Constructing Architectural Theory

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In Paul Valéry's *Eupalinos ou l'architecte*, Socrates and Phaedrus encounter each other in the afterlife where their conversation takes them to the subject of architecture, and a certain Eupalinos, a master architect whom Phaedrus had known. Phaedrus shares with Socrates the contents of his discussions with Eupalinos regarding the art of architecture, its perfection, and the concern for order that occupied this architect's mind. This discussion of the architect's knowledge and skills and his evident love of his art, evoked a vivid memory in Socrates who then recounted to Phaedrus an event from his youth which had a pivotal significance in his life. Socrates had been walking by the sea when a mysterious object that had washed ashore attracted his attention. Upon examination, the partially eroded object left Socrates unsure as to whether it was a product of nature or of human artifice. This uncertainty compelled him to reflect upon a number of themes: the object, the matter and the form; the indivisibility between the maker and the made; the principles that inform construction; can principles and the act of construction be separated? and what is the relation between the necessary and the beautiful? A difficult choice presented itself to the young Socrates who hesitated between becoming a philosopher or an architect, because he hesitated between to *know* and to *build*, between the philosopher that he will be and the architect that he never was. Socrates the philosopher confesses that he always held within him an incomplete architect.

This fictive dialogue, resonant with verisimilitude, can stand as an analogy to the kind of contemplation that characterizes the mind that reflects on making (Greek *poein*; Latin *facere*) in general, and on the specificity of architectural making, namely: construction. For, architecture, Vitruvius tells us, derives from building (*fabrica*) and reasoning (*ratiocinatio*). At this point, we are not yet at the level where theory is constructed.

This essay will discuss three main questions regarding architectural theory: the causal relation between building and theory; the necessary mental conditions that precede theory; and a definition of theory in its scope, discourse, and nature.

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On the causes preceding building

Reflection precedes realization, but theory does not necessarily precede practice. Any adumbration of an act of building necessitates a certain understanding of an idea of enclosure, of load-bearing and load-borne; and the result is a physical approximation of this idea. Therefore some kind of reflection (the will to act upon an idea, an image) always precedes building (the activity itself), in view of arriving at the desired end (shelter). Theory however, is a systemic elaboration of knowledge that operates based on definitions and concepts, in the sense that definitions build concepts, and concepts in turn build a theory, but not the reverse of the sequence. In other words, a definition does not contain a theory, but a theory comprises many definitions.

Consider the following three examples. To build a beam over two vertical supports presupposes an understanding of spanning. Thus, one can *define* trabeation as the vertical members that support a horizontal member spanning a certain distance that depends on the properties of the wood utilized, and the weight that needs to be carried. To build an architrave that spans two columns each of which is crowned by an abacus and based on a plinth, presupposes a *concept* of how the column transfers weight from the architrave, of how it meets the ground, and how other structural elements mediate between the column, the architrave, and the ground in order to reflect this condition. Finally, to build a trabeation of two pieces with internal and external facings, over say, Ionic columns with entasis and where the corner volute inflects inward, presupposes a *theory* of the tectonic transformation of columnar and trabeational types, as well as a way to respond to frontality and the observer's view of the building's corner.

Theory, then, comes 'late', only because it is the synthesis of a content that was already present. It is constructed after a prolonged reflection over many experiences, based on common, comparative, or contrasting sets of criteria. However, before the establishment of theory in the above mentioned sense, and indeed beyond any historicity, there is some element[1] of reflection which can be termed the building's efficient cause. In fact, it is upon the difference or distance between 'early and uncorrupted' reflections on the act of building, and the later more elaborate theories that much of architectural theory has developed. Accordingly, architects have continuously reflected upon the conditions when the 'first' precipitate of

[1] This element is not necessarily a primitivism.

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architectural thinking occurred, leading later to the elaboration of early principles. This reflection, not necessarily deriving from an archaeological concern, is oriented toward two aims. First is the recovery or re-thinking of this causal realm in as clear a way as the mind, imagination, and inventiveness can conceive. Second is the recovery of the wisdom of a poetic order within the vast theatre of memory which we call history, in order to maintain a knowledge of what endures and what is contingent.

Now, although the direction of causation is asymmetrical in the sense that the cause[2] necessitates the effect, it is not sufficient to consider one event to be the cause of another simply because it preceded it. For this reason, it is useful to distinguish between an origin and a beginning. Both are causal, but the first is causal on the level of paradigm[3] (e.g. the universal type(s), the foundational myth, the primitive hut), while the second is causal on the level of a historical sequence (e.g. the particular model, the archaeological precedent). Maintaining such a clear distinction following a long sequence of historical developments proves to be a laborious task because quite a number of causes usually combine to make one effect, one building. Also, the subsequent explanations for architectural forms are *not* causes. For example, *if* some architectural forms (the primitive hut, the triglyph, the Corinthian capital) have evoked the various theories that later explained them, note how these theories in turn, influenced the making of future architectural forms. This discourse need not necessarily be circular if one keeps in mind the difference between an origin and a beginning, and considers theory and practice to be two parts of a larger tripartite dialectic which includes poetics. We shall return to this point at the end of this essay.

