

a single reality through synthesis, recognizing too that the observance of technical requisites is indispensable to its formation.

The influence of the objective givens in the process of architectonic synthesis is thus relevant in that, instead of isolating the components of a practical order by reducing observation to a mere statement of those data (that which reduces a phenomenon to a naturalistic vision as if it were a simple biological manifestation), one can achieve an analysis where those factors are elucidated. Here is the second step to be taken.

It is undeniable that the polemical operation of the first masters of the modern movement, not sufficiently conscious of the cultural influences that were historically immanent in their doctrine, thus used technology more often as a symbol than as a necessary means—which it truly is—for clarification (and materialization) of the expressive language. Except, perhaps, Auguste Perret, who posed as an aim the practical problem of building correctly, very few considered this fundamental quality; nor did an architecture result which, even when its poetic motives were founded on rational grounds, was capable of resolving these premises into their ultimate physical instances.

For many years we have had an antipathy for eaves and cornices, and it appeared that only the flat roof could satisfy our designs; the vertical window appeared to us inadequate to express ourselves. All this, if it was justified within the limits of a courageous updating of the figurative language—as far as one can justify the idiosyncrasy concerning antique furniture—finished by making the weakest fall into formalistic aestheticism.

Such historical reasons, from the polemical birth of modern architecture, remain as an inevitable heredity governing the actions of contemporary architects, and even many of the youngest do not succeed in liberating themselves from it entirely.

One reacts to the cultural and practical conditions of the predecessors in a one-sided manner; either one is inspired by the forms of the past—national, regional, ethnic—on an imitative plane of taste alone; or, on the other hand, one is preoccupied by technical insufficiencies as explained by technocrats: both approaches are deluded about resolving the problem through a dissociated consideration of the two terms.

Nonetheless criticism is right to consider with interest the one and the other, if history is not only the mirror of exemplary and well-balanced actions, but also the chronicle of honest attempts. It is intended that the two steps forward that we have indicated separately, out of convenience of examination, not be dissociated in judging the architectural phenomenon, which fulfills its complete process only when one arrives at their synthesis.

Achieving this synthesis and in particular evaluating the historical context, without having to subject it to practical solutions dictated by the novelty of the subject matter, is something so arduous that it ought to be considered a sublime and most rare miracle. But only when this is realized will the work that manifests it merit the name of architecture, which is neither sculpture nor machine.

1956

The following essay, sequel to another of the same title and date, was written in winter of 1955–56 at the University of Texas in Austin, where the authors met while teaching a design studio. **Colin Rowe**, trained as an architect in Liverpool and afterward in art history under Rudolf Wittkower at the Warburg Institute, had left a teaching post in Liverpool to study under Henry-Russell Hitchcock at Yale on a Fulbright fellowship. Subsequently he accepted an invitation to teach in Texas from the school's new chairman, Harwell Hamilton Harris. **Robert Slutzky**, a painter, also came to Texas from Yale on Harris's invitation, having just graduated from Yale's fine arts school, where, as a student of Josef Albers, he had found himself reacting critically to Bauhaus orthodoxy and influenced by Gestalt studies in visual perception. In Austin Rowe and Slutzky formed part of a group of "Texas Rangers," architects and artists from the East Coast and Europe—including John Hejduk and the Swiss Bernhard Hoesli—who imported to an American backwater an original methodology of teaching architectural design based on configurational principles of form.

Rowe and Slutzky also shared an admiration for the work of Le Corbusier, whose reputation in the United States was still eclipsed at this time by that of Wright, Gropius, and Mies van der Rohe. In 1947, two years before Wittkower's *Architectural Principles in the Age of Humanism* appeared in book form, Rowe had published a seminal essay, "The Mathematics of the Ideal Villa," in which he made an original comparison between the geometric principles underlying the villas of Le Corbusier and Palladio. This essay, together with Wittkower's book and Le Corbusier's *Modulor* (1950), gave impetus to a new preoccupation with geometry and proportional studies among English architects. Wittkower closed his book with the remark that "[the theory of proportion] is again very much alive in the minds of young architects today, and they may well evolve new and unexpected solutions to this ancient problem." Dubbed the "New Palladianism," and more broadly the "New Formalism," the tendency was given further credence by another Rowe essay, "Mannerism and Modern Architecture" (1950). Drawing an unorthodox parallel to a period then being revived by historians like Pevsner, Rowe discerned mannerist tendencies in modernist buildings by Mies, Adolf Loos, and the Bauhaus architects, as well as Le Corbusier, on the basis of their cultivated "visual ambiguity" and "inverted spatial effects."

Meanwhile, in America at this date, it was the formalist art criticism of Clement Greenberg that held sway in aesthetic-intellectual circles, and Rowe and Slutzky's "most undeviating regard for formal structure . . . most remorseless and sophisticated visual logic" (as they characterize their own approach to architecture in the following essay) must also be seen within this context. The two "Transparency" essays were originally submitted to *Architectural Review*, which rejected them, presumably for their anti-Gropius bias. The first "Transparency" was ultimately published in *Perspecta* 8 seven years later, and became a basic text serving to dispel the positivist aura still clinging to "space-time" modernism and widely establishing the authors' distinction between literal and phenomenal transparency. The sequel, which deals primarily with surface configuration, was not published for another eight years, by which date the dominance of formalism was already under attack; this may explain its lesser reputation. Yet in its emphasis on facade manipulation and its "indiscreet" juxtaposition of modern and premodern examples, it directly anticipates the postmodernism of the 1970s and 1980s—a development in which Rowe, through his book *Collage City* (1978) and his teaching at Cornell University, was to play a major role.

From Perspecta 13/14 (1971), pp. 286–301. Diagrams of San Lorenzo by Daniel Libeskind. Courtesy of the authors and Perspecta: The Yale Architectural Journal.

Transparency: Literal and Phenomenal (Part 2)

Colin Rowe and Robert Slutzky

Can there be in visual space a simultaneous perception of two objects one behind the other? When I look through a transparent object do I really see a complete, unbroken surface? Or is this the case: I see only parts of the nearer object, and, through gaps in its surface, parts of the other object and from these fractional sections I mentally construct the two surfaces? Further: are we able to see two complementary colors as one behind the other even though both are stimulating the same retinal area? It is easy from common experience with transparent glass or gelatine to confuse the issue here. We are not referring to the "real space" in which, of course, one object is closer to the observer than the other. Our problem deals rather with phenomenal, visual space.¹

In a previous article we elaborated through a discussion of several Cubist and post-Cubist paintings certain meanings which have attached themselves to the word *transparency*. With the Bauhaus, Garches, and Le Corbusier's project for the Palace of the League of Nations serving as primary points of architectural reference, two kinds of transparency were distinguished, *literal* and *phenomenal*. Literal transparency, it was stipulated, could be experienced in the presence of a glazed opening or a wire mesh; but no definite conclusions as to the prerequisites of phenomenal transparency were presented. However, the examples of Garches and the League of Nations at least suggested circumstances which might be the cause of this manifestation; and thus it was implied that phenomenal transparency might be perceived when one plane is seen at no great distance behind another and lying in the same visual direction as the first. Consequently, it was further implied that among the causes (or, if one prefers it, the by-products) of phenomenal transparency there might be found a preference for shallow space, or where such space was not possible, for a stratification of deep space, so that the phenomenal as opposed to the real space could be experienced as shallow. But some of these suppositions are of so tendentious and so arguable a nature that in this present article it is proposed to consign them to temporary oblivion, and to concentrate attention, not upon the three-dimensional or spatial aspects of phenomenal transparency, but as far as possible upon its two-dimensional manifestations—upon phenomenal transparency as pattern.

