aesthetics of *Einfühlung* and the notion of pure form. But we can see, both in
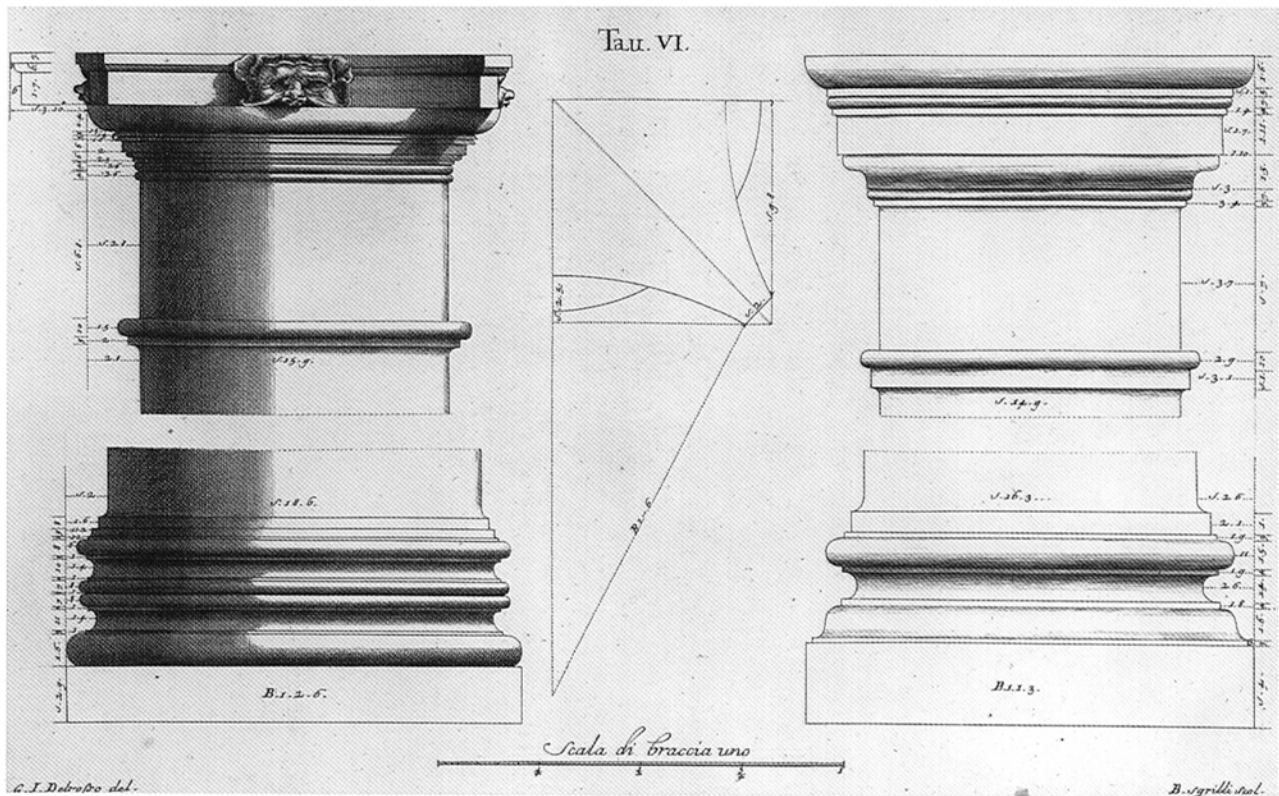
269   Laurentian Library, vestibule, engraving of capitals and base (from Giuseppe Ignazio Rossi, *La Libreria Mediceo-Laurenziana, architettura di Michelagnolo Buonaroti*, Florence, 1739)

Fig. 3: Giuseppe Ignazio Rossi, *La Libreria Mediceo-Laurenziana, architettura di Michelagnolo Buonarotti*, Florence, plate VI.

the 1933 essay and in *Architectural Principles*, two ways, albeit very different ones, of coming to terms with the epistemological challenge classical architecture in general, because of its absence of iconic elements, and proportion in particular, because of its abstract and general character, pose to the viewer: how to make sense of, how to articulate, visual perception. And interestingly enough, Wittkower draws on both large categories of *Schematismus* that Kant had distinguished: in the 1933 essay about movement in architecture, he draws on anthropomorphy and empathy; in his mature *Architectural Principles*, on the mathematical approach of proportion analysis. But in both cases, he, as did so many other thinkers about proportion, tried to make sense in artistic terms of what is ultimately an epistemological problem: how to understand sense perception.