[2] On causality, see C. H. Hempel, *Eléments d'épistémologie* (Paris: Colin, 1972); Donald Davidson, 'Actions, Reasons, and Causes', in *Essays on Actions and Events* (Oxford, 1980); K. Pomian (ed.), *Le débat sur le déterminisme* (Paris: Gallimard, 1988); and E. Sosa and M. Tooley, *Causation* (Oxford, 1993).

[3] Theories of origin—since Vitruvius—have emphasized empirical experiments leading to a beginning or beginnings, to the *archi* in architecture. This shows that the hut is a beginning and not an origin, for a certain distance had to be traversed to arrive to it. The locus of the origin was somewhere between a natural shelter and the first interpretations of constructive elements devoid of purely natural connotations. Thus the 'first' construction was not the hut, for this building converges many experiences, and its details imply a sophisticated way of addressing the built work from the exterior.

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Architects also pursue causality because they seek knowledge for its own sake as well as for the sake of the usefulness or need which produced their art in the first place. For this *need* constitutes the specificity that distinguishes architecture from the other arts. Accordingly, the question arises: what are the irreducible intellectual causes for architecture to occur? Notwithstanding his rejection of Plato's Forms, which explained the metaphysical (experience beyond the senses) reasons for ideas and their reception and elaboration by the mind, Aristotle's quartet of causes: the material, formal, efficient, and final, provides a valuable set of criteria[4]. Wood is the material cause of a house; a matter that is potentially the house, which actually becomes the house when it is given the formal cause. Thinking is the efficient cause for making the house. It is that intentionality from which the act of beginning the house derives; while the purpose for which shelter is made is the final cause toward which all the other causes tend. Hence, the purposeful directionality (*telos*) of human making[5] in imitation of Nature's ways of making.

Put differently, although the form of a house has no physical presence independently from the tree, the tree does not cause the house's form without the efficient cause of the maker. Efficient cause is not simply A causes B; rather, it pertains to momentous constituents of the human character whose external manifestations are: making and dwelling[6]. Efficient cause is a kind of making qualified by a purpose *other than itself*[7] and its own processes; it is not

[4] Aristotle, *Metaphysics*, 980–1003. These causes had already been implicit in the *Timaeus*, where Plato distinguishes between matter; the ideas or Forms; and the demiurge, the maker. Aristotle differentiated Plato's triple set of causes, while eliminating the Forms whose existence he doubted. However, Plato's Forms and Aristotle's quartet of causes need not be seen as mutually exclusive. We shall return to the Forms in our discussion of the notion of type.

[5] What Aristotle called: things of institution.

[6] See M. Heidegger's seminal essay 'Building, Dwelling, Thinking', in *Poetry, Language, Thought*, Albert Hofstadter tr., (New York: Harper and Row Publishers, 1971); which outlines the meaning of building as dwelling.

[7] 'The business of every art is to bring something into existence, and the practice of an art involves the study of how to bring into existence something which is capable of having such an existence and has its efficient cause in the *maker* and not in *itself*'. Italics mine. Aristotle, *Ethica Nicomach*. 1140a 9.

In his lectures on aesthetics, Hegel pursued an opposite position in searching for a building or an object which has an efficient cause in itself. He arrived at this point by assuming that should we suspend the reason for

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self-generated, it is a making based on an idea, an image to which some pre-existing material is then made to conform in sensuous form. It touches the essential nature of architecture for two reasons. First, because it concerns one of the ontological traits of the human character: the need to live, move and have our being in a world constructed within Nature, taking her laws (*natura naturans*) as models and using her products (*natura naturata*) as materials. Second, because it originates architectural properties which are necessary and not just circumstantial. In other words, efficient causation assures rational architectural properties whose proven success merit their preservation for posterity, hence the idea of tradition. This way a collection of experiences—and later theory—can anticipate practice.

Causality, in the final analysis, concerns the essential nature of architecture (the idea of dwelling individually and collectively), the purpose to which it tends (solid shelter, the common good of cities), the forms that compose it (the various typologies), and the materials out of which these forms are made (wood, stone, brick).

Three essential dualities

Image and word, type and model, imitation and invention, play a foundational role in the formation of architecture, its perfection as an art, and the eventual elaboration of its tenets into a theory. In this section, we will look closely at the three dualities mentioned above, discussing their relationships and their influence on the way we understand architecture. The conclusions are then summarized at the end of this section.

IMAGE AND WORD. Beyond our collectively inherited images, there are forms and their images which gained ascendancy for reasons other than their steady repetition in history. These forms are the result of an intellectual process that reveals itself in images[8]; while these images are representations or imitations of a perceived

[8] What Aristotle called *phantasia*.

the building e.g. a god or a man, and the reason to house this god and this man, and should we still find a building which is like a piece of sculpture, then we would have found an object which is its own cause. See, G. W. F. Hegel *Aesthetics: lectures on fine art*, Architecture: Introduction, (Oxford: Clarendon Press, 1975); Vol. II, p. 630–4.

Consider also the Greek verb *poein*: to make; *poesis*: making; and the Latin verb *facere*: to make, mould; and *aedificare*: to build.