Substituting the United Nations building for the Bauhaus, and Le Corbusier's Algiers skyscraper project for his villa at Garches, we might arrive at a parallel between the two former roughly approximate to the parallel which was maintained between the two latter. Thus the Secretariat of the United Nations may stand as a monumental example of literal transparency; and the Algiers skyscraper may represent almost a textbook example of that other transparency which Gyorgy Kepes defines as the capacity of figures to interpenetrate without optical destruction of each other.²

The published drawings of the Algiers block (*figure 1*) show a tower whose organization may be apprehended in a variety of ways:

- 1.** The eye may be engaged by the three horizontal bands which divide the structure into four definite areas.
- 2.** If these are overlooked or become recessive the eye may become absorbed with the cellular pattern of the *brise-soleil* and this pattern will gradually be felt to extend itself behind the horizontal bands.
- 3.** As the disruption of the *brise-soleil* pattern to the left of the facade becomes

apparent, the observer will construct a further figure which, in mediating the two *brise-soleil* grids, appears as a kind of channel cutting open the facade and connecting the *pilotis* of the lower floors with the incidents upon the roof.

- 4.** When this new figure is discovered to be interwoven with the three central floors of the building, the eye (or the mind) is compelled to provide further explanation and the observer comes to see the composition as a kind of E-shaped overlay imposed upon the "neutral" background provided by the *brise-soleil*.

These four variations are presented, not necessarily in the order in which they might be experienced, nor as excluding further interpretations to which they give rise, but simply with the object of establishing the basic figures whose presence a quite naive individual might detect.³

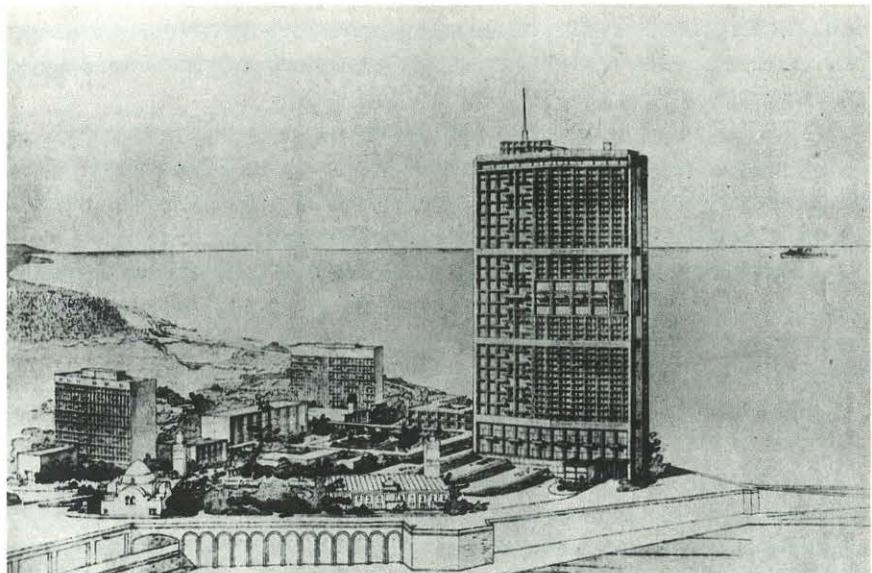
With the United Nations building and the Algiers skyscraper as almost classic exemplars of literal and phenomenal transparency, it would surely be possible to sustain a classification of modern architecture according to the absence or presence of these qualities, but to do so would involve unnecessarily tedious analysis. The two interpretations which have been laid upon the word *transparency* become apparent from the comparison of these two buildings, and only in order to reinforce this distinction of meaning does it seem necessary to include a further parallel—one between Pietro Belluschi's Equitable Life Insurance building in Portland, Oregon (*figure 2*), and I. M. Pei's Mile High Center in Denver, Colorado (*figure 3*).

The former is evidently an instance of literal transparency. Direct, matter of fact, a kind of lucid academic critique of the Chicago architecture of the 1880s, it shows few of those characteristics which Kepes lists as those of (phenomenal) transparency. It barely exhibits either overlapping or interpenetrating figures, perhaps little contradiction of spatial dimensions; nor does it offer the observer a means of "simultaneous perception of different spatial dimensions";⁴ and, except for its surface flatness, it is without equivocal meaning.

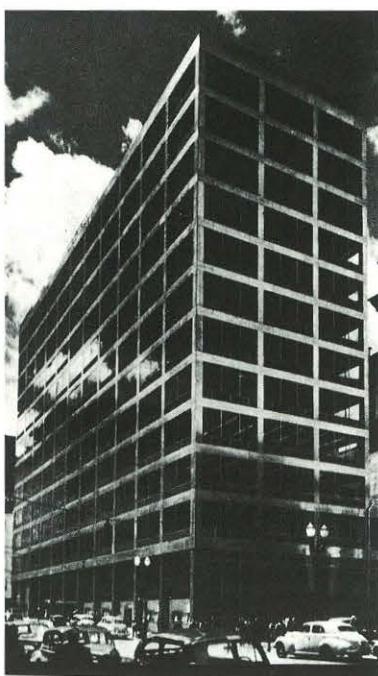
On the other hand, the Denver building, which displays a comparable regard for the structural frame and which is equally transparent in the literal sense, exhibits all of the foregoing ambiguities. Confronted with the Mile High Center the observer perceives:

- 1.** the vertical and horizontal gridding of a black structural frame;
- 2.** a further system of gridding provided by a blue subframe which is constituted by the window mullions and the horizontal transoms or sill members;
- 3.** that each of these frames provides a visual reinforcement of the other and that their overlapping leaves some doubt as to where the floor levels of the building are to be found.

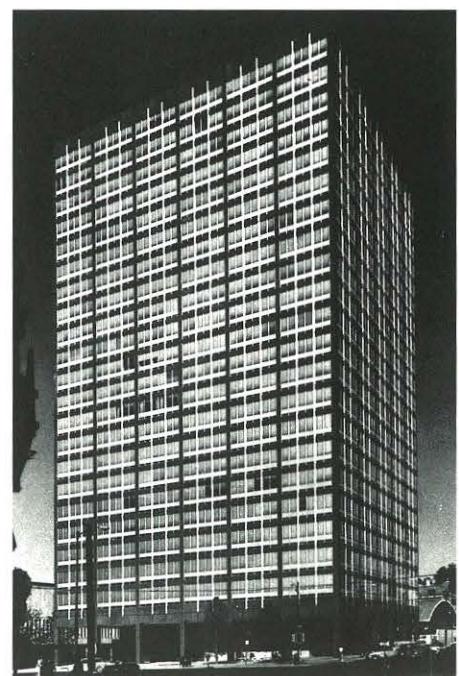
Further discrimination leads to the awareness that the black structural frame lies entirely in one vertical plane and thus to the color black a specific spatial depth is attributed. Concurrently, an attempt is made to attribute a similar specific spatial depth to the color blue—only to reveal that the horizontal members of the blue subframe pass behind the black frame, while its vertical members pass in front. Hence, an equivocal contradiction of spatial dimensions results from this interweaving or overlapping of two figures which are simultaneously apprehended; and in order to explain this situation, first the black frame and then the blue will become dominant for the observer. At one time he will accept the existence of the blue frame in the two distinct spatial layers which it occupies, but at another he will seek to interpret its color according to the logic of color displayed in the black frame. Thus he will come to suppress the modeling of the blue frame and attempt to see it as entirely flat, but in doing so he will be obliged to see either



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the horizontal or vertical members of the black frame as pressed forward, or pressed back, or warped by the tension which has been introduced.

This building is presumably an exceptionally succinct statement of a phenomenal transparency, but to certain types of mind the elegant post-Miesian achievement which it represents will suggest not only Chicago but also Italy. It is undoubtedly indiscreet to pluck such a building as the Farnese villa at Caprarola (*figure 4*) from out of its cultural background and to propose that it may be examined face to face with this recent office building from Denver. The functions of the two buildings are not similar; their structural systems could scarcely be more unlike; the social context, the technology, the economy, the content which each implies can scarcely be related. But for the present we are concerned neither with function nor structure (as generally understood), nor with the social context, technology, economics, or content; but simply with the manifestations which reveal themselves to the eye.