The argument I have presented here starts from the ambiguity presented by Michelangelo's sketch. Is he thinking of the human face in terms of architectural structure, or of architectural form in terms of the human face? The reactions by early modern viewers to the puzzling singularity of the Ricetto illustrate two ways in which all human viewers try to make sense of what they see: by assuming proportional systems, even if there is no clear, objective indication for them; or by assimilating architecture with other forms of human communication, in particular language and rhetoric. The second tendency would lead to the aesthetics of empathy, which

is still very present in recent comments by the historians Pevsner, Ackerman, and Brothers. In the second part of my paper, moving from the historical reactions to aesthetic and epistemological aspects, I argue that, contrary to the view proposed by Wittkower in *Architectural Principles*, the impact of Empiricist thought on proportion theory, or architectural theory in general, did not result in an increasing subjectivization of architectural beauty. Instead, as shown in Le Roy's account of viewing the Colonnade of the Louvre, it led to a change in how architectural beauty was conceived: not as an inherent, objective quality of the building, of which proportional systems are one of the chief manifestations, but as a sensation of beauty resulting from the fit between the object perceived and the human mind. Kant would take this argument much further. In his *Critique of Judgment* he argued how the human mind needs *Schematismus*, filling in concepts with sense perception, to make sense of perception, and that two major assumptions are needed for the mind to achieve this: that of teleology and that of mathematical structure. Kant's argument thus offers the most radical answer to the question raised in so many of the essays in this volume: why do viewers attribute proportional systems to buildings. They do so not because of an inherent mathematical quality of the building, but because it helps them to make sense, to put into words and conceptualize, what they see. Ultimately proportional systems are constructions of the mind.

Fig. 4: Giuliano da Sangallo, Gondi Chapel, Florence: Santa Maria Novella, 1503 (photograph: Wikipedia Commons).

Appendix

The Problem of Movement in Mannerist Architecture, by Rudolf Wittkower[12]

Translated by Caroline van Eck

Whereas the questions of mannerist painting may be considered to be largely solved — not in the least thanks to your fundamental work, dear Professor[13] — there is far less agreement until the present day about the character and essence of mannerist architecture. Indeed, ruling opinion only attributes mannerist characteristics to painting and sculpture, but not to architecture.

It is far from me to want to propose a complete methodical solution to the entire problem of mannerist architecture in a few pages. Putting aside an analysis of the mannerist feeling for mass, mannerist proportioning, and mannerist architectural ornament, we will only investigate the problem of specifically mannerist movement in architecture, a problem that takes a central position in this complex of questions. And we should also renounce

from enumerating all possibilities of mannerist movement — we can do no more than to uncover a fundamental law in its main manifestations.

I will ascend from the particular to the general. The general should be inferred from the analysis of a few buildings.

1. The altar architecture of the Capella Gondi in S. Maria Novella (Florence) by Giuliano da Sangallo, 1506 [**Fig. 4**]. An architecture of triumphal arches, in which every pilaster carries its own entablature. The inner pilasters are the borders of the outer bay, and are characterized most clearly as belonging to the outer bay by the unbroken profile in the zones of the pedestal, capital and architrave. The inner pilasters are therefore in each case an integral part of the outer bay. But the indications are no less unambiguous to consider them as frames for the inner bay. The triangular pediment brings them together in a *closed aedicular architecture*. The cornice with its ovolo that runs unbroken over the isolated entablatures makes this clear.