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truth, a perceived reality. Within the dialectic of the visible (objects apprehended by the senses) and the invisible (ideas or forms apprehended by the mind), the image acts as a symbol when it supports the visibility of an idea. The idea or form is not a concept, rather it is the concept's very object[9]. One difference between the rhetorical and the visual arts is that although they all require and evoke images and words, only the visual arts are actually *made* with images; while architectural reflection is made with images and to a certain extent words. Here, Plato's theory of Forms (*idéa*, or *eidos* whose etymological roots *wid* and *weid* mean: to see) applies effectively. Forms, the type of a thing, (or literally, the image of a thing), exist as shared characteristics of sensed things[10]. In other words, these Forms stand to the images as poetical metaphors, or as patterns, as intelligible universals, which are actualized or realized when united with matter. Forms can be seen as *structural potentials* that stand on the level of the artistically *true*, while the resulting images stand on the level of the artistically *factual*. Images, or the artistically factual, can be classified into three divisions. First, are visual images, which include perceptual data, e.g. sense data, and graphic images which include drawings, paintings, sculptures and architecture. Second are mental images which include ideas and involve memory. Thirdly, are verbal images which include metaphors and descriptions.

To reflect on the image, the word, and the building implies inquiry about the ends for which the mind constructs architecture, the means used to construct buildings, and the intellectual means used to apprehend this construction. We dwell through the images and the words that we produce, receive, maintain, destroy, restitute, restore, and rebuild. Symbolic forms such as myth, language, religion, art, architecture, and science, order the world of experience through their modes of representation. Here, the image and the word play an active mediatory function. The name, as a primary

[9] See Plato's *Parmenides*, 132b–c.

[10] Things with such characteristics are said by Plato to 'participate' in Forms (*Republic*, 507b). There are things seen but not thought, but the Forms are thought but not seen. As the objects of intelligence and knowledge, Forms are only comprehended, and hold an independent existence from sensed things. Plato does not explain the manner in which Forms come to characterize things, but his notion of participation implies a certain imitative involvement between things and Forms (*Phaedrus* 100d, 5–7). Plato uses the Forms in order to explain and name things (*Republic*, 524b–c). Things, resemble Forms, they are the images which imitate the Forms; e.g the chair resembles or imitates the Form to which the carpenter looks (*Phaedo*, 596b).

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universal[11] precedes the concept with its dual function of denoting and meaning, but both name and concept arise as reflections on language and reflections on logic come together.

The first moment of naming the architectural object during constructional activity is a moment brimming with symbolism, when this object returns the gaze of the maker and the observer, and invites such naming. Architectural naming here operates as the expression of the maker toward this object, and as the expression of the observer of the architectural object. Accordingly, naming participates in constructing the world by recognizing the objective qualities within form (e.g. beauty as an objective property of beautiful things); the subjective attributes to these qualities (e.g. the expression that a subject imputes to a form as part of making it); or the expression imparted to a newly encountered form. Only when the seen form is named does it acquire a distinct identity, intrinsic and extrinsic meaning. Consider for instance the following three examples: 1) the cornice, from the Greek *korone*, the Latin *corona*, something curved, a luminous ring, a crown; 2) the ovolo from the Italian *ovo*, from the Latin *ovum*, or egg; 3) or the *cyma* for the Greek *kuma*, the Latin *cymatium*, or molding.

But sight alone does not suffice, and naming alone does not suffice. Knowledge of the same architectural phenomenon, can be approached mostly visually, but in part linguistically. It proves difficult to separate both of these approaches, for to suggest that sense data can be ostensibly apprehended without recourse to language, leaves it unclear as to what rôle language fulfills in how and when meaning occurs. Remedying the problem of this 'presentational immediacy', but without negating the possibility of having an experience which does not depend on some form of language, one can easily surmise that language was present initially, accompanying the earliest instances of the architectural experience. These were also the first instances of expression within which elements of form and meaning were already co-present.[12] In this perspective, the approach to knowledge through the image, occurs in a world where the word had already been playing a constitutive rôle. This constitutive rôle, was surely a short experience because of the immediate addition of layers of logic and experience.

The word (name) then, contributes to the formation, the representation, and the meaning of the image—an essentially aesthetic function. Image and word belong to a symbolic order which can be defined as that which enables a concrete object to acquire a signifi-

[11] See E. Cassirer, *The Philosophy of Symbolic Forms* (New Haven: Yale University Press, 1953–57).

[12] See E. Cassirer, *Philosophy of Symbolic Forms*, Vol. III, p. 68.

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cance beyond its concreteness, its utility. The symbol is to the object what a universal is to a particular. Meaning, to the symbol, is not an arbitrary matter. Rather it establishes analogical constructs between two related parts: the instrumentality of objects, and the truths that these objects instantiate. Consider for example the multiplicity of meanings associated with the following words. The arch not only holds a wall, transfers weight, encloses, and spans a certain distance using concentrically arranged stones. It also symbolically encloses the scope of an endeavor in a given arc of time. The sickle cuts grass and symbolizes the worker. The trowel spreads and shapes plaster, but it can also stand for the solidarity in a shared guild. The scale weighs somebody or something, but in balancing dualities it can denote soundness of judgment. The axe fells trees, but it can abruptly end someone's employment. The pen writes with ink, but it is also a particular style of writing. Symbolic thought is synthetic in that it allows external and internal meanings to fuse within the object. Hence, representation is a symbolic act.[13]

As a symbol and tool for the aesthetic activity of the mind, the word is propitiously placed as a mediator, establishing relationships between various phenomena, *qualia* (the subjective qualities of experience) and characters. The word is mediation *par excellence*. This mediation allows the word to be involved at once in immediate experience, in expression, as well as to be removed from this immediacy to serve other objects of the mind, such as engaging in reflection or perception beyond the level of ordinary experience.[14] Thus, both language (word) and sense data (image) point to the 'mental existence' of meanings which themselves can be subject to, but also independent from the experience of the senses. In such a way, language is also necessary for the imagination, whether in its Kantian form of a unity between sense data and concepts in ordinary perception or aesthetic judgment, or in G. B. Vico's form of *fantasia* needed for the retrieval of a theory of origins, a poetic wisdom (*sapienza poetica*) answering the tragedy of history, in a manner akin to a Platonic understanding of type in architecture.[15] The word

[13] See T. Todorov, *Théories du symbole* (Paris: Seuil, 1977).