Presented with one of the two identical garden facades of Caprarola, the observer recognizes a building organized in terms of two major stories and he is quite shortly aware of:

1. the primary articulation of the wall which the orders and their respective entablature establish;
2. a further articulation of the wall which is effected by means of a sort of lattice of flat stone strips.

This stone latticework which forms a visual insulation between the pilasters and the plastic activity of the windows functions in two primary manners—as a subsidiary pilaster which serves the "real" pilasters and confirms the vertical punctuation of the facade, and as a frame which serves the bay, indicating a system of paneling and providing the facade with a number of horizontal emphases of an importance almost equal to that of the lower entablature.

Thus the imposition of pilasters upon lattice leads (as at Denver) to an uncertainty as to the floor level and to an ambiguity as to the basic unit of the facade. By implication of the pilasters there are two major horizontal divisions; by implication of the projecting window heads below and window sills above, both of which may be read as lattice, a tripartite division of the facade is deduced. The overlapping and interlacing of these two systems and the fluctuations of significance to which each gives rise can pass without comment, for at Caprarola, as at Denver, it is apparent that the observer finds himself in the presence of an architectural tapestry whose warp and woof are immediately apparent to the eye, but whose invisible threads his organizing instinct mentally reconstructs.

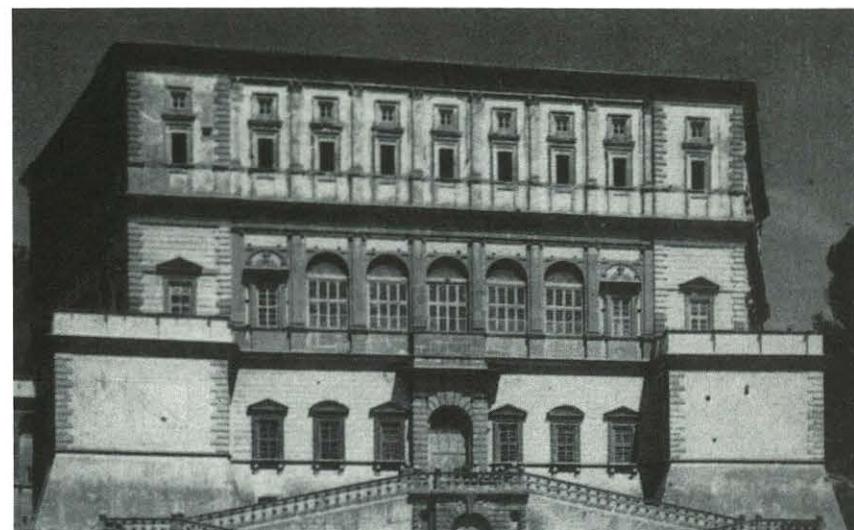
Now if Caprarola as well as Denver shows phenomenal transparency, we are obliged to conclude that, after all, it is neither a new, nor even a post-Cubist manifestation; and perhaps if we were to trace back the evolution of literal transparency down the long route leading from the United Nations building via such conspicuous monuments as the Bauhaus and the Crystal Palace, to the great glass and stone cages of the later Middle Ages, we might also discover in these buildings some evidence of phenomenal transparency in the nave of St. Denis (*figure 5*), for instance, where the triforium rather than appearing as an independent unit will seem to be an intersection of the clerestory and the nave arcade, sometimes being subsumed within the first, and on other occasions presenting itself as a projection of the second.

Thus almost any medieval or Quattrocento Venetian palace will reveal similar attributes to a greater or lesser degree, and the organization, although not the

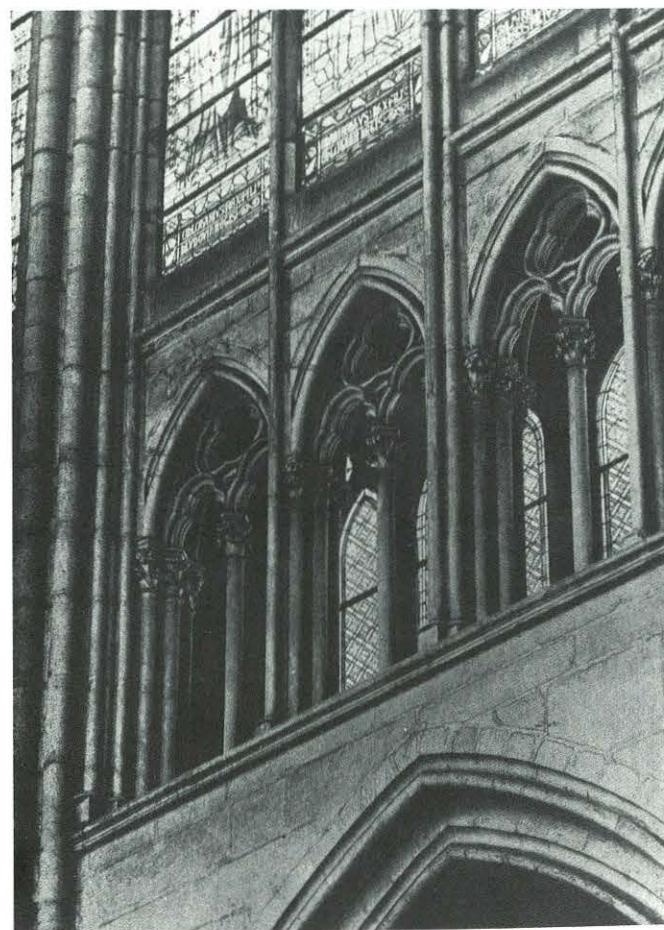
asymmetry, of the Ca d'Oro (figure 6) may be considered representative of the type. In the Ca d'Oro a basically bipartite facade is presented, where one center is determined by the loggias to the left, and the other by the cutting of three square windows through the plane of the wall surface to the right. Each of these two centers is invested with the control of sharply contrasted, clearly defined, and apparently symmetrical areas, which are isolated from each other by a thin, almost embroidered pilaster providing visual support for a heraldic trophy displayed on the second floor. But almost immediately after one recognizes this trophy, one proceeds to question it. It coordinates the space around itself and compels a symmetrical interpretation of the two windows between which it is placed, so that these windows are read together, and hence by means of this reading, the pilaster becomes, not the frontier between two opposed units, but the spine of an element straddling these units and demanding a revision of one's initial assumption as to the nature of each.

Once perceived, the uncertain valency of this pilaster quite undermines the primary response to the Ca d'Oro facade; and, as the element which it has now produced receives further attention, this becomes even more problematical. Since it is symmetrical on the second floor, one is predisposed to believe this element to be symmetrical on the first; and when discovered not to be the case, when the two windows flanking the pilasters on this floor are discovered to be unequal, then further figural variations are automatically sponsored. Now an attribution of symmetry to any one unit of the facade is discovered to be unwarranted, and each of the two major units acquires the ability to enlarge itself by absorbing this third; so that while the right-hand and left-hand sections of the facade are constantly augmented and diminished, infinitely more subtle relationships are now constructed, and, activating these, one might notice the schema provided by the rhythm of the projecting balconies and also the elaborating frilling of the cornice which, as a kind of arpeggio to the facade, provides a system of notation serving to intensify the polyvalent activity of the wall below. By these and other means, horizontal and vertical, and L- and T-shaped configurations are finally precipitated within the intricate formal meshwork, so that first one element and then another comes to function as a kind of gear, the apprehension of which sets in motion whole systems of reversible mechanics.

