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Harry Francis Mallgrave is Professor of History and Theory at the Illinois Institute of Technology. His 1996 book Gottfried Semper: Architect of the Nineteenth Century was awarded the Alice Davis Hitchcock Award by the Society of Architectural Historians. He is also the author of Modern Architectural Theory, 1673–1968 published in 2005.
As in the exposition of its doctrines of historical critique will be found more and more consoli-
dately, and the obvious symptoms indicate from ed with success. Evidently the struggle tends to
int to constitute reason as the sole judge of contrary, to appeal to the tribunal of sentiment
clarified by reason. We must now, therefore, and now, to work our doctrinal expositions in parallel with the critique of works executed around us.

The doctrine without an applied critique is abstract science; it is the absence of life. The critique without doctrine is an individual and momentary fantasy substituted for the law of eternity and humanity.

We want truth and life, science and action, theory and practice.

213 BOURGEOIS DE LAGNY
from “Salon of 1866” (1866)

Daly’s critique of the rationalist school took another perceptive coloration in the same year when the architect Bourgeois de Lagny, in writing for the newly founded journal *Moniteur des Architectes*, effectively linked the same rationalist school and its philosophy to the movement of French realism. The immediate object of de Lagny’s attack was the young architect Joseph-Eugène-Antoine de Beaujard, a devoted pupil of Viollet-le-Duc and later an important innovator in the use of concrete construction. But for de Lagny, also falling into the category of rationalist architects was Louis-Auguste Boileau, the architect of the cast-iron, Gothic church St.-Eugène (1854–5), and later of the famed Parisian department store, Magasins du Bon Marché (1869–79).

Architecture, unlike its sister arts of painting and sculpture, has not been engaged in those endless discussions of our day between idealism and realism, classicism and romanticism. These two artistic forms, which have their raison d’être in the other arts, are in architecture almost absorbed into a single line of thought. Architectural realism (or construction with the absence of art) has played only a very secondary role in the development of monumental art; and this latter art, when it is worthy of this name, is composed of ideals with regard to the state of civilization of each period and nation. It is not subject to the forms of realism or construction; that is, only to the extent that these forms correspond to the manifestation of feelings, ideas, and sensations that the architect wants to prevail through the use of marble, stone, iron, and other materials that usage and progress of the building-art put at his disposition. Monumental art even rejects these materials as improper to all serious and noble construction. Iron and cast iron, so widely used today, fall into this category. The architect employs them only in a secondary way in public edifices designed for a long duration, in those works destined to transmit to future generations the glorious moment of an epoch—monuments of popular belief, religion, race, or national significance.

Between the realism of construction and the idealism of architecture there are opposing goals that lead to very different means of execution. What the builder most forcefully reveals in his work—a good aesthetic—leads the architect to modify it. Beauty in architecture (in literature it is Chateaubriand who says it), beauty consists in choosing and hiding; choosing what manifests the grace of contours, the harmony of proportions, the elegance of forms, the originality of dispositions and effects; and hiding, on the contrary, everything that smacks of pain and effort, that takes away from majesty by constraining it, everything that shows a struggle with the material, a resistance of force and its weight. When architecture assumes this character, it belongs to those rude and barbaric periods of civilization, in which the human struggle with nature had not yet ceased, as seen in the Egyptian period of antiquity and the Romanesque period in more recent times. At the most one is permitted to use the architectural forms of those periods in our buildings where utility outweighs beauty, where the economics of public or private funds compel the architect not to give into the impulses of the imagination, and to treat an element of the disposition of the construction itself as an object of decoration.

214 EUGÈNE-EMMANUEL VIOLET-LE-DUCC
from “Style” in Reasoned Dictionary (1866)

Viollet-le-Duc did not wait long to pick up the gauntlet in what became the final stage of this debate. He responds to the attacks of Daly and others with two philosophical essays in 1866. In one—his entry on “Style”—in the eighth volume of his *Dictionnaire raisonné*—he now defines the term in very abstract terms simply as “the manifestation of an ideal based on a principle.” In his logical, almost mathematical precision, he has clearly moved beyond his earlier support of Gothic Revivalism and is attempting to define architecture in universal terms. Iron construction is not to be belittled; near the end of this essay, he announces that a new style must arise out of a new structural principle, “out of adherence to a law that is uncompeded by exceptions.”