[14] On this issue see S. Langer's translation of Cassirer's *Language and Myth* (Dover: N.Y. 1946), p. 56.

[15] On I. Kant's imagination, see P. F. Strawson's 'Imagination and Perception', in *Experience and Theory*, L. Foster and J. W. Swanson eds. Cambridge, Mass, 1970. On the mnemonic recovery of enduring knowledge, see Giambattista Vico, *The New Science of Giambattista Vico*, Thomas Goddard Bergin and Max Harold Fisch trs., (Cornell University Press, 1984). On G. Vico's *fantasia*. see D. Verene, 'Vico's Philosophy of the Imagination', in *Social Research*, 43, 1976.

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then, is a symbol of value because it symbolically connects various forms of expression with concepts. On the one hand, conceptions can originate forms of expression, whether the mind contemplates Platonic Forms or whether it provides the Kantian 'transcendental constituent of form'. On the other, conceptions can arise *from* forms of expression, as in a Herbartian scheme, where the mind will sift, analyse, categorize and combine ideas according to their congruities or differences.[16]

In such a manner the mind constructs a world within the world, and then reflects upon its own activity, as well as its own aesthetic appreciation of such activity. Meaning emerges out of the very act of constructing meaning. And so the mind considers its proper symbolic relations with its own constructions, and in comparison to other constructions. Thus, meaning in architecture occurs in four directions: in the architect's mind prior to building; concurrent with the act of building; its reception by the observing mind; and the mind's return of the building's gaze on the level of individual and social views. This is what makes buildings 'speak' to us. Meaning derives in force from efficient causation, and because works of architecture have significance. Consider this passage from Vitruvius's *De architectura*: 'In all matters, but particularly in architecture, there are these two points:—the thing signified (*quod significatur*, or the factual, the objective presence of a building or a work of art, the image) and that which gives it its significance (*quod significat*, or the artistically true, what transcends a building or a work of art, the word)'[17]. In this perspective, the relationship between Vitruvius's *ratiocinatione*, or theoretical knowledge, and *fabrica*, or practice, can be understood respectively as the true naming the factual as the made. Clearly, it is untenable to hold that there is a categorical division between the signifier and the signified, otherwise, one would have to accept the absurd corollary that architectural form stands separate from architectural significance. Architecture, then, thrives in two realms at once: the artistically true or the transcendent, which designate an efficient causation that directs a work of architecture while remaining outside of it; and the factual or the immanent, which designate the contingent aspects of construction, a certain perceived reality.

Symbolic representation, linguistic and visual, results from a synthetic agreement between sense data and the mind. As 'ways of

[16] See Herbart, J. F. *A text-book in psychology* (Washington, D.C.: University Publications of America, 1977).

[17] *De architectura*, Morris, H. Morgan translator, (N.Y.: Dover Publications, 1960), I,1,3; p. 5.

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life'[18], the image and the word can theoretically stand for the same meaning. However, the experience of the word in syntax is unlike the experience of the image in visual art. Whereas the word is instrumental in grasping the true and the factual, it does not engender the image. In this sense, language does not comprise within itself the image or other sensory data, although it can evoke them. For this reason, the word and the image do not share the same dialectical structure. If they did, we would find that the visual and the verbal are reducible to each other. The relationship between a writer and a reader or two people communicating in the same language, is not the same as that of the architect, and an observer's perception of the architect's building. The image and the word cannot be collapsed into each other. They are not phenomena which lead an independent existence until a pre-conceived meaning is *later* attached to them. From here derives the larger deduction that it is erroneous to consider any carrier of a message as a language.

TYPE AND MODEL. We return to the concept of origin, this time to emphasize the close ontological parallel between the Form, the word and the type, which are part of the larger project undertaken by the mind in search of universally shared purposes within the permanences of human experience.[19] These enduring manifestations in their respective domains point to the artistically true and to its realization, its fulfilment. A type can be seen as an artistic truth that informs varied forms which in turn hold this truth in common. The Form (the word and the type) in religion, poetry and architecture, transcend the historical event, and are precursors of manifestations to come. In this, they unify some of the characteristics of the prophet and the poet and imply that through the imitation of the paradigms that they gradually provide resides the key(s) for the fulfilment of a truth, in life, in a poem, in a house. In like manner, a primary—intuitive—experience of building: e.g. the primitive hut, was also the primary form of architectural expression. Within this expression, from which one cannot dissociate an element of representation, were present since the beginning, the regulative elements which contributed to the knowledge of form and tectonics.

The other aspect of Form, the type, is an originating principle upon which, further and more elaborate building forms are based. 'There ought to be an antecedent to everything', said Quatremère

[18] The expression is Wittgenstein's.