The permutations inherent in a structure of this kind are identical with those which issue from less eccentric Venetian facades, and of these the sixteenth-century Palazzo Mocenigo (figure 7) might be considered reasonably characteristic. Here, in a facade vertically divided into three, each division in itself is symmetrical, and the symmetry of each is reinforced in the center by triply repeated arches and on the sides by the elaborately mounted heraldic displays which are compressed between the windows of the *piano nobile*.⁵ However, under sustained observation these apparently clear divisions of the facade begin to change. First, it is noticed that the central division enjoys the capacity to extend itself at the expense of the other two; and secondly, that the sides show a certain tendency to infiltrate, to slide in behind the outer bays of the central motif; while, following these initial realizations, the constituents of the facade enter into a successive series of relationships. At one stage the outer windows become isolated slots emphasizing the extremities of the wall; at another this same quality of slot is transferred to the central arched windows; and, presently, the heraldic trophies assume essential significance as the bonding element between these peripheric and central developments. At this stage the facade is dominated by a system of double H's; but, as its underlying structure becomes elucidated, this composition is displaced by



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a cruciform element which is implied by the plastic development of the principal floor and the association of the superimposed central arches. But the process of subtraction and addition continues, and as the upper and lower stages of the palace are now noticed to show a paneling of the wall, and as the *piano nobile* does not sustain the paneling, by the discontinuity of elements, another figure is raised into significance. Just as formerly the heraldic trophies effected a bridge between the center and extremities of the facade, now the central windows of the principal floor become the bridging element which integrates these two areas.

These different readings abstracted from the Palazzo Mocenigo by no means exhaust the possibility of still further ones; but they are in themselves a sufficient exposition of the functional multiplicity with which each and every part of the design is endowed. Substantially the building is of Venetian origin; but the presence of certain features obliges one to presume the possibility of other influences also; and thus, on the top floor, because some Michelangelesque origin might be suspected for the profiles of the window pediments, one might also believe that something of the explicit nature of the overlapping and interlocking of figures derives from the same source.

Certainly in both the drawings and model of Michelangelo's proposed facade for San Lorenzo (*figures 8, 9, 9a*) everything that the traditional Venetian nuances of the Palazzo Mocenigo might obscure becomes clarified and exposed; and for this reason San Lorenzo requires little introductory comment. A wall surface modeling in low relief is articulated by means of a skeletal organization of columns and pilasters, by suites of moldings, string courses, architraves, and a pediment.

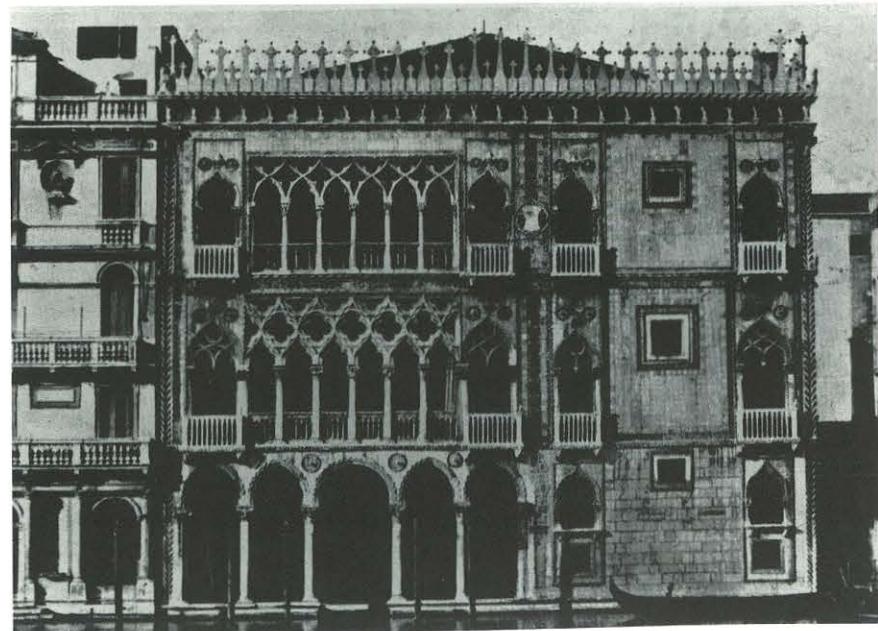
So much is obvious; but it now becomes necessary to note the transpositions to which this skeletal organization proceeds to lend itself. Thus, to allow the eye to travel sideways across the design, four vertical elements—the coupled pilasters and columns—might be seen as contributing to the existence of a grid and as defining three larger spatial intervals (*figure 10a*). But almost immediately this information is then subjected to "correction." These three spatial intervals, while they can appear identical in width, are, in reality, far from being so. The central is distinctly narrower than the flanking ones; and as a result, and in collaboration with the central pediment, a subversion of the initial reading is instigated. The inner sets of pilasters and columns now disengage themselves from the outer. They cease to participate in the apparent and "neutral" grid. Instead they begin to appear as subservient to a hierarchical and centralized situation; and thus, in place of the quadripartite interpretation of the facade, there develops a tripartite division (*figure 10b*).

Likewise, if the eye travels up and down this surface there is something comparable which happens. Here to be noted is an elementary contrast between a low and a high relief. Columns below turn into pilasters above, and, thereby, a basic horizontal division becomes enforced (*figure 10c*). But this, again, becomes an interpretation which cannot be sustained. The areas of emphatically high and emphatically low relief are separated by a contested territory (is it the attic to the one or the pedestal to the other?) which progressively insists upon its autonomy and which, accordingly, compels yet further revision (*figure 10d*).

But so intimate and manifold are the interrelationships of figure which inhere within this organization that seriously to insist upon any initial or dominant interpretation is to be quite arbitrary; and therefore, rather than try to impose a private version of the continuous oscillations of appearance which San Lorenzo provides, it might be more expedient simply to allude to some of the more notable figures which it displays.



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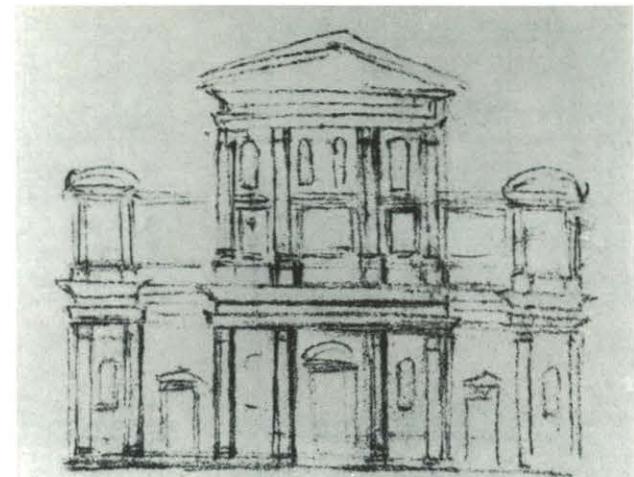
These include:

1. a fluctuating series of H-shaped figures which are promoted by the intersection of the narrow bays and the "attic-pedestal" (figure 10e);
2. a rotated H-shaped figure provided by the lateral banding of niches, plaques, and central aedicule—"window"—in the upper wall, and by the equivalent banding and gapping of doors and panels in the lower wall (figure 10f);
3. an expanding series of cruciform figures which are derived from the intersection of the "attic-pedestal" and the central bay (figure 10g);
4. a checkerboard reading which is created by three segmental pediments of the outer doors and of the upper "window" (figure 10h);
5. an inverted checkerboard which overlaps the preceding one and which is derived from the two circular plaques with their connected niches (figure 10i);
6. an inverted T-shaped figure generated by the impact of the pediment above and the high relief development below which comprises some kind of reflection of the volume of the building lying behind, and is presumably a residue of earlier studies (figure 10j).

