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Reason and Style in the Theory of Viollet-le-Duc

The writings of Eugène Viollet-le-Duc epitomize the rationalistic approach that characterized nineteenth century architectural theory. He appealed to reason to explain the causes that gave rise to architectural forms. In his view, these causes should be found in the logic of construction techniques and in the building program. The belief in the rationality of the form-making process led Viollet to reject the notion of style as the external manifestation of a form. Rather, he understood style as the expression of an inner principle, which was present in all the genuine creations of architecture, and nature as well.

The first architectural form

With his particular reinterpretation of the theory of the origins of architecture of Vitruvius, Viollet wanted to demonstrate that function and technique were the causes giving rise to the first architectural forms. What prompted a man to build the first house—according to Viollet’s legend—was the necessity to get protection against rain, wind and beasts¹. This first builder came up with the idea to tie up the upper parts of two nearby trees, and asked other people to bring more trees and tie them together in a similar fashion. The trees were tied up with branches and the whole structure was covered with mud. Finally, the door was placed in the side most protected from the action of wind and rain.

With this myth, Viollet-le-Duc wants to emphasize the rationality of the man who built the first house. Furthermore, he is assuming that the construction system has its own logic, and that this logic determines the architectural form. The conical form of the first house was neither imagined by the builder nor copied from previous models. Rather, it was mostly the result of a technique consisting in fastening the trees in their upper part. Thus, the idea of the first house is identified with the structure, which in Viollet’s view constitutes the essence of architectural form.

Reason versus imitation

It was also the belief in the rationality inherent to the architectural form, which made Viollet reject the theory of imitation proposed by Vitruvius, who had suggested that the Doric Greek temple had been built following the model established by previous wooden huts. In *Histoire de l’habitation*, Viollet refuted every argument used to support the theory of Vitruvius. He claims, for example, that “il est bien évident que le chapiteau dorique, avec son échine courbe et son abaque carré, n’a nul rapport avec la forme qu’on peut tirer d’un morceau de bois.”² In a wood structure, Viollet-le-Duc contends, the cantilever of the capital in the direction of the beam is

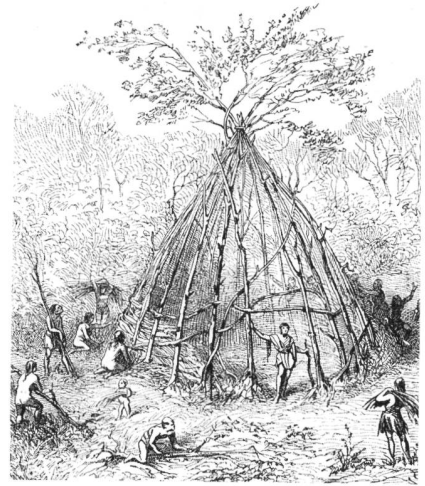


Illustration:
Viollet-le-Duc, *The first house*. From: *Histoire de l'habitation humaine*.

larger than in the perpendicular direction, so that the beam can have a larger area of support. In a stone construction, on the other hand, the capital cannot be extended as much from the column shaft because the stone has less resistance to tension forces than the wood. Therefore—Viollet concludes—the wooden capital could not have been the model for the squared stone capital.

Similarly, Viollet-le-Duc refutes the hypothesis according to which the architraves would have been made first out of wood before they were made of stone. If this had been the case, he argued, then the intercolumniation would have been larger. But the fact is that the distance between columns in a Doric temple is relatively short because, otherwise, the stone architraves would break. And he raised similar objections against the belief that the frieze would have had its origins in a wood construction. To refute this thesis, Viollet-le-Duc argued that, if the theory of imitation were true, then the triglyphs and metopes should only be on two sides of the temple, frontal or lateral, but not in all four sides. Only with regard to the cornice, is he willing to admit the influence of a previous wooden model.

Imitation, therefore, was not a valid explanation for the forms of the Greek temple. According to Viollet, those forms could have only been created as response to functional and structural demands. He asks himself: “D’abord, quel est le programme? Il s’agit de bâtir une *cella*, une salle fermée, de l’entourer de portiques autant pour la protéger que pour se mettre à couvert. Rien n’est plus simple. Quatre murailles percées de portes; à l’entour, des points d’appui portant des plates-bandes, protégées elles-mêmes par une corniche saillante; sur le tout, des pentes pour faire écouler les eaux pluviales des deux côtés dépourvus d’entrées.”³ And he concludes: “La raison seule trace ce programme.”⁴ Therefore, the logic of the constructive system and the dependency of form with regard to function make it unnecessary to appeal to a first model as the origin of architectural form, as Vitruvius had done. In Viollet-le-Duc’s conceptual framework, the causes that give rise to form become more relevant than form itself.

Structure and art form

A separation of architectural form into structure and ornament was, implicitly rather than explicitly, present in Vitruvius’ comparison between the wooden construction and the Greek temple. For Vitruvius, the forms of the orders came after some basic forms (e. g. the structural skeleton of the wooden hut) had existed.