[19] Vitruvius spoke of the simultaneous developments of society, architecture and language. Ibid., II, i, 1.

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de Quincy; 'nothing whatsoever comes from nothing, and this cannot but apply to all human inventions'[20]. The idea of type, as Quatremère suggested, refers more to *that* which serves as a rule for the model rather than the object in its concrete specificity[21]. The type can be likened to a *noumenon*[22] which can be known or inferred through an experience of phenomena. The type is the building's *raison originaire*, or original cause, whereas the model is *la chose complète*, the complete, the concrete thing. Exact similitude can be derived from the model but not from the type, which informs a variety of buildings which may or may not resemble each other. In other words, with type there is resemblance; but with the model there is sameness. For this reason, the imitation of a type, or *resemblance by means of an image*, is to be distinguished from the copy of a model, or *similarity by means of identity*[23].

IMITATION AND INVENTION. Imitation is not only located between the artistically true (*verum*) and the factual (*factum*). It mediates both. Imitation involves an incompleteness and a change in materials with respect to a type or a model. Hence, this representation is *fictive*. Note for example how the image of the wooden primitive hut remains distinctly present albeit in a transformed manner in the stone building; e.g. La Maison carrée in Nîmes and T. Jefferson's Capitol in Richmond. Fictive imitation elevates the individual work beyond mere necessity, mere contingency. The fictive transformation from wood into stone based on a type, and the resulting diverse tectonic transformations are based on this fiction. As architecture's imitation is analogical and not similitudinal, it is a transformation of building based on a selective choice of elements

[20] See S. Younés, *The True, The Fictive and the Real. The Historical Dictionary of Architecture of Quatremère de Quincy* (London: A. Papdakis, 1999), p. 255.

[21] The poles of the architectural debate about type had already been prefigured in the positions of A. C. Quatremère de Quincy and J-N-L. Durand in the early nineteenth century. Quatremere's Platonism made him consider the type as an idea that is not a building but from which various models, e.g. buildings, can derive. Durand's techno-scientific views made him see the type as a process of combinatory geometries.

[22] Phenomena are the changing, accidental or contingent things perceived by the senses. By contrast, noumena are things that are thought; they consist in understanding the essential nature of phenomena, their fundamental, underlying principles.

[23] This distinction is made by A. C. Quatremère de Quincy, See his *Essai sur la nature, le but et les moyens de l'imitation dans les beaux-arts*. Paris, 1823. Reprint, Archives d'Architecture Moderne, (Bruxelles, 1980), p. 21–8.

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deemed important. Aristotle's *Poetics* assumes that *mimesis* (imitation) is the way of dwelling in and coming to terms with Nature, appropriating her laws (e.g. causality, growth, proportion, commensurability) and taking these laws as paradigms for how things *ought* to be. In architecture, this is transformed into an image (sensuous form) of what is true for the architect. This truth is to be understood as an artistic truth and not the truth of a proposition. The architect imitates things as they have essential significance, but he or she does not copy any particular thing. This enables the layered transformation of natural models, without which the column would have always remained a tree. The form of the imitation is always different from that of the model. The roof is different from the forest's canopy. It is here that the pleasure of invention and the evaluation of the new enter, for it is within the recognized distance between the forest's canopy and the roof, that much of art occurs. Invention, however, does not arbitrarily derive from any imaginable provenance, for as a necessary and new combination of pre-existing elements, it must rationally relate to all that is contained within the purpose of building, including suitability, solidity, and economy. Accordingly, it would be an error to consider invention and rules as logical opposites, and the mark of genius resides in overcoming this illusory division. However, when for the sake of originality—that quality which has been so zealously sought since the Enlightenment—, the production of novelty becomes an end in itself—e.g. the phenomenon of making-different, or rupture and transgression of conventions as ends in themselves—invention becomes confused with innovation, and the architect's individual freedom divorces itself from the natural boundaries of architecture. Imitation and invention are two facets of the same coin.

The foregoing discussion served to indicate the following points. First, the image and the word are two ways in which we dwell by constructing the forms symbolic of our perception of truth and reality. Second, the word as mediation helps the mind to make meaning in two directions: toward the named object, and toward the milieu where this object exists, taking this object as a departure point. Third, the relationship between the Form and type, image and word is ontologically tied to the mind. Fourth, the image and the word, point at once to the true and the factual. Fifth, the word and the image are inseparable, even if they involve the exercise of different perceptual abilities and point to different orders of the true and the factual. But note that this inseparability should not imply the reduction of the word to the image or vice versa. This betrays a confusion between the true and the factual or the reduc-

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tion of one to the other. Sixth, imitation and invention are inseparable parts of making. These are some of the intellectual or perceptual conditions necessary for the rise of theory.