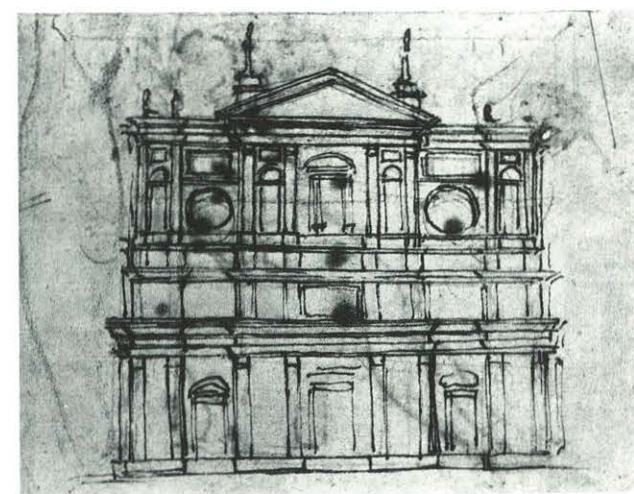
A quite random observation of San Lorenzo discloses the immanence of at least such configurations as these; but a more discriminating examination can discover more concealed and subtle modulations. The segmental pediments of the upper "window" and outer doors may again be noticed. These establish a triangle of interest; and, since the visual elements comprising this triangle are almost alike, there is a tendency to attribute to them a corresponding size. However, since one of these elements is smaller than the other two, there is a further tendency to assume it to be located at a greater distance from the eye; and thus, when seen in conjunction with the two doors below, the remarkable underscaling of the central "window" (together with the understructure of its immediate vicinity) introduces a curious tension between the readings of the horizontals and verticals in the wall plane. Providing an implication of depth, this underscaling suggests that beyond this vertical plane and visible through it there lies a perspective recession or an inclined surface to which each of these three elements is attached (figure 10k).

With this last and almost Cubist transparency which Michelangelo has introduced, specific analysis of San Lorenzo need not be carried further. It should be apparent that these phenomena which we have examined are of an order closely comparable to those which we might find in many modern paintings—for instance, in the later paintings of Mondrian; and although to erect a parallel between a Michelangelo facade and a Mondrian painting may at first appear as frivolous as a comparison between Caprarola and the Mile High Center, almost any representative of Mondrian's *Boogie Woogie* series might justify such a parallel. Thus, whoever chooses to examine with any care the incomplete *Victory Boogie Woogie* of 1943–44 (figure 11) will be obliged to extract from it a series of transparencies—of triangles, cross shapes, T's, and U's which the composition may be said to spill over in a manner similar to San Lorenzo.⁶

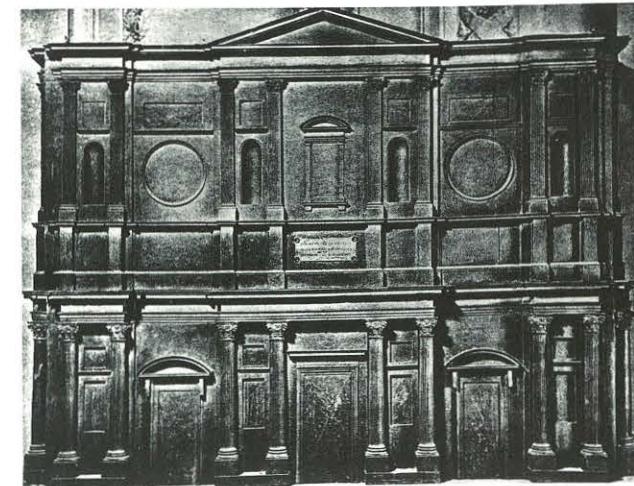
Obviously dissimilar as regards their content and their more overt formal manifestations, both *Victory Boogie Woogie* and San Lorenzo are at least alike in defying any accurate description of what they are. In San Lorenzo a lucidly symmetrical, monochromatic composition is saturated with alternative readings. In *Victory Boogie Woogie* an asymmetrical composition derives qualities of excitement from color, congestion, and the symmetrical nature of its individual parts. The readings of San Lorenzo are for the most part explicit; those of *Victory Boogie Woogie* are less expressed.