Footnotes:

1 E. Viollet-le-Duc, *Histoire de l’habitation humaine*, Pierre Mardaga, éditeur; 1978, pp. 4–6.

2 *Ibid.*, p. 198

3 E. Viollet-le-Duc, *Entretiens sur l’architecture*.

Paris: A. Morel et Cie. éditeurs; 1863, vol. 1, p. 43

4 *Ibid.*

This distinction between structural form and ornament becomes more explicit in Viollet-le-Duc's theory. In the *Dictionnaire Raisonné*, he defined architecture as being "la structure revêtue d'une forme d'art."⁵ For Viollet-le-Duc, the structure of a building exemplifies the logical component of architectural form; it is the result of the application of scientific, objective principles. But he is also aware that logic and construction alone cannot completely explain architectural forms. Once the logic of the construction and the material has given rise to the overall composition of masses of the temple, the artistic sensitivity of the Greek artist comes into play to refine the forms, that is to say, to give them artistic expression: "L'artiste observe bientôt que les piles cylindriques de son temple paraissent plus grosses à leur sommet qu'à la base par suite d'une illusion d'optique; sa raison s'en choque aussi bien que son œil; de ces cylindres il en fait des cônes tronqués."⁶

However, even though Viollet accepts that the sensitivity of a particular artist might have played a role in the creation of the form of the temple, he nevertheless thinks that this sensitivity was also governed by a certain logic, the logic of perception: "L'architecte grec possède les qualités ou les faiblesses du raisonneur; il tient à démontrer aux yeux de tous que les divers membres de son monument ont une fonction utile, nécessaire; il ne veut pas qu'on puisse l'accuser d'avoir sacrifié au caprice; il ne lui suffit pas que son monument soit solide, il prétend le faire paraître tel."⁷ Hence, for Viollet-le-Duc there are two kinds of logic. First, there is the logic that is derived from the material, technique and functional demands. This is the sort of logic that the architect can learn from the observation of natural laws. Second, there is the logic of perception, which is the logic that reason imposes over the senses.⁸

In the architecture that Viollet-le-Duc postulated, the logic of the art form should not be in contradiction with the logic of the structural form (in its physical sense). For him, the two styles that exemplified this unity were the Greek and the Gothic. Thus, he says of the Greek that "la construction et l'art ne sont qu'une seule et même chose, la forme et la structure sont intimement liées"⁹ and of the Gothic that "il est impossible de séparer la forme de l'architecture du XIII^e siècle de sa structure."¹⁰ For Viollet-le-Duc, Greek and Gothic were not opposites, as they were for other theorists. These two 'styles' were for him expressions of one and the same principle. To this principle, Viollet-le-Duc gave the name *style*.

Style and styles

In his *Dictionnaire Raisonné*, Viollet-le-Duc begins the entry 'Style' distinguishing between *style* and *styles*. In the history of architecture, he argues, it is common to use the word 'style' to refer to the Greek, Roman or Gothic styles. But he thinks that, in those cases, it would be more appropriate to speak of formes rather than styles: "Il eût été plus vrai de dire: la forme grecque, la forme romane, la forme gothique, et de ne pas appliquer à des caractères particuliers de l'art le mot style."¹¹ In his view, there cannot be many styles, but only one style; one that is common to every true architecture of the past. His definition of style is then the following: "C'est, dans une œuvre d'art, la manifestation d'un idéal établi sur un principe."¹² Therefore, even though the formes of different periods were different, their underlying principle could only be one: *style*.

This principle that constitutes the fundament of Viollet-le-Duc's notion of style, is none other than the principle that rules nature's creations. All the forms created by nature have *style* because they follow one universal principle: "Si donc nous pénétrons quelque peu dans la connaissance des

Footnotes:

5 E. Viollet-le-Duc, *Dictionnaire Raisonné de l'Architecture Française du XI^e au XVI^e Siècle*. Paris: A. Morel, éditeur; 1854–68, vol. 8, p. 490

6 E. Viollet-le-Duc, *Entretiens*, vol. 1, p. 48

7 *Ibid.*, pp. 49–50

8 An example of this logic of the perception is his explanation of the channelling of the triglyphs. He contends that the eye sees that the triglyph is submitted to vertical forces in much the same way as the column is. Therefore, if the column is fluted, the eye expects a similar treatment for the triglyph, since both elements fulfill a similar purpose: to carry the vertical loads of the elements located above them. In Viollet-le-Duc's view, this congruency between the logic of the structure and the logic of perception is what makes of the Greek Doric temple a unique architectural achievement. By considering the temple as a ensemble of masses under the effect of light, and appealing to the logic of the eye, Viollet-le-Duc was paving the way for Le Corbusier's later interpretation of the Parthenon. More eloquently than Viollet-le-Duc, Le Corbusier would refer later to the visual effect of the forms of the temple, and their conformity with the laws of optics: "Les Grecs ont créé un système plastique actionnant directement et puissamment nos sens: colonnes, cannelures des colonnes, entablement complexe et lourd d'intentions, gradins qui contrastent et qui lient à l'horizon. Ils ont appliqué les plus savantes déformations, apportant à la modénature une adaptation impeccable aux lois de l'optique." Le Corbusier, *Vers une architecture*. Paris: Les éditions G. Crès et Cie; 1923, p. 170.