A Definition of Architectural Theory: its scope, discourse, and nature

SCOPE. The early twenty-first century reader is accustomed to the classificatory thinking that separated philosophy into three divisions (Kant's three critiques). He or she would therefore expect architectural theory to present a similar systemic approach. But this is not so. This is because much in architectural theory, especially since the eighteenth century, is a *polemic* rather than a *system* of thought. An architectural polemic corroborates, propagates, or opposes other positions regarding a region of architecture without encompassing the comprehensiveness or 'completeness' of the architectural sphere. This is not to say that a polemic is of superficial depth for a polemic may elaborate an aspect of a system that has been categorized but not developed. An architectural theory that is systemic will elaborate the essential nature of this art, the purpose or ends for which it is made, and the means that it ought to use in order to fulfill its nature and attain its purpose[24]. A system also identifies the principles which are the very source of rules, as well as develops the rules which underlie the basis of conventions—a customary way of making or doing something. Principles, rules, and conventions are at once the province of the *individual* architect, as well as the *collective* experience of architects in their societal rôle. This is, after all, the very purpose of the architectural treatise in its three principal aims: the philosophical, didactic and technical. Finally, a system explains the relations (these relations include autonomy, commonality, and differences) between architecture and the other arts. All of these concern the phenomenological specificity of architecture.

Thus a theory that is systemic aims at a certain level of completeness for it establishes the *internal* organization of architecture as a discipline, and it explains its *external* relations to other arts, to techniques, to social factors. Put differently, the *interior individual* realm concerns the intellectual freedom, the inner reflection of the architect-maker. The *exterior individual* pertains to the thoughts resulting from one architect reflecting upon another architect's work, as well as the individual architect's reflections on the suitabil-

[24] See Quatremère de Quincy, Ibid.

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ity of her or his building to a context. The *interior collective* bears upon the conscious or unconscious contents of culture which thrive within the images of operative myths that inform architectural production. The *exterior collective* designates that commonly built sense regarding the suitability of architecture (*decorum*) within its milieu par excellence: the city. The above concerns the *scope* of an architectural theoretical system, on the urban, architectural, aesthetic, social, and practical levels.

DISCOURSE. Very few are the architects who elaborated such a systemic architectural theory, or what G. Scott called: "a fully reasoned theory", for systems remain mostly in the domain of philosophers. Vitruvius, in his divisions of architecture and his enumeration and brief definitions of architectural concepts, gave one of the most complete outlines of architectural theory, but did not developed it to a sufficient depth. For an in-depth treatment of the subject, architectural theory had to wait for the embracing systems of an L. B. Alberti and an A. C. Quatremère de Quincy[25].

As the mind constructed, and reflected upon itself in the act of constructing, theorizing probably developed from early adumbrations regarding whether the building satisfied necessity or not. This necessitated a comparison between what was built and what could or should have been built[26]. Such a judgment later gave rise to more developed concepts concerning aesthetics and tectonic representation. Thus, architectural theory and its terminology probably developed side by side—but slightly behind—with the construction of buildings. It flourished in subsequent times as architects wrote and debated about the rules (*kanon*, measure) of their art. Here we see where the study of architectural terminology, especially its etymology, is useful because through the act of naming, an object and the making of this object are invested with meaning. For example: *symmetria* designates the relationship between elements; *tectonics* desig-

[25] Or the pervasive pragmatic rationalism of a E-E. Viollet-le-Duc; or the extensive synthesis of urban form of a L. Krier. It is interesting to note that the systemic treatment of architecture occurred long before architecture was classified as a fine art in the middle of the eighteenth century. Architecture was generally classified as an art that served utility, rather than a liberal or a fine art, until the abbé Charles Batteux's indirect classification of architecture in *Les beaux-arts réduits à un même principe* of 1747. See P. O. Kristeller, 'The Modern System of the Arts: A study in the history of aesthetics' I, and II, in *Essays on the History of Aesthetics*, P. Kivy (ed.), Library of the History of Ideas, (Univ. of Rochester Press, 1992).

[26] This is the Aristotelian remark about art representing things the way they ought to be, as opposed to the way they are.

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nates those elements of form, assemblage of parts, and material properties that lift mere construction to the level of architecture; and *decor*, or propriety, designates a suitability between the building's disposition, the purpose for which it is made, and the context within which it exists.

There is, of course, no guarantee that word-concepts have been or will be used consistently by theorists, and with the same meaning. Some word-concepts have retained their meaning for centuries. Consider for example the word *mimesis* or *imitation*, which was used uninterruptedly from antiquity until the middle of the nineteenth century and further, to designate the relationship between the idea of a model (natural or human) and a particular work. Recently, however, it has become confused with the copy, as if the two words were synonymous. This confusion allowed for the concept of imitation to be displaced by simulation, thus impoverishing our theory and our understanding. Yet, other word-concepts experience a gradual change which allows for enriching shades of meaning to occur; for instance the Latin word *decorum* has been rendered as propriety, aptness, suitability, *convenance*, and *bienséance*. Other words still, have come to be used indiscriminately with such multiple meanings that they became meaningless—a brief observation of the current uses of the word 'creativity' is a case in point. Herein resides an important point for the architectural theorist to consider: a word that accepts a *few* meanings enriches the architectural dialogue; whereas a word that accepts *any* meaning given at any whim becomes meaningless, thus harming the exchange of ideas. The above concerned that special rhetorical art of philosophical narration which we call the architectural theoretical *discourse*.

NATURE. To define the nature of architectural theory amounts to explaining the reasons for philosophical inquiry in architecture. There is much philosophy in architectural theory, but what usually passes unnoticed by architects is how much philosophy itself has relied on architecture. Since Descartes, architecture has been metaphorically used by philosophers as a model for the foundations of their systems and of the hierarchical and harmonious relations between the various parts of these systems. Philosophy is thinking about thinking, or the mind reflecting upon itself in the act of reflecting. This partially characterizes architectural theory when thinking considers making and dwelling as a single activity: to dwell as a maker. The mind of the maker-dweller considers two orders: the order found in Nature (natural laws) and in nature (natural products); and the order inherent to the mind that builds a 'world

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within the world' (from the humble hut to the opulent city) in imitation of or in opposition to the first order.