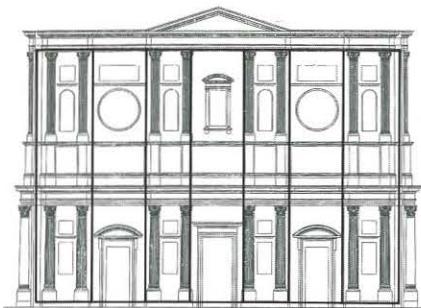
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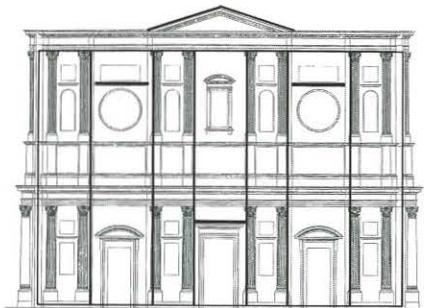
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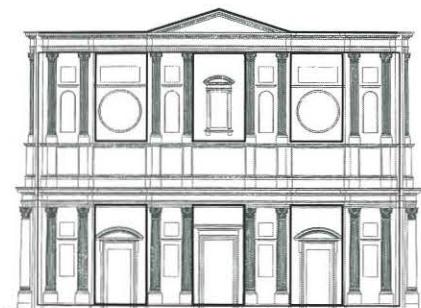
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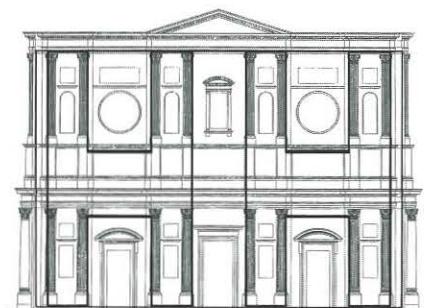
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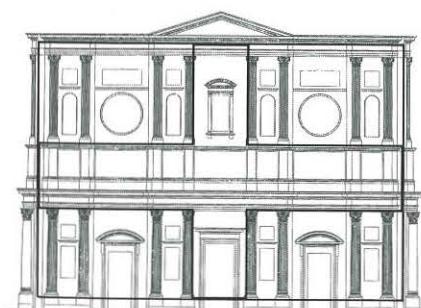
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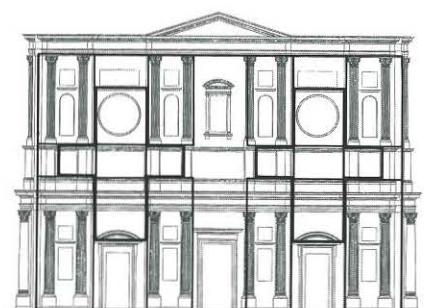
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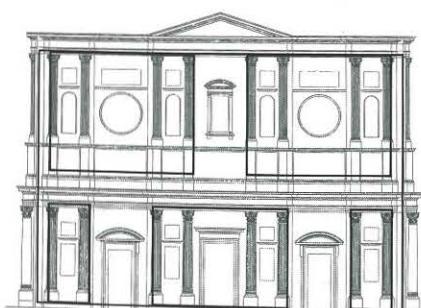
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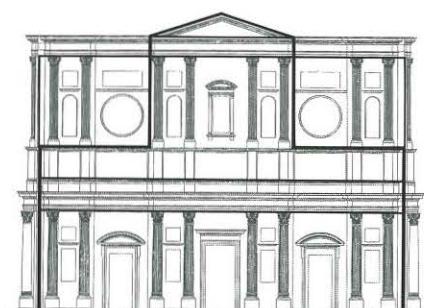
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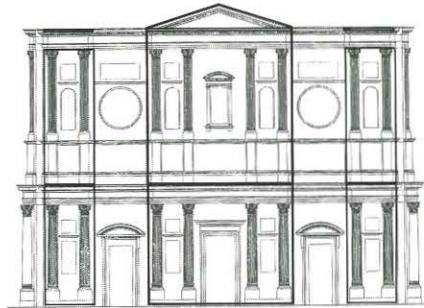
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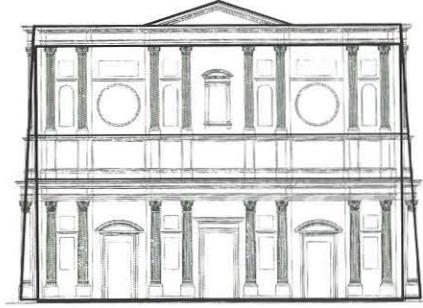
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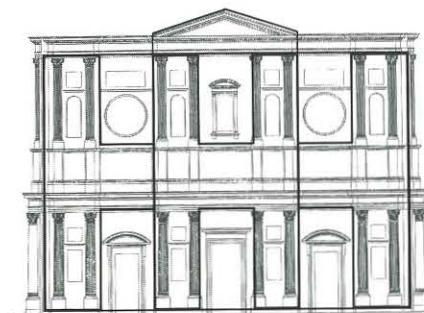
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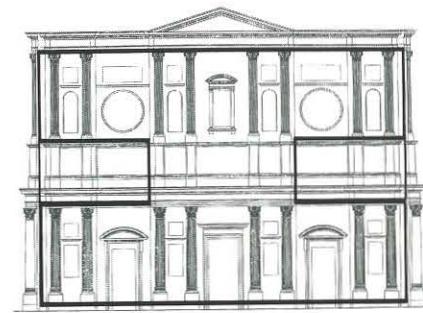
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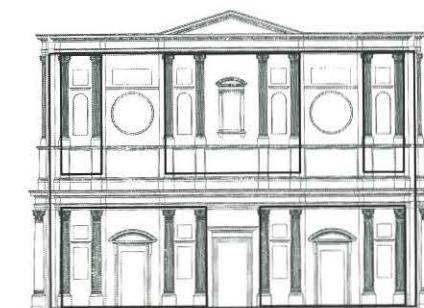
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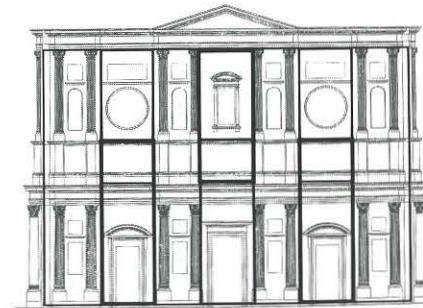
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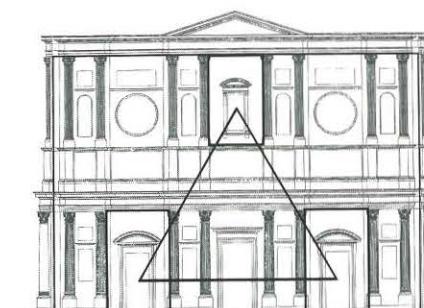
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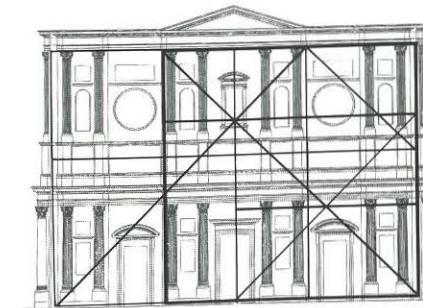
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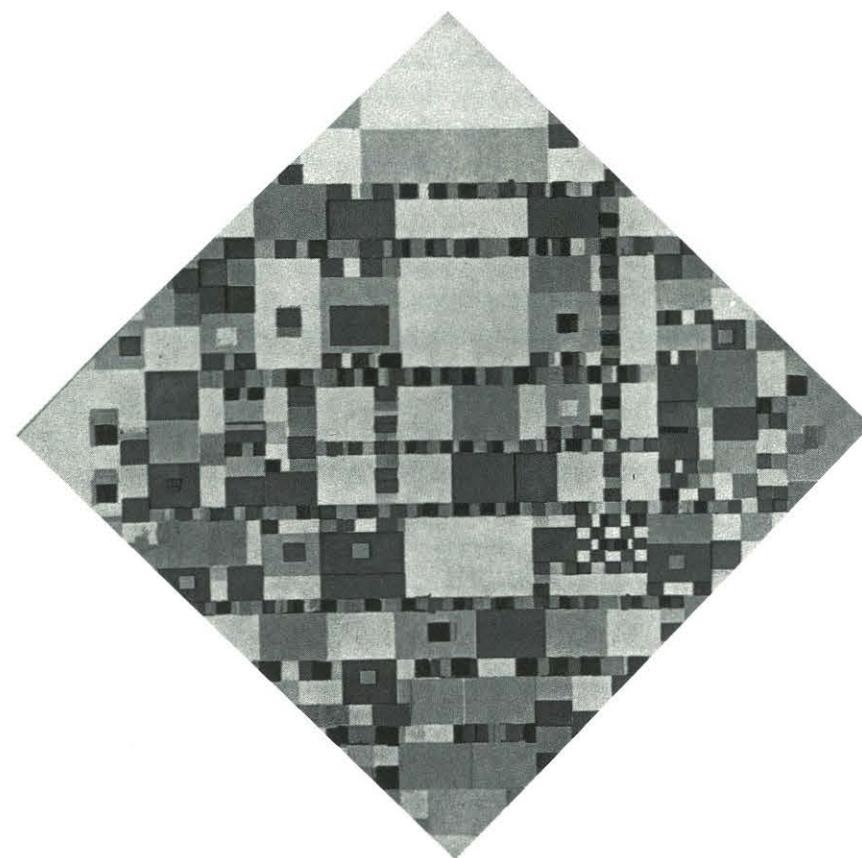
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The fluctuations of Michelangelo's facade are sudden; those of Mondrian's painting are less violent. In *Victory Boogie Woogie* the different areas of white gradually congeal to provide the central cruciform figure; and this figure slowly dissolves before a further interpretation in which the vertical axis provides a dominant element. But in both painting and facade there might be noticed a tendency of the different elements to build, to coordinate themselves, to amalgamate by means of proximity or common contour into larger configurations. Thus in *Victory Boogie Woogie*, while areas of red and areas of blue distributed throughout the canvas offer two alternative constellations, adjacent reds and blues show a tendency to withdraw from these systems and to unite into a series of larger wholes. In San Lorenzo these same propensities may be noticed. There, where a constellation of rectangular areas and columns and a rival constellation of circular and quasicircular elements are to be found, coalitions are constantly formed between the contiguous representatives of each system.

Again the facade and painting both show a disposition of frontally aligned objects which are arranged within a highly compressed space; both show these objects functioning as a series of relief layers for the further articulation of this space; and both show a framework syncopated by a staccato punctuation—in the one case of conventional architectural elements, in the other of small colored squares. In Michelangelo's design the wall plane which provides the mount, i.e., the "negative" background upon which these individual elements are displayed, has the ability to assume an opposite role, i.e., to become in itself a "positive" element or a series of "positive" elements; and in Mondrian's picture one is conscious of the white areas behaving in the same manner. Thus in any primary interpretation of *Victory Boogie Woogie* the white rectangles will appear to designate a basic ground, a rear surface which supports the yellows, reds, blues, and grays; but, unlike Michelangelo's wall, Mondrian's white plane can cease to be recessive and, by exerting a pressure on the figures which initially it appeared to subsume, it can become as highly charged an element or series of elements as they.

By not permitting the eye to penetrate any far removed space, this rear plane prohibits a resolution of either composition in depth, and thus in each case its presence may be said to disturb the possibilities of central focus. In each case by investing the space of canvas and facade with a lateral structure, this plane functions as a generator of peripheric emphasis and replaces any one focal point by a series of differentiated episodes. By these means it acquires an overall surface tension, becoming a kind of tightly stretched membrane which acts upon the different elements it supports and in turn is reacted upon by them. Imbued by these elements with tautness, it presses them further forward; and thus, by reason of the spatial constriction which it creates, this rear plane serves both as the catalyst and as the neutralizer of the successive figures which the observer experiences.