9 Viollet-le-Duc, *Entretiens*, vol. 1, p. 102.

10 *Ibid.*, p. 284. It should be noticed, that Viollet-le-Duc uses the 'term forme' to refer to the visible, external form, while he uses 'structure' to refer to an inner form or principle that derives from the logic of the construction.

11 E. Viollet-le-Duc, *Dictionnaire Raisonné*, vol. 8, p. 474

12 *Ibid.*

grands principes de l'ordre universel, nous reconnaissons bien vite que toute création se développe suivant une marche logique, et que, pour être, elle se soumet à des lois antérieures à l'idée créatrice."¹³ In accordance with his rationalistic creed, for Viollet-le-Duc nature meant logical and rational procedures. For him nature and reason were not opposites. Rather, they were the same thing: the reason of nature was the reason of man and vice versa. Architecture, then, should proceed with the same logic as nature: "L'art de l'architecture est une création humaine; mais telle est notre infériorité, que, pour obtenir cette création, nous sommes obligés de procéder comme la nature dans ses œuvres, en employant les mêmes éléments, la même méthode logique; en observant la même soumission à certaines lois, les mêmes transitions."¹⁴ In sum, "l'architecture, cette création humaine, n'est donc, de fait, qu'une application de principes qui sont nés en dehors de nous et que nous nous approprions par l'observation."¹⁵ If the architect proceeds according to natural (i. e. rational) principles, then his works will have *style*, as the works of nature: "Il ne s'agit d'autre chose que de faire saisir les grands principes, les principes les plus simples à l'aide desquels le style pénètre les œuvres d'architecture."¹⁶

But this principle, that constitutes the basis of a genuine creation of architecture, is not only discovered in nature; it can also be deduced from those architectural works of the past that possess *style*. In this case, the architect should not confine himself to copy the appearances of past styles—that is to say, their *forms*—for the same reason that he should not just copy the appearances of nature.¹⁷ What the architect has to do—according to Viollet—is to understand the intrinsic principles that govern the formation of the historical styles, and then apply those principles to his own work.

Viollet-le-Duc himself put into practice this inductive-deductive approach when he applied principles derived from the study of the Gothic to his own designs. But the value of his designs, however, has not been unanimously acknowledged. John Summerson, for example, has written about them that "it is all marvellously clever, but I think you will agree that the result is not very moving. It does lack style. It is rather like a language invented *ad hoc*; a sort of Esperanto evolved from the salient characteristics of other languages but lacking the vital unity which any one language possesses."¹⁸ Indeed, by stretching 'rationality' too far, Viollet-le-Duc might have neglected more enigmatic, albeit fundamental, aspects of the form-making process in architecture.

The present article is a revised extract from the author's Ph. D. thesis: The Concept of Type in Architecture. An Inquiry into the Nature of Architectural Form, ETH Zürich, 1995

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Footnotes:

¹³ Ibid. p. 477. At this point, the notion of style held by Viollet-le-Duc reminds Quatremère de Quincy's reference to the type original de la création: "Voilà ce que fit le véritable imitateur: et il ne put le faire, qu'en généralisant, par une observation étendue, l'étude de la nature, et en la réduisant en système. Or, ce système n'est autre chose que le type idéal de l'imitation, type formé non sur tel ou tel ouvrage isolé de la nature, mais sur la généralité des lois et des raisons qui se manifestent dans l'universalité de ses œuvres." (A. Quatremère de Quincy, *Essai sur la nature, le but et les moyens de l'imitation dans les Beaux-arts*. Bruxelles: Archives d'Architecture Moderne; 1980 [1823]. p. 196) Despite the different terms used by the two authors, both invoked a generic principle in nature that the architect must imitate: style, in the case of Viollet, type in the case of Quatremère.

¹⁴ E. Viollet-le-Duc, *Dictionnaire Raisonné*, vol. 8, p. 476

¹⁵ Ibid.

¹⁶ Ibid., p. 477

¹⁷ Thus, with regard to the study of Greek architecture, Viollet-le-Duc contends that this is "indispensable pour un architecte," but "indispensable à la condition que cette étude ne s'arrêtera pas à ces formes, mais qu'elle ira chercher le principe, qui est le principe de tous les arts." Viollet-le-Duc, *Entretiens*, vol. 1., p. 55

¹⁸ J. Summerson, *Heavenly Mansions, and other Essays on Architecture*. New York and London: W.W. Norton & Company; 1963, pp. 157–158.