We will speak here of style only as it belongs to art understood as a conception of the human mind. Just as there is only Art in this sense, so there is only one Style. What, then, is style in this sense? It is, in a work of art, the manifestation of an ideal based on a principle. [...] Thus, even while we recognize that a work of art may exist in an embryonic state in the imagination, we must also recognize that it will not develop into a true and viable work of...
art without the intervention of reason. It is reason that will provide the embryonic work with the necessary organs to survive, with the proper relationships between its various parts, and also with what in architecture we call its proper proportions. Style is the visible sign of the unity and harmony of all the parts that make up the whole work of art. Style originates, therefore, in an intervention of reason.

The architecture of the Egyptians, like that of the Greeks, possessed style because both architectures were derived by means of an inflexible logical progression from the principle of stability on which both were based. One cannot say the same of all the constructions of the Romans during the Roman Empire. As for the architecture of the Middle Ages, it, too, possessed style once it had abandoned the debased traditions of antiquity — that is, in the period from the twelfth to the fifteenth centuries. Possessed style because it proceeded according to the same kind of logical order that we have observed at work in nature. Thus, just as in viewing a single leaf it is possible to reconstruct the entire plant, and in viewing an animal bone, the animal itself, it is also possible to deduce the members of an architecture from the view of an architectural profile. (See the entry “Trait.”) Similarly, the nature of the finished construction can be derived from an architectural member.

215 EUGÈNE-EMMANUEL VIOLLET-LE-DUC from Lectures on Architecture, Lecture XII (1866)

The second response of Viollet-le-Duc, probably written sometime later in 1866 or shortly thereafter, is the twelfth lecture of his Études sur l’architecture. The lecture is astonishing if only for the designs of large iron-and-masonry structures that Viollet-le-Duc provides to the reader. This short excerpt does not do full justice to the nuances of his theory, but it represents his final resting point — his willingness to move beyond the historical past and embrace iron in the much-desired creation of a new style.

Hitherto cast or rolled iron has been employed in large buildings only as an accessory. Where edifices have been erected in which metal plays the principal part, as in the Halles Centrales of Paris, in these buildings masonry ceases to take any but an exceptional part, serving no other purpose than that of partition walls. What has nowhere been attempted with intelligence is the simultaneous employment of metal and masonry. Nevertheless it is this which in many cases architects should attempt to accomplish. We cannot always erect either railway stations, markets, or other immense buildings entirely of masonry, such buildings being very heavy in appearance, very costly, and not presenting sufficiently ample interior accommodation. A structure in masonry, regarded as an envelope protecting from cold or heat, offers advantages which nothing could replace. The problem to be solved for providing great edifices destined to accommodate large assemblages would therefore be this: To obtain a shell entirely of masonry, walls and vaulting, while diminishing the quantity of material and avoiding obstructive supports by the use of iron; to improve on the system of equilibrium adopted by the medieval architects, by means of iron, but with due regard to the qualities of that material, and avoiding the too close connection of the masonry with the metal; as the latter becomes not only a cause of destruction to the stone, but perishes itself very quickly when not left free. Some few attempts have been made in this direction, but timidly — for instance by merely substituting columns of cast iron for stone pillars. Iron, however, is destined to play a more important part in our buildings; it should certainly furnish very strong and slender supports, but it should also enable us to adopt vaulting at once novel in plan, light, strong and elastic, and bold constructions forbidden to the mason, such as overhanging projections, corbelings, oblique supports, etc. Is it not evident, for example, that while retaining the system of vaulting employed during the Middle Ages, the thrust of that vaulting might be resisted by the means represented in figure 37? The use of rigid shafts or cast-iron columns as oblique supports, is a means of which our builders have not yet thought, I hardly know why, for this system is fruitful in deductions. It somewhat contravenes the principles of Greek and even Roman architecture; but if we would invent that architecture of our own times which is so loudly called for, we must certainly seek it no longer by mingling all the styles of the past, but by relying on novel principles of structure. An architecture is created only by a rigorously inflexible compliance with modern requirements, while the knowledge already acquired is made use of, or at least not disregarded.