Comparisons, parallels, and analyses such as these could be prolonged almost indefinitely, but possibly enough has been said to indicate the constancy of the manifestation which in contemporary works Moholy and Kepes have recognized as transparency.⁷ In all instances their transparency—our phenomenal transparency—has taken place within a highly abstracted and intellectualized work of art; and in every case it has been the product of the most undeviating regard for formal structure, of the most remorseless and sophisticated visual logic. So much for the general context in which phenomenal transparency seems to appear; but for Moholy the transparency of meanings to which he responds in the writings of James Joyce is a method of building



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up a rich and manifold completeness. It is the literary analogue of the transparency revealed by Cubism—and this transparency, whether literal or phenomenal, is conceived by him to be a kind of symbol of space-time, which is mystically validated by the discoveries of science, and which, as a unique means of achieving cultural integration, is assumed to be inherent to the whole ethos of the twentieth century. But, if there is any substance to the preceding investigations, then transparency is not the exclusively post-Cubist development which he supposed; it is independent of either modern physics or Minkowski; it is not characteristic of the twentieth century alone; and it has no necessary correlation with any impending integration of culture. In fact, almost the reverse could be claimed; and San Lorenzo, the Palazzo Mocenigo, and Caprarola, at least, could be presented as the evidences of a Mannerist malaise, as the illustrations of "a self-conscious dissenting, frustrating style," as the indices to "a period of tormenting doubt and rigorous enforcement of no longer self-understood dogma," as the external effects of mental disquiet, disequilibrium, schism.⁸

Now, that these two widely separated interpretations of closely related phenomena—the one insisting on the virtues, the other on the dubieties, of phenomenal transparency—should exist side by side without any public embarrassment need not be hard to understand. In the first case, the mental block of so many modern architects against history is notorious; and, in the second, the unwillingness of so many art historians to enter into serious criticism of contemporary achievement is one of the more patent limitations of that species. But if we can allow that in all the instances discussed, the method of raising fluctuating figures into ambiguous prominence is a common denominator which all share, then it becomes a matter of some urgency to know how, in the face of two such radically different evaluations of this common denominator, any justice can possibly be done to it.

One may of course propose that a common method of organization does not necessarily predicate an identity of psychic content; that the pursuit of phenomenal transparency may be sane, creative, and responsible (a received idea of modern architecture); or that it may be deranged, capricious, and delinquent (a received idea of Mannerism); but, if this proposition is unacceptable, then we are faced with a serious critical dilemma.

The temptation is to escape it; and several attractive routes of escape do suggest themselves. Thus, we might, for instance:

1. choose to deny the existence of phenomenal transparency as a visual manifestation;
2. stigmatize the perception of phenomenal transparency as a product of hyperaesthetic sensitivity, or assert that its pursuit is no more than a formalistic side track of contemporary painting and architecture;
3. attribute a protomodernity to Michelangelo, Vignola, and the rest, or suggest that the contemporary architect who uses phenomenal transparency is Mannerist in spite of himself.

Escape route 1 is a congested road. Escape route 2 is a kind of spiritual *Autobahn* which permits its travelers the pleasing illusion that in some sequestered *cul de sac* Picasso, Braque, Gris, Léger, Mondrian, and Le Corbusier are all involved together in some esoterically purposeless rite. Escape route 3 drags us on a sinuous detour through a linguistically picturesque terrain. The use of the first we might condemn as irresponsible and myopic; the use of the second we might dismiss as philistine; while of the third we might say it is of no use. It is a kind of conquest of the problem by definition, that is, no conquest at all, for if we are at the liberty to attribute a

protomodernity—or a deutero-Mannerism—to all and sundry, then we make nonsense of the notion of modernity and whimsically subvert the categories of history. With all these escape routes ultimately closed, the problem therefore remains unilluminated, unsolved—at least in its wider implications. However, in its narrowest implications the mere *existence of the problem* at least suggests that phenomenal transparency does have a basis in common vision, and does imply, on our part, some kind of archetypal response toward it.

In considering phenomenal transparency in this way, entirely at a perceptual level, it has not been possible to overlook gestalt psychology, since the gestalt psychologists, in their analysis of perception, seem to have been preoccupied with just those questions which are central to any examination of the problem. "Configuration," "figure-ground," "field," "common contour," "proximity," "constellation"—sometimes inadvertently and sometimes consciously our vocabulary has been saturated with the gestalt phraseology, precisely because of the adequacy of its terms. Quite briefly, the Algiers skyscraper, the Denver building, Caprarola, the nave of St. Denis, the Ca d'Oro, the Palazzo Mocenigo, San Lorenzo, *Victory Boogie Woogie* look like some elaborate orchestrations of the rather curious little diagrams which are to be found so profusely scattered through any treatise on gestalt;⁹ and if in the presence of these diagrams we can overcome our primary amusement at what seems to be a discrepancy between a highly intellectual psychology of perception and its highly ingenuous visual examples, we might recognize these as exhibiting, in the most primitive form, the crucial circumstances which permit the development of the more complicated structures we have examined.

Thus, if we are not deterred by the combination of Art Nouveau and believe-it-or-not characteristics displayed by figure 12, it might be accepted as a representation of a basic figural ambiguity which has been consistently encountered. "Normally one sees a plain vase; it is only after a period of fixation that the profiles of two figures spring forth. What was once ground becomes figure and vice versa."¹⁰ Similarly in figure 13 identical conditions are induced. One sees a black Maltese cross imposed upon a white octagon; but, by reason of the spatial quality of the eight constituent triangles, one's experience of this diagram inevitably reverses itself.

The possibilities of such "transfiguration" are illustrated with rather more subtlety and perhaps with rather more direct architectural relevance in figure 14. In figure 14 a group of rectangles is presented, but "the figure may also be seen as two H's with certain intervening lines." These H's exist, but it is an effort to see them; and figure 14 in fact was set up by the gestaltists to prove precisely this—that in spite of the existence of the H's, "despite our extensive past experience of the letter H, it is nevertheless the articulation of the presented object (i.e., the rectangles) which determines what we shall see."¹¹

But with certain minor modifications of figure 14 the coexistence of the H's and the rectangles can become quite explicit, so that in figure 14a, we are conscious of both. In figure 14a, by stripping off the top and bottom closures of the rectangles, the H-figures become completely exposed, but the rectangles themselves survive as unavoidable inferences which the observer constructs by reason of identical length, proximity, and similarity of their ingredient elements. Preoccupation with the rectangles in figure 14a leads to a fixation upon the four lines which constitute their horizontal axis; and, because of their identity of direction, ultimately these are seen as the visible parts of one continuous line which is presumed to pass behind a solid matter whose area

concurs with that of the three rectangles. Thus, by reason of the breaking of this line, not only is an implication of depth introduced into a two-dimensional surface, but also the presumption as to the existence of the rectangles receives confirmation.

In figure 14b, a further modification of the same figure, all these activities become rather more manifest. In this diagram the behavior of the horizontal lines becomes much clearer. The observer is either disposed to see four horizontal lines each of which functions as the cross bar of an H and is therefore led to complete two further H-figures; or, alternatively, he is led to see one interrupted horizontal line which appears as a split running through the middle of a background plane; but, in each case, through an automatic interpretation of the presented object, he is led to provide it with a ground or to frame it within a field. Inside this field H's simultaneously function as the disengaging elements between dominant rectangles and also as the dominant figures themselves; while, as the observer's sensitiveness to the organization increases, it becomes apparent that the minor rectangles must also be built up and that further H-shaped figures with double vertical members must be accepted (figure 14c).

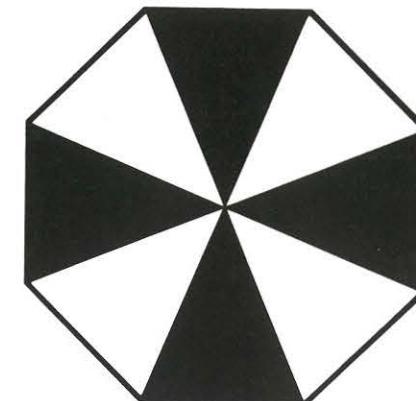
It is not necessary to say more in order to demonstrate the applicability of this last diagram to the facade of San Lorenzo or to that of the Algiers skyscraper; it is equally evident that the kind of perceptual activity which this diagram involves is of the same order as that which is exercised at a much higher level, with longer periods of fixation, in a painting by Léger or Mondrian; and in all these cases the figure-ground phenomenon which is exemplified may be said to be the essential prerequisite of transparency.