When one reads this architecture one cannot decide about the function of the inner pilasters. One doubts to
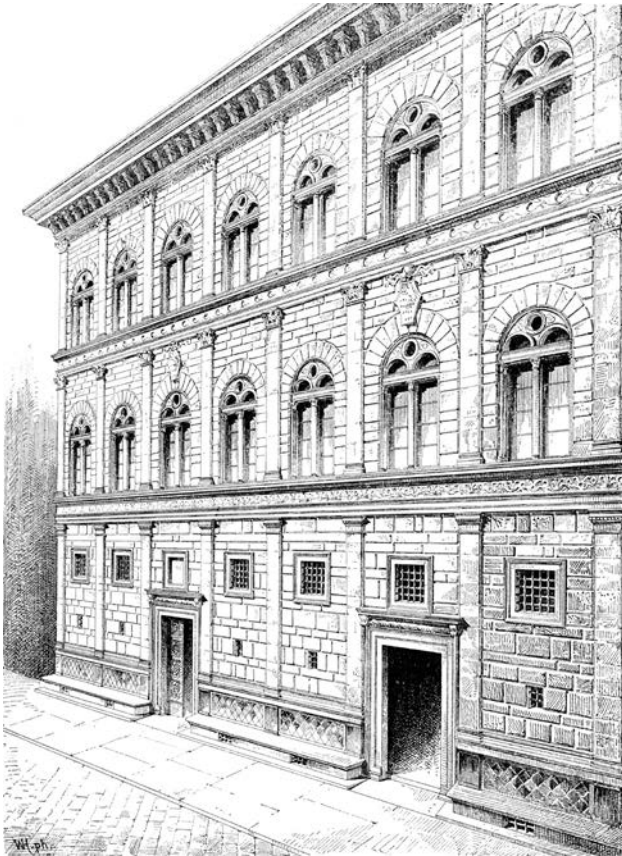
Fig. 5: Leon Battista Alberti: Palazzo Rucellai, Florence, 1446–1451. Drawing of the façade from Wilhelm Lübke and Max Semrau, *Grundriß der Kunstgeschichte* (Esslingen: Paul Neff Verlag, 1908).

Fig. 6: Carlo Maderno: Santa Susanna, Rome, 1585–1603. Photo: Wikipedia Commons.

which part they should be related. In every attempt to follow the indications given by the architecture in one direction, the opposite claim is made as well.

In the architecture itself there is therefore a moment of movement. It is not directed unambiguously, but of such nature that the gaze is not compelled to travel from one direction to the other.

If one wants to define this kind of movement, one could call it unstable. This unstable movement resides here in the double functional meaning of the inner pilasters. Considered from the bays this double functional signification means that the borders of the bays are made less clear, since one cannot decide whether the inner pilasters belong to one or the other bay.

It is necessary to bear in mind that this impression of unstable movement, generated by the double function of an architectural member, is fundamentally different from both the Renaissance and the Baroque. Consider next the order of the Palazzo Rucellai [**Fig. 5**]. Here all bays are formed in a completely equal manner. The building itself therefore does not take sides in the question, to which bay one relates a pilaster. This mechanical series of equal accents is essentially immobile, and rests in itself.

Just as little as one can discover in the Palazzo Rucellai an unstable motor generating movement in the possibility to relate every pilaster to one or the other bay, since

the architecture itself does not offer any indication, just as much one would err in the case of the Capella Gondi if one would ignore the precise indications offered by its ordering.

One could consider Maderna's façade of Santa Susanna in Rome (1597/1603) as a typical Baroque solution [**Fig. 6**]. It is perhaps the finest case of staggered walls with an order in movement. Every difference in protrusion or recession of the walls corresponds to a bay. The staggering of the walls and the articulation of the bays are therefore in perfect harmony with each other. Every bay displays on its exterior and interior a clear demarcation that belongs clearly to it. On the spots where two bays clash in the transition from one part of the wall to another, two articulating members are placed next to each other as a result.

Instead of the mechanical series of the Palazzo Rucellai the façade of S. Suzanna is based on a dynamic-vital centring: the bays become gradually broader towards the centre, the transition from pilaster to column, the increasing loosening of the intermediate wall parts — all this results in an ascending and descending movement, a concentration of energy in the middle, and a relaxation in the outer parts. The clear legibility of this unambiguously directed movement is guaranteed by the clearness of the demarcations between the bays.

Because of the staggering of the walls a neutrality towards the demarcations between the bays as in the Palazzo Rucellai is no longer possible here: the border

between each bay must now be precisely determined. In both cases — the Palazzo Rucellai as well as S. Susanna — the result is the same from the perspective of the bays. In both cases interval and order are clearly determined and unambiguously legible: in the first case by means of the complete identity of unities that repeat themselves indefinitely, in the second by means of absolute differentiation of closed unities that can be isolated. Whereas in the motionless system of the Palazzo Rucellai all indications on the relation between bays and order is absent, these indications are given with all clearness in S. Susanna's moving system of staggering.

In this manner the exceptional character of the unstable movement in the Capella Gondi, based on the double function of its pilasters, is clearly set off, both against the immobility of the Renaissance and the constant movement in a direction of the Baroque.