Architectural theory derives from the dialectical movement between these two orders. On the level of knowledge, this thinking links *truths of reason*, or first principles or axioms, with *realities of fact*, which are contingent on sense-based experience for their justification. The theoretically inclined mind reflects on two mental states: those involving sensory qualities, the *qualia*; and those involving content or *intentionality*, (artistic will). In other words, intentionality and qualia pertain to the mind-body relationship. Theory is also charged with value judgment because it reflects on what architecture or architectural elements *are*, on what they *could* or *ought* to be, and also on what they should *not* be. It is at this level that theory begins to occupy a causal rôle vis-à-vis architectural practice. In this way, theory as the reasoning about experience concerns things within the contingencies of the historical context (the way things 'are'), but also outside such a context (the way things 'should' be, the enduring aspects of experience). The above concerned the *nature* of architectural theory on mental and epistemological levels. Taken as a whole, our discussion of the scope, discourse, and nature of architectural theory stands as its definition as a mental discipline.

We are now in a position to link *theory*; *poetics*; and *practice*—a triplicity that proves to be a more fecund set than the usual dualist opposition between theory and practice. Theory can be a contemplation of the world of action without necessarily taking a definite course of action that will effect representations. Still, theory in architecture is not and end in itself, because its purpose is not limited to reflecting about the different architectural representations, but also to transform[27] them, even if this transformation remains 'on paper'.

This transformation is at its best when it answers to necessity. However, when theory and transformation become an end in themselves and when this transformation proliferates, then the very nature of the architectural field (or any field for that matter) is imperiled. The ensuing outcome is a situation where there is no internal stability to the field in question that will enable knowledge and judgment of the resulting forms, and whether they answer to a public Good, a private whim, or no good at all. Here is where prac-

[27] The Marxist contribution to this issue has been that the correspondence between theory and practical reality does not only reside in the production of an adequate theory, but also in the production of a socially practical reality.

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tice, or rather practical reason[28], enters, because practice is not simply the assembling of means in view of achieving a planned action. *The faculty of a free mind, to use reason practically, requires criteria which can be every rational agent's criteria, with the rational and ethical assumption that supposes that such criteria can function on a universal level*[29]. Here, poetics (Greek: *poesis*) as the creative artifice that produces objects based on a certain technique or art (Greek: *techné*) based on rational rules, takes a mediatory stand between theory and practical reason.

Faces of theory

Theory has been polyvalent. Some of its emphases continued throughout history, while other emphases changed at different times and contexts, but it never had a single set of concerns. For example, although sixteenth century theory exhibited a keen occupation with columnar types (the orders), and although parts of twentieth century theory bore the strong mark of functionalism, especially for architects who sought to derive aesthetic principles from functionalist concerns, it would be reductive to conclude that the architectural theories of those centuries were about the orders and functionalism. Theory has worn many faces; and those who influenced it have not always been architects or practicing architects. Cl. Perrault was a medical doctor; F. Blondel was a diplomat, mathematician and military engineer; M-A. Laugier was a priest and a diplomat; F. Algarotti was a writer and collector; J-J. Winckelmann was an art historian; A. C. Quatremère de Quincy was an art theorist; and J. Ruskin was an art critic and political thinker.

Theory can be *prescriptive*, finding its later fulfillment in practice, e.g. when a set of theoretical tenets are used as a pedagogical basis, based on the wisdom of past generations. Theory can be *descriptive* of operative rules derived empirically. Theory can even be *proscriptive* when it is unaccepting of other views, or when it heralds only one possible approach[30]. Moreover, as a corrective to some of the aspects mentioned above, theory can be *normative*—in the

[28] This is what Aristotle called *phronésis*, the soundness of judgment that governs choice in practice. See *Nichomachean Ethics*, Book VI.

[29] See I. Kant, *Critique de la raison pratique*, chap. 2, in *Oeuvres*, Pléiades, Paris, vol. II, p. 677.

[30] This applies to *tabula rasa* approaches. For example the proscription of historical knowledge that became prominent early in the twentieth century.

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sense of establishing rational norms—without being restrictive or proscriptive. Theory can address buildings the way they can and should be, but also it develops criteria for judgment between what has been and what will be built. For if theory is only descriptive, then it allows for no criteria for conceptual judgment. Theory can also take refuge in remote or private intellectual regions where the result is a complete detachment from applicability. This is the theory that Vitruvius termed the pursuit of shadows at the expense of substance. For example, despite its illustrious intellectual heights, Florentine neo-Platonism added to the rift between theory and practice by so excessively exalting the *idea* that the design itself became the most valued thing and the realization of this design came to be seen as a degraded version. The excess of theory can also be inhibitive of practice as in the example of someone whose theoretical views have become so inflated that they inhibit action. Theory can give itself the task of understanding that which in construction exceeds the reality of construction, in other words, the aesthetic values which elevate mere building to the level of architecture. The same theory sometimes informs and can be used to explain different forms of tectonic plasticity. For example, the imitation of nature occupies the same paradigmatic importance for the Classic and the Gothic. Finally, theory can enhance practice by sharpening the architect's intellectual skills, and revealing connections that had hitherto been overlooked. Ultimately, the architect is necessarily concerned with general principles that endure throughout centuries and contexts, as well as the empirical lessons of daily practice. Both of these spheres should not be seen as disconnected bodies of knowledge, for it is within the lessons of contingency that the enduring is experienced.