216 ÉMILE ZOLA from The Covered Market of Paris (1872)

Although this short passage from a novel of the writer Émile Zola falls outside of our chronological timeframe, it is nevertheless a fitting postscript to four decades of continuous discussion. As we have already seen (chapter 137 above), Victor Hugo in the second edition of Notre-Dame de Paris added his chapter “Ces tuves cloés” (“Those will kill that”), in which he spoke of the death of the (medieval) architecture at the hands of the printing press. The realist Zola reiterates this theme, only now it is the death of earlier conceptions of architecture through modern works erected in accordance with the realist spirit of the time. The Parisian church of Saint-Eustache — a quasi-Renaissance, late-Gothic church — was completed in 1532. Les Halles centrales were the famous iron structures that Victor Baltard erected between 1853 and 1870 to serve as the central marketplace for the city. The scene of this passage is a dialogue between two protagonists, taking place on a carriage ride through Paris. In the following text the ellipses are original.

This characterizing element will be the creation of form or ornament in architecture. Its purpose does not reside in the structural functioning of a building, but rather in articulating symbolically the function of the core-form, in precisely displaying all its relations, and thus in endowing the work with that independent life and that ethical sanction through which it can alone be raised into a work of art.

221 GOTTFRIED SEMPER from The Four Elements of Architecture (1851)

The earlier selections from the Semper essay on polychromy (see chapters 134 and 136 above) represented the architect at the very beginning of his career. By 1851 Semper’s situation had transformed itself in every which way. In 1834, in part due to his essay on polychromy, he was appointed a professor of architecture at the Dresden Academy of Fine Art. Shortly thereafter he launched a very successful architectural career, beginning with his much-applauded design for the Dresden Royal Theater (1835–41). His happy situation, however, changed dramatically with the political events of 1848–49, as the various Germanic states struggled with the issue of unification and a constitutional form of government. In May 1849 Semper, who supported national unity, was caught up in the so-called Dresden Uprising, which resulted in his political exile from Germany.

Of necessity, he turned to theory. In 1851 he published the first synopsis of his ideas, which he entitled The Four Elements of Architecture. Much of the text deals with his earlier ideas on polychromy and constitutes his response to the earlier criticisms of the art historian Franz Xaver Linn. But in the fifth chapter of the book Semper lays out two parts of his later theory, which views the history of architecture as a process of symbolic and formal development. The first is the notion that architecture derives its essential forms from four primordial or original motives found in the formal arts of ceramics, roofing (carpentry), mounding (terracing and masonry), and weaving (walling). The second notion is his so-called Bekleidung or “dressing” thesis. This archaeological and spatial theme suggests that the textile motive for the wall underwent an intricate process of formal development, as the conceptual rudiments of weaving evolved into textile wall hangings and later into solid wall dressings (paneling and point) that emulated in style their original textile origin. This line of reasoning would become the start of a very elaborate theory that Semper would ultimately devise and publish in his two volumes entitled Style.

The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up of the fireplace and the lighting of the reviving, warming, and food-preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first rude religious concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape.

It is the first and most important, the moral element of architecture. Around it were grouped the three other elements: the roof, the enclosure, and the mound—the protecting negations or defenders of the hearth's flame against the three hostile elements of nature.

According to how different human societies developed under the varied influences of climate, natural surroundings, social relations, and different racial dispositions, the combinations in which the four elements of architecture were arranged also had to change, with some elements becoming more developed while others reeded into the background. At the same time, the different technical skills of man became organized according to these elements: ceramics and afterwards metal works around the hearth, water and masonry works around the mound, carpentry around the roof and its accessories.

But what primitive technique evolved from the enclosure? None other than the art of the wall fitter (Wandberater), that is, the weaver of mats and carpets. This statement may appear strange and requires an explanation.

It was mentioned previously that there are writers who devote much time to searching for the origin of art and who believe they can deduce from it all the different ways of building. The nomadic tent plays a rather important role in their arguments. Yet while with great acumen they detect in the catenary curve of the tent the norm of the Tartar-Chinese way of building (although the same shapes occur in the caps and shoes of these people), they overlook the more general and less dubious influence that the carpet in its capacity as a wall, as a vertical means of protection, had on the evolution of certain architectural forms. Thus I seem to stand without the support of a single authority when I assert that the carpet wall plays a most important role in the general history of art.

It is well known that even now tribes in an early stage of their development apply their budding artistic instinct to the braiding and weaving of mats and covers (even when they still go around completely naked). The wildest tribes are familiar with the hedge-fence—the crudest wickerwork and the most primitive pen or spatial enclosure made from tree branches. Only the potter’s art can with some justification perhaps claim to be as ancient as the craft of carpet weaving.