7. The façade of S. Giorgio de'Greci after the model by Sante Lombardi, Venice 1536 [**Fig. 7**]. The ground floor is divided in the sense of the triumphal arch scheme, that is, the outer pilasters have isolated bondings, whereas over both the middle ones the curved entablature has been continued. On the second floor the inner pilasters are drawn to the outer bays by means of an aedicular architecture, and the centre appears as the part of a wall without delimitation — one could say as an open wall part. The third floor, consisting only of the middle bay, draws the pilasters together again over the centre. Pilasters that stand on top of each other are thus bound in different directions. As a result closed bays (that is, clearly ordered ones are) are thus placed over open ones (that is, bays whose limits result from the order of other bays) — and vice versa.

Here it is impossible to deduce similar, superimposed bays in the same axis. The clear vertical layering of similar bays has here been destroyed through the reversal in meaning of superimposed ordering elements. One could call this a principle of inversion.

This inverted relation of the order in superimposed floors impedes an unhindered wandering upwards and downwards of the gaze; the eye is led abruptly from one point to another. The movement that is thus expressed can again be characterized as unstable.

The expressive value of both principles, of double function and inversion, is completely adequate. In one case the double signification is restricted to one member of the order, in the other it is articulated in two, three, or four superimposed members. The double function extends only over one floor, the inversion always over more than one. We can therefore define the double function as the motor of horizontal unstable movement, and the inversion as the motor of vertical unstable movement.

The examples from the Renaissance and Baroque can document that neither period used inversion. Both in Palazzo Rucellai and in the façade of S. Susanna superimposed orders have equal meanings. And therefore one reads in the vertical axis of these buildings an unambiguous superimposition of identical bays.

3. The façade of the Biblioteca Laurenziana. Michelangelo, 1524 ff [**Fig. 8**]. The series of windows in

Fig. 7: Sante Lombardi: San Giorgio dei Greci, Venice, 1536. Photo: Matthew A. Cohen.

the Libreria — we will only speak of these — is located in a deeper layer of the wall than the closed part of the wall over it. The wall layer of the windows is perceived from below as the demarcation of space. The mouldings here appear as ordering systems that are simply multiplied, so that one could detach them from the wall as if they were a net. But the mouldings form an homogeneous mass with the closed part of the wall in the upper zone. This forces one to see them also as the remains of a wall layer that had been placed in front of them, a layer from which three triangles have been cut out in such a way that only thin sides have remained. Where one saw at first a wall with an articulation by means of mouldings, one now sees remains of a wall and parts — 'holes' — in between, that have been taken out of the wall.

The representation therefore topples over into its opposite every time one tries to read the construction from below to the top or from the top to the bottom. It is therefore fair to say that the wall itself is subjected to the principle of unstable movement.

As in the case of double function and inversion this can be called an inversion of meaning. Before, this consisted of a change in direction in the way the order bonded its parts. Here it consists of an inversion of the function of the wall: what appeared to be a wall, functions as an incrustated layer, what appeared to be a moulding, works as a wall, and

Fig. 8: Michelangelo Buonarroti: Biblioteca Laurenziana, Interior of the *Ricetto*, started 1524 (photograph: Wikipedia Commons).

vice versa. Just as double functions and inversions made it impossible to grasp clearly the way closed bays relate to each other, horizontally and vertically, here one cannot determine the limits of space. We will call this functional ambiguity, which is proper to walls, permutation.[14]

Here as well, it seems useful to refer to the handling of walls in Palazzo Rucellai and the façade of S. Susanna. Walls that enclose space develop in Palazzo Rucellai in one undivided, unified layer. The wall of the façade of S. Susanna is staggered, but every part of it is clearly intelligible, and continues in a unified manner through the entire building; here as well, the enclosures of space are clearly established.

In these three examples we only showed simple architectural relationships, which cause the impression of unstable movement.

The possibilities to vary and combine these simple principles are manifold. The ambiguity of an architectual member, order or wall is in each case decisive for the impression of unstable movement.[15]

We have found that the double meaning of horizontal order, the inversion of direction of the vertical connection between members and the obscuring of the function of individual layers of walls, all pull the eye of the viewer incessantly from one point to another. The tensions, which inhabit architecture, are unsolvable, there is no possibility of a final balance or release.

Impressions of unstable movement therefore result of necessity in an oscillating emotional state in the psyche, which actually appears desirable. In times when clear solutions are of the essence, a feeling of unease must result.

A situation that may be characterized as mannerist appears to be understood by means of the concept of unstable movement as outlined here.

If the ability of movement is simply an optical law of Mannerism, it should be possible to document its validity as well in the realm of the figural arts.