Architectural theory and its terminology have various provenances: the didactic treatise, (including the course books); the technical treatise; the *précis*; the *parallèle*; the *receuil*; the *mémoire*; the essay; the dictionary; and even some pattern-books. To these, one naturally includes philosophical; theological; artistic (e.g. fine arts theory, aesthetics); historical; socio-political; literary; and technical works. The latter group of disciplines exert peripheral—though significant—influences on the practice of architecture and the shaping of its theory, for obviously, architecture is not philosophy or politics, although it involves profound thinking, and contributes to the larger Good of a city. All of these sources of differing values that bear on architectural theory directly or indirectly, have to be assessed with a clear understanding of the boundaries of architecture as an art that synthesizes other arts. In other words, a caution should be

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kept in mind, that the confluence of many a discipline within the architectural endeavor involves two risks: eroding architecture's clear boundaries, or treating it as symptomatic of these disciplines.

Architectural theory emerges from within a historical context, but it also transcends this context, acquiring validity and applicability in cross-temporal and cross-cultural ways. In other words, although theory, as all productions, emerges within a historical context from which it should not be divorced, it is also irreducible to this context. The historicist aim to study human productions *only* within the context of their historical development brought about a useful understanding of a certain context for its own sake, its own spirit, based on a thorough examination of the development of factual material. But in considering all cultural phenomena as historically determined within a unique and changing context, historicism helped to establish relativism as soon as comparisons between contexts were made. Relativism recognizes the role of varying sociopolitical forces in determining diverse individual or collective values of cultural phenomena. It maintains that a cultural phenomenon may or may not have value in itself. It is only significant for an individual or for a society[31]. Such a view, rejects cultural—or cross-cultural—universals in an *à-priori* manner. Herein lies a source for many a problem in the study of art and architecture, for relativism erects barriers between contexts. A case in point is the writing of a history of architecture where the set of concerns of one period is seen as separated from other contexts or periods, followed by the assumption that such a position is universally applicable to the story of architecture. This is a view of history as a history of separate forces that develop through ruptures. For example, some architectural historians have equated changes in style with the will to realize rupture from a context. But is the history of architecture and urbanism not laden with both continuities and ruptures? And does continuity not thrive within a variety of architectural types, characters and styles?

Clearly then, the writing of a history is the writing of a *view* of history according to certain ideological underpinnings. Here, the student of architectural theory will find it beneficial to differentiate between a discipline's aim to carve its own academic territory (historiography), and the resulting transformation of its very subject of

[31] Relativism is an unwilled outcome of historical forces, not an artistic principle that governs artistic practice. It is different from eclecticism which implies that subjective views are selected from many traditions and places, leaving open the question as to whether these selections are to be synthesized within a coherent system.

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study (architecture). *Views of history are changed by the very writing of history*. Like the philosophers who saw patterns and projected patterns within history, such as the explanation of events based on teleological arguments, so did theorists and historians of architecture since the nineteenth century write histories of architecture according to various historiographical categories that satisfied their aims at systematizing historical phenomena. Put differently, the definition and study of architectural theory according to the historian is not necessarily the same as that of the architect who intends on putting to use some theoretical positions deriving from various contexts.

What has been said above pertains to architectural theory in general, including written theory. Still, there is no causal relation between written architectural theory and creative production and good architecture. Nor is the proliferation of architectural theories a guarantee of architectural quality. Compare for example the building of great Cathedrals in the middle ages, with the scant presence of written theoretical material[32]. Conversely, contrast the recent explosion of architectural theoretical wars with the symbolic poverty of much in contemporary architecture. Certain periods e.g. antiquity and the middle ages, also pose problems of documentation and their architectural theory has to be inferred mostly from the buildings. These buildings, in the final analysis, constitute the measure of fulfilment or failure of the architectural endeavour. Conversely, at times we have both the text that specifies certain characteristics and the building which is supposed to embody these characteristics, and yet the actual building may diverge from the text. A case in point is the work of Palladio. However, that theory and practice do not always coincide should not evoke surprise because in the movement between conceptualization, the enunciation of principles and their application, architects posit what architecture *ought* to be, and practice what it *can* be depending on a myriad contingent factors which fall partially under their influence. A comprehensive view of

[32] This of course does not imply that there was no architectural theoretical reflection in the middle ages. Various forms of guilds (compagnonage) continued a long tradition of geometric knowledge, and tectonic know-how which were orally passed from teacher to pupil. See R. Bechmann, *Villard de Honnecourt : la pensée technique au XIIIe siècle et sa communication* (Paris: Picard, 1991). Also, notwithstanding E. Panofsky's appealing argument that there is a parallel between the structure of a cathedral and the theological *summa*, it is possible to produce great architecture without written architectural theory. See *Gothic architecture and scholasticism*, (Archabbey Press, 1951).

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architectural theory cannot neglect the buildings themselves; for therein lies the confluence of the many factors that make architecture the collective work that it is. Architectural theory does not simply stay written, it has to be built.

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