According to gestalt theory, while figure is generally seen as figure by reason of its greater closure, compactness, density, and internal articulation, and while ground is generally seen as ground by reason of its lack of these qualities, in the figure-ground relationship the ground, although it may at first appear anonymous, is neither subservient nor passive. As an environment imposing a common relationship on all that happens, it is also an enclosure containing figures which it lifts into prominence; and these, by reason of the prominence with which they become endowed, react upon the ground and provide it in turn with a figural significance. There is thus in figure-ground a double function inherent to each of the components. Each can be itself and its opposite; so that any specific instance of figure-ground is a condition of being of which the components are at once the product and the cause, a structure which becomes significant by reason of reciprocal action between the whole and its parts, and—one might say—an area of reference, qualified by and at the same time qualifying the objects which are referred to it.

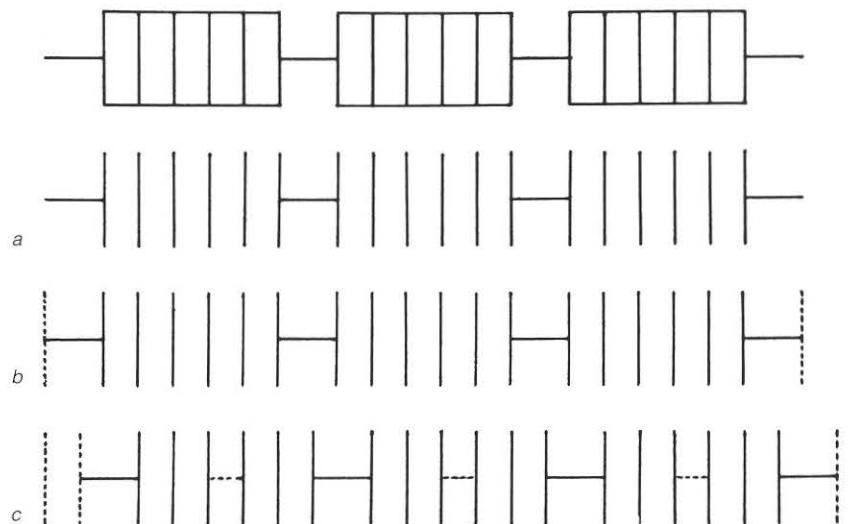
In complicated examples of figure-ground such as those we have examined, the ground obviously contains several figures, and these in themselves also function as subsidiary grounds supporting further configurations. Gestalt theory maintains that the observer organizes these discrete visual stimuli according to certain laws, which are stated as factors of proximity, similarity, direction, closure, experience, "good curve," "good gestalt," "common fate," "objective set," and the untranslatable *Prägnanz*.¹² "Gestalt theory," it is stated, "does not hold that the senses carry amorphous material on which order is imposed by a receiving mind," but attributes powers of discrimination to the senses, refusing "to reserve the capacity of synthesis to the higher faculties of the human mind," and emphasizing instead "the formative powers . . . , " "the intelligence of the peripheral sensory processes."¹³ In other words gestalt theory conceives the act of perception not as a simple stimulus-response reaction but as a process which might



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be characterized as follows: "constellation of stimuli—organization—reaction to results of organization."¹⁴ Further, gestalt supposes that mental activity and organic behavior are subject to the same laws, "that 'good shape' is a quality of nature in general, inorganic as well as organic," so that "the processes of organization active in perception somehow do justice to the organization outside in the physical world."¹⁵

But supposing the senses are endowed with "intelligence," with powers of discrimination, with organizing capacity; and supposing physical and psychical processes to be governed by the same rule. In themselves these hypotheses really seem to have very little to do with what appears to be the inordinate gestalt interest in phenomenal transparency, which it recognizes under a variety of names as "phenomenal identity," "double representation," "duo-formation."¹⁶ One is apt at first to consider this interest to be no more than a reflection of an intellectual style which has characterized the first half of the twentieth century, to regard it for instance as parallel to the critical literary interest in ambiguity disclosed by such studies as William Empson's *Seven Types of Ambiguity*, to the art-historical interest suggested by the reinterpretation of the sixteenth century, to the artistic interest implied by Analytical Cubism and so much of modern architecture. But although the preliminary gestalt researches into figural ambiguities do date from the years during which Analytical Cubism made of phenomenal transparency a principal method of composition, it must be recognized that something of the gestalt "taste" for figural ambiguities is related to the emphasis upon field.

For gestalt theory the existence of a field is a prerequisite of all perceptual experience. Consciousness of field, it is assumed, must precede consciousness of figure; and figure in itself is inconceivable in isolation. In this article attention has been directed toward visual fields alone, and gestalt theory does seem to have favored visual illustration of field; but obviously field as such must vary with the nature of the objects and/or perceptions involved. For instance, in the case of our apprehension of a tree the field may be provided by a mountain, or a lake, or the wall of a house, or any number of things; in the case of our apprehension of a poetic metaphor—in itself a field—the larger field may become a sonnet; in history a given epoch may endow with "field properties" the idiosyncrasies of the various figures which it supports. But in all these cases the field is assumed to be more than the sum total of the elements which it embraces. Genetically it is prior to them. It is the condition of their quality and the reason for their behavior.

It may now become possible to see that the gestalt interest in ambiguity is not merely arbitrary. The unstable, equivocal figure-ground phenomenon, whose fluctuations may be either sluggish or volatile, brings the supporting matrix, the field, into high prominence. Figure-ground is figure-field keyed up to a pitch of maximum contrast. It is field revealed as positive; and thus for gestalt it is the ultimate summary, the classic condensation of the field idea.

Notes

1. Wilhelm Fuchs, *On Transparency*, in W. D. Ellis, *A Source Book of Gestalt Psychology* (London, 1938), p. 89.
2. Gyorgy Kepes, *Language of Vision* (Chicago, 1944), p. 77.
3. "Intervention of the plastic sensibilities. All seemed to be implacably controlled by the succession of rational requirements. . . . The plan was rigorously symmetric. But by a further tracing of the Golden mean the posture of the facade has become asymmetric. The form seems to swell to the left then shift to the right. It is responding to the double call of the site. The cliff, the sea." From Le Corbusier and François de Pierrefeu, *The Home of Man* (London, 1948), p. 129. It is in these terms that Le Corbusier describes the fluctuating figures which the Algiers skyscraper provides.
4. Kepes, p. 77.
5. It is interesting to notice that the facade of the Palazzo Mocenigo (a refacing of an older medieval structure), although symmetrical in all its parts, is not in itself symmetrical.
6. The diamond is a result of a rotated square whose diagonals, formerly tending to be read as vectors inducing recessional perspective, now become an ideal right-angle armature stiffening that plane and investing the points, rather than the edges, with the capacity to act as terminals to the scanning eye. In this performance, a "gravity-free," buoyant, and thoroughly frontalized plane is established, exerting pressure from behind to any chromatic figuration placed upon it.
7. Laszlo Moholy-Nagy, *Vision in Motion* (Chicago, 1947), p. 350. Kepes, p. 77.
8. For these quotations see Nikolaus Pevsner, "The Architecture of Mannerism," in *The Mint* (1946), pp. 132, 136. They may be regarded as reasonably representative of a received idea.
9. Kurt Koffka, *Principles of Gestalt Psychology* (New York, 1935); Wolfgang Kohler, *Gestalt Psychology* (New York, 1929); L. Hartmann, *Gestalt Psychology* (New York, 1935); Ellis, *A Source Book of Gestalt Psychology*.
10. Hartmann, p. 25.
11. Ellis, *A Source Book of Gestalt Psychology*, p. 58.
12. See Max Wertheimer, "Laws of Organization in Perceptual Forms," in Ellis, p. 71.
13. Rudolf Arnheim, "Gestalt and Art," in *Journal of Aesthetics and Art Criticism*, no. 8 (1943), p. 71.
14. Hartmann, p. 100.
15. Arnheim, p. 73.
16. Phenomenal identity: Ellis, p. 147; double representation and duo formation: Koffka, p. 178.