Lomazzo[16] states that the figure in movement is the real subject of painting. We should therefore test the results obtained in architecture above all in Mannerist representations of figures. The Mannerist principle of representing moving humans is the 'figura serpentinata' described by Lomazzo, whose reality occurs a thousand times in painting and sculpture between 1520 and 1590. On the basis of Lomazzo's statements we can define the 'figura serpentinata' as a double *contrapposto*, moving in an S-curve and comparable to a rising flame.[17]

A double *contrapposto* consists of movements that are in opposition to each other, the characteristic of a flame is its closed ascension, the flowing gradual movement without articulating breaks, in short: in its obscuring of structure. Accordingly, inversion and the indifference to structure of double function may be compared to the double *contrapposto*.

The means by which such obscuring of structure is achieved in painting are significant. 1) Balance appears as an unstable system of movements imported from outside instead of following a tectonics of gravity that inhabits the body: figures stand without being actually able to stand; instead of a clear division of weight between the legs it is left unclear which leg carries weight, and which one does not. 2) Drawings do not follow the actual form of the body; the structure of the body is subjected to a rhythm of lines that makes, hides and equalizes everything. 3) Metallic and glassy colours result in a unifying of surfaces without any caesuras. — All these individual elements carry an unstable character with them. The *figura serpentinata* is the figural concept that excites impressions of unstable movement.

The painterly principle corresponding to that of permutation in architecture can easily be found in the Mannerist conception of space. Oscillating between surface and depth has often been painted in Mannerist painting. Movements of bodies that create space are contrasted with the planar treatment of the layers of bodies, the treatment of backgrounds, etc.

We thus seem to have documented the identity of the mentality of Mannerist painting and architecture. The *figura serpentinata* and the dualist conception of space in painting correspond in architecture to the laws of double function, inversion and permutation. They give order and walls a double meaning and thereby evoke impressions of unstable movement.

If it thus appears plausible that only Mannerist architecture is defined by impressions of unstable movement, we need to discuss the historical-chronological problem as well in conjunction with this systematic result.

The expressive symbols of an 'oscillating emotional situation': double function, inversion and permutation, are

very old. It is not a coincidence that they were used in late antiquity. When similar situations recur in European art, one returns to these expressive symbols that had been formed in Antiquity. Antiquity did not only find the expression for calm sensibility and pathos, but also that of intermediate emotional states.

In occidental art the earliest individual examples of unstably moving buildings occur in the first quarter of the sixteenth century. Their number increases in the second half of the sixteenth century, to become increasingly rare in the early seventeenth century. But at the end of the seventeenth century and in the eighteenth century we find again more numerous cases of unstable movement in architecture.

The chronological picture is therefore completely at one with our experiences with Mannerist painting. At the end of the seventeenth century we can also observe a regeneration of Mannerist principles.

We have not touched on the question of Mannerist interior space. Is there also a specifically Mannerist sense of space, whose essence consists again in the impression of unstable movement? No doubt, such a Mannerist sense of space may be recognized. It exists when two clearly directed axes clash with each other and both exert their mutually conflicting claims.

But our aim here is not to attempt to give an overview of the systematic possibilities caused by unstable movement in interior spaces. May it be sufficient to suggest that the concept of unstable movement shows itself to be a useful instrument in the difficult question of the nature of Mannerist interior spaces.

Notes

[1] The literature on the Biblioteca Laurenziana is vast. See in particular Catitti (2012); Elam (2005); Hemsoll (2003); Lieberman (1985); Portoghesi (1964); Salmon (1990); Wittkower (1934).

[2] Bocchi (1974: 541): 'Le regole, in cui ogni arte ha fondamento, ancora da mezzani artefici sono osservate; ma l'eccellenza di rara industria da peregrino ingegno, e sublime dee nascere; come in questa admirabile opera del Buonarroto apertamente si conosce. […] E di forma quadrata questo Ricetto, circa xx braccia per ogni verso […]. In ciascuna faccia sono con raro giudizio divisate sei colonne, le quali mettono in mezzo alcuni tabernacoli, con architettura da gli altri variata, ma leggiadra, nobilmente, e mirabile. E la maniera gentile, e peregrina, e non più veduta altrove; ma da sovrano sapere ordinata, genera maraviglia in coloro, che più sono intendenti; e perche quasi ride in sua somma bellezza, e tanto più dirittamente si considera, egli pensar si dee, che siano i mezzi singolari, e perfetti, posciache tanto è lodevole il fine, che sempre esser dee sopra ogni cosa apprezzato. E come che le Colonne siano molto sottili in vista, e dalla misura dell'altre Architetture differenti, tuttavia, perche non è contraria la ragione, egli convien pur dire, che in questa condizione propria del Buonarroto, altra regola formar si debba, lodevole altresì, come quelle sono de gli antichi, che da gli artefici anno il consenso, e la lode guadagnata. Le mensole poscia, le quali nell'architettura sono usate per ornamento, e perche sono leggieri, non possono sostener peso, come di colonne, e di pilastri, se bene si considera in questa fabbrica del Buonarroto […]. Elle adornano il luogo, poste al diritto delle colonne, e non reggono alcun peso: posciache le colonne si reggono in sul sodo del muro, come si vede, e le mensole sono di ornamento all'edifizio senza più'.