The weaving of branches led easily to weaving bast into mats and covers and then to weaving with plant fiber and so forth. The oldest ornaments either derived from entwining or knotting materials or were easily produced on the potter’s wheel with the finger on the soft clay. The use of wickerwork for setting apart one’s property, the use of mats and carpets for floor coverings and protection against heat and cold and for subdividing the spaces within a dwelling in most cases preceded by far the masonry wall, particularly in areas favored by climate. The masonry wall was an intrusion into the domain of the wall fitter by the mason’s art, which had evolved from building terraces according to very different conditions of style.

Wickerwork, the original space divider, retained the full importance of its earlier stage, actually or ideally, when later the light mat walls were transformed into clay tile, brick, or stone walls. Wickerwork was the essence of the wall.

Hanging carpets remained the true walls, the visible boundaries of space. The often solid walls behind them were necessary for reasons that had nothing to do with the creation of space; they were needed for security, for supporting a load, for their permanence, and so on. Wherever the need for these secondary functions did not arise, the carpets remained the original means of separating space. Even where building solid walls became necessary, the
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latter were only the inner, invisible structure hidden behind the true and legitimate representatives of the wall, the colorful woven carpets.

The wall retained this meaning when materials other than the original were used, either for reason of greater durability, better preservation of the inner wall, economy, the display of greater magnificence, or for any other reason. The inventive mind of man produced many such substitutes, and all branches of the technical arts were successively enlisted.

The most widely used and perhaps the oldest substitute was offered by the mason's art, the stucco covering or bitumen plaster in other countries. The woodworkers made panels (šeššakku) with which to fit the walls, especially the lower parts. Workers handling fire supplied glazed terra cotta and metal plates. As the last substitute perhaps can be counted the panels of standstone, granite, alabaster, and marble that we find in widespread use in Assyria, Persia, Egypt, and even in Greece.

For a long time the character of the copy followed that of the prototype. The artists who created the painted and sculptured decorations on wood, stucco, fired clay, metal, or stone traditionally though not consciously imitated the colorful embroidurities and trellis works of the age-old carpet walls.

The whole system of Oriental polychromy – closely connected and to a certain extent one with the ancient arts of painting and dressing – and therefore also the art of painting and bas-relief arose from the looms and vats of the industrious Assyrians, or from the inventions of prehistoric people who preceded them. In any case, the Assyrians should be considered the most faithful guardians of this primordial motive.

In the oldest annals of mankind Assyrian carpets were famed for their splendid colors and the skill with which fantastic pictures were woven into them. Written descriptions of mystical animals, dragons, lions, tigers, and so forth agree fully with the images we see today on the walls of Nineveh. If such a comparison were still possible, we would recognize a perfect accord not only in the objects depicted but also in the manner of treatment.

Assyrian sculpture clearly kept within limits imposed by its origin, even though the new material permitted a new means of raising the figures from the background. A struggle toward naturalism is evident, whose limits were set not by hierarchical power, but (apart from the despotic rules of a ceremonial court) by the accidental features of a technique foreign to sculpture yet still responsive to the echoes from the past. The postures of the figures are stiff but not so rigid as to have become mere characters; they only look as though they were chained. Within a composition they are already, or rather, are still pictorial adaptations of a celebrated historical act or a court ceremony, not like the Egyptian images, which are simply a means to record a fact and are really a painted chronicle. Even in their arrangement, for instance, in their adherence to equal head heights, the Assyrian figures are more distinguished than Egyptian images. Sharp, threadlike contours, the hard shapes of the muscles, a predilection for ornamental accessories and embroidery are indicative of their origin; there is exaggeration, but not a lifeless style. The faces do not show the slightest trace of an artistic effort to render the inner state of the soul; they are, even with their constant smiles, without any individual expression. In this respect they are less advanced than Egyptian sculpture and resemble more the early works of the Greeks.

In actual wall murals the same technique is evident. According to Layard, the wall paintings at Nimrud are surrounded and interwoven with strong black contours; the ground is blue or yellow. The friezelike borders of the pictures that contain inscriptions also indicate their technical affinity with carpets. The character of the cuneiform corresponds fully with this technique. Would it be possible to invent for needlework a more convenient way of writing?

Alongside these substitutes for the earlier carpets, the latter were still widely used as door curtains, window curtains, and so forth, as can be seen by the richly decorated rings with which they were secured. The simple inlaying of the wooden floors is a sign that they, too, were covered with carpets. Carpets were also the models for the art of mosaic, which remained for the longest time true to its origin.