[3] C. Bartoli, *Raggionamenti academici* (Florence 1567), quoted in Hemsoll (2003: 58 n. 93): 'Se egli [= Michelangelo] ha variato dagli Antichi, egli ha tenuta una proporzione nelle cose sue, chi è molto grata a chi la riguarda, e diletta molto chi accortamente la considera'.

[4] Rossi (1739: xiii): 'Se bene ed attentamente la proporzione se osserva […] degli ornati, pianta e profilo della Nicchia, non vi ha principio di Dubbio, che si fa mostra di se une parte d'Architettura veramente perfetta; la quale con una sodezza inarrivabile, per una pura forza di proporzioni, senza l'estinseco abbigliamento di altri studiati ornamenti, si rende al segno maggiore avvenente'.

[5] But see also the careful deconstructions by Frank Zöllner (1987) and Christine Smith (1992: xi–xix, 98–133) of current assumptions about the presence of such ideas in artistic and architectural theory.

[6] Le Roy (1770, Essai sur la théorie de l'architecture: iv): 'l'agrément, la force ou la variété des sensations que l'Architecture nous fait éprouver […] étant donc les causes qui y produisent le beau'.

[7] I am much indebted to Maarten Delbeke for pointing out the role of Montesquieu.

[8] On the place of architecture in Kant's aesthetics, see most recently Guyer (2011: 7–19).

[9] On the attribution of life to inanimate objects as another variety of Kantian *Schematismus*, see Gaiger (2011).

[10] Also see the translator's note (Appendix, n 12).

[11] R. Wittkower, 'The Problem of Movement in Mannerist Architecture', Appendix to this essay.

[12] The original title of this essay is 'Das Problem der Bewegung innerhalb der manieristischen Architectur'. Wittkower wrote it in 1933 for a Festschrift on the occasion of Walter Friedländer's sixtieth birthday, but this was never published. The typescript is kept in the Zentralinstitut für Kunstgeschichte in Munich, which very kindly has placed a digitalized version of the original at the disposal of readers. Judging from its style, and in particular the insistent repetition of key words and phrases, it may be a transcript of a lecture. In its attempt to add a historical dimension that comes very close, even in its wording, to Warburg's theory of pathos formulas as the main locus of the afterlife of ancient art, to a Wölfflinian analysis of mannerist art in terms of perception and psychological affect, it offers an intriguing glimpse of Wittkower's early approach to architecture. For his intellectual background see Payne (1998); for the relations between his subsequent work at the Warburg Institute and the ideas of its founder see Van Eck (2012). Wittkower's footnotes are identified as '[Original note by Wittkower]'. The illustrations have been added for this translation.

[13] Walter Friedländer (1873–1966), the dedicatee of this essay, who taught at Freiburg University from 1914 to 1933, emigrated to the USA and then became a professor at the Institute of Fine Art in New York, where he was to the end of his career.

[14] In mathematics 'to permutate' refers to the mutation of given elements. In linguistics the concept is used when parts of a sentence acquire a function that is different from their original one. Since this kind of wall layering is essentially also such a functional transformation of meaning, we have adopted the term. [Original note by Wittkower]

[15] A similar argument can be found in Sedlmayr, *Die Architektur Borrominis*. 1930, p. 153. [Original note by Wittkower]

[16] P. Lomazzo, *Trattato dell'Arte della Pittura*, Milano 1584, p. 23. [Original note by Wittkower]

[17] Lomazzo, l.c. p. 23 u. 296. See also Birch-Hirschfeld, *Die Lehre von der Malerei*. Leipzig 1912, p. 36 ff. [Original note by Wittkower]

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