The interior walls above the gypsum panels were lined with a lightly burned, glazed, or, as one might say, lacquered brick. They were glazed only on one side and covered with painted ornaments that were totally inconsistent with the shape of the stone, but that crossed over it in every direction. Other evidence shows that the stones were in a horizontal position when they were glazed. They were, therefore, first arranged horizontally, then ornamented and glazed, and finally attached to the sun-dried brick wall in proper order as a dressing (bekleidung). This also proves that the glaze was a general covering and its idea was independent of the material to which it was applied. A late-Roman or Medieval use of colored stones for patterning a wall had not been conceived in these earliest periods of art.

NOTES

1 At first glance the mound or the terrace appears as secondary and as necessary only in the lowlands, where solid dwellings had already been erected; yet the mound joined at once with the hearth and was soon needed to raise it off the ground. Allied with the building of a pit, it may have also served as support for the earliest roofs. Moreover, it is probable that man, not as an individual but certainly as a social being, arose from the plains as the last mud-creation, so to speak. The legends from times immemorial of all nations, which often conceal an idea of natural philosophy, agree on this point.

2 The German word Wand (wall), paries, acknowledges its origin. The terms Wand and Gewand (dress) derive from a single root. They indicate the woven material that formed the wall.

3 It is highly probable that the wish to give tiles a colored glazing first led to the discovery of burnt bricks. The glazed tiles from Nineveh that I had the opportunity to examine closely in Paris are in an almost unburnt state. Their glaze must have been extraordinarily fusible. Terra cotta dressings are the forerunners to brick walls, and stone plaques the forerunners to ashlar.

4 It is remarkable that most of the colors on the Assyrian alabaster panels of Khorsabad and Nimrud have disappeared, while it is evident that they must have existed to complete the remnants still surviving. In contrast to Egyptian and Greek paintings, the surviving traces are not thickly applied but appear as if stained into the surface; it is probable that the colors were composed mainly of vegetable matter.
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their technical affinity with carpets. The character of the cuneiform corresponds fully with this technique. Would it be possible to invent for needlework a more convenient way of writing?

Alas alongside these substitutes for the earlier carpets, the latter were still widely used as door curtains, window curtains, and so forth, as can be seen by the richly decorated rings with which they were secured. The simple inlaying of the wooden floors is a sign that they, too, were covered with carpets. Carpets were also the models for the art of mosaic, which remained for the longest time true to its origin.

The interior walls above the gypsum panels were lined with a lightly burned, glazed, or, as one might say, lacquered brick. They were glazed only on one side and covered with painted ornaments that were totally inconsistent with the shape of the stone, but that crossed over it in every direction. Other evidence shows that the stones were in a horizontal position when they were glazed. They were, therefore, first arranged horizontally, then ornamented and glazed, and finally attached to the sun-dried brick wall in proper order as a dressing (bekleidung). This also proves that the glaze was a general covering and its idea was independent of the material to which it was applied. A late-Roman or Medieval use of colored stones for patterning a wall had not been conceived in these earliest periods of art.

NOTES

1 At first glance the mound or the terrace appears as secondary and as necessary only in the lowlands, where solid dwellings had already been erected; yet the mound joined at once with the hearth and was soon needed to raise it off the ground. Indeed, with the building of a pit, it may have also served as support for the earliest roofs. Moreover, it is probable that man, not as an individual but certainly as a social being, arose from the plains as the last mud-creation, so to speak. The legends from times immemorial of all nations, which often conceal an idea of natural philosophy, agree on this point.

2 The German word Wand [wall], pairue, acknowledges its origin. The terms Wand and Gewand [dress] derive from a single root. They indicate the woven material that formed the wall.

3 It is highly probable that the wish to give tiles a colored glazing first led to the discovery of burnt bricks. The glazed tiles from Nineveh that I had the opportunity to examine closely in Paris are in an almost unburnt state. Their glaze must have been extraordinarily fusible. Terra cotta dressings are the forerunners to brick walls, and stone plaques the forerunners to ashlars.

4 It is remarkable that most of the colors on the Assyrian alabaster panels of Khorsabad and Nimrud have disappeared, while it is evident that they must have existed to complete the remnants still surviving. In contrast to Egyptian and Greek paintings, the surviving traces are not thickly applied but appear as if stained into the surface; it is probable that the colors were composed mainly of vegetable matter.