

# THE REASONING OF ARCHITECTURE TYPE AND THE PROBLEM OF HISTORICITY

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von der Fakultät VI Planen Bauen Umwelt  
der Technischen Universität Berlin  
zur Erlangung des akademischen Grades

Doktor der Ingenieurwissenschaften  
– Dr.-Ing. –

genehmigte Dissertation

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Tag der wissenschaftlichen Aussprache: 26. April 2013

Berlin 2013

D 83



## **ACKNOWLEDGEMENTS**

I am greatly indebted to Fritz Neumeyer for agreeing to supervise my work and his valuable advice. I also wish to express my gratitude to my examiner Charles Rice, and Johannes Cramer for chairing the doctoral committee.

Thanks are further due to a number of my colleagues and friends for their probing questions, support, and good advice.

## **ABSTRACT**

This dissertation considers type-theories as epistemological and discursive arguments by which a synthesis of the form of architecture and the city is organised. Through typal reasoning, form acquires a multi-layered historical, social, cultural, and symbolic dimension that is both limited by and in excess of its material reality. Moreover, it is through the problems of type and historicity that a modern reasoning of architecture has become defined.

Within this history, this thesis examines three inaugural theories of type emerging in the first half of the nineteenth century in the work of Antoine-Chrysostome Quatremère de Quincy, Jean-Nicolas-Louis Durand, and Gottfried Semper. Consistent with the first three principles of transformative composition in rhetoric, they respectively articulate the problem of invention, disposition, and style. The dissertation re-examines the possibilities and failures of type, which were defined by the historiographical reviews of its discourse in the latter half of the twentieth century. Based on a historical revision of the inaugural theories, the typological debate instigated by Neorationalism after the demise of the Modern Movement in the 1960s can be critically revisited. Exemplified by the writings of Aldo Rossi and Oswald Mathias Ungers, type and typology became central to understand and explain the context and interrelationships of architecture to the city.

The three inaugural theories, despite their fundamentally different conceptions of type and typology, argue for a modern reasoning of form through the means of abstraction. Grounded in the French eighteenth-century normative discourse in architecture and challenging the conventions of classical authority, their historicist interpretations construct various arguments for an autonomous architectural discipline and knowledge. In the process, mimetic imitation is replaced by conceptual, memetic, and symbolic abstraction, but also a diagrammatic reduction.

## KURZFASSUNG

Diese Dissertation betrachtet Typus-Theorien als epistemologische und diskursive Argumente, durch die eine Synthese der Form der Architektur und der Stadt organisiert ist. Form erhält durch Typus-Begründungen eine vielschichtige historische, soziale, kulturelle und symbolische Dimension, die gleichzeitig beschränkt bei und mehr ist als ihrer stofflichen Wirklichkeit. Und es ist durch die Probleme des Typus und der Geschichtlichkeit, dass die moderne Begründung der Architektur definiert wurde.

Innerhalb dieser Geschichte, untersucht diese Dissertation drei gründende Theorien des Typus, die in der ersten Hälfte des 19. Jahrhunderts mit Antoine-Chrysostome Quatremère de Quincy, Jean-Nicolas-Louis Durand und Gottfried Semper entstehen. Übereinstimmend mit den ersten drei Grundsätzen der transformativen Komposition in der Rhetorik arbeiten sie entsprechend das Problem des Erfindens, der Disposition und des Stiles heraus. Diese Arbeit ist ein erneutes überdenken der Möglichkeiten und des Scheiterns des Typusbegriff, die in den historiographischen Rezensionen des Diskurses in der zweiten Hälfte des 20. Jahrhunderts definiert wurden. Basierend auf einer historischen Revision der gründenden Theorien kann dann die typologische Debatte, die vom Neorationalismus nach dem Niedergang der modernen Bewegung in den 1960er Jahren angeregt wurde, wieder aufgenommen und kritisch fortgeführt werden. Beispielhaft erläutert in den Schriften von Aldo Rossi und Oswald Mathias Ungers sind Typus und Typologie von zentraler Bedeutung, um den Kontext und die Zusammenhänge von Architektur und Stadt zu begründen.

Die drei gründenden Theorien entwickeln trotz ihrer grundlegend unterschiedlichen Konzeptionen von Typus und Typologie, gleichermaßen ein modernes Verständnis von Form durch die Mittel der Abstraktion. Verankert in dem in Frankreich geführten normativen Diskurs in der Architektur im 18. Jahrhundert, fordern sie die Konventionen der klassischen Autorität heraus, wobei ihre historistischen Auslegungen verschiedene Grundlagen für Argumente einer autonomen Disziplin und Wissens der Architektur bilden. Dabei ersetzen sie mimetische Nachahmung nicht nur durch konzeptionelle, memetische und symbolische Abstraktion, sondern auch durch diagrammatische Reduktion.

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## INTRODUCTION

*I think that the beautiful works of art have rather given birth to theories, than theories to beautiful works. But there exist also theories which are, in their kind, beautiful works, and from which many derive pleasure.*

Antoine-Chrysostome Quatremère de Quincy, *An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts* (1823)

# 1 OBJECT OF RESEARCH

This dissertation considers theories concerned with type as epistemological and discursive arguments by which a synthesis of the form of architecture and the city is organised. Through typal reasoning, form acquires a multi-layered historical, social, cultural, and symbolic dimension that is both limited by and in excess of its material reality. Moreover, it is through the problems of type and historicity that a modern reasoning of architecture has become defined.

Throughout its two hundred years of historiography in architecture, the distinction, misunderstanding, and synonymy of type as an *idea* or *model* resulted in the persistent transformation and appropriation of its meanings. The disparate definitions are evident in the pursuit of historicist and normative types seen as immutable models able to restore received forms, which is in stark contrast to the use of typology to justify a morphological evolution of forms by assuming architecture is a rational and positivist science. These contradictory positions made a meaningful discourse of type and typology in the twentieth century soon impossible. Yet, as Kenneth Frampton recognised in 1973, a ‘typological burden’ remained.<sup>1</sup> This resulted by the late 1970s, so Micha Bandini, in typology’s reduction to a convention of received form and a ‘low-level theory’ accepted merely by intellectuals.<sup>2</sup>

Although architecture continues its reliance on codified types and maintains principles of formation that are historical, currently a typological debate is eschewed due to this connotation with static and pre-taxonomised forms. Today, ‘type’ and ‘typology’ stand for an accepted norm and classifying device without scope for critical invention. They have become the repository of primarily historical and formal disciplinary knowledge. This is partially attributable to Neorationalism, which established the last coherent typological discourse in the 1960s but was largely unsuccessful in making it operative to design or overcome its functionalist definition by the Modern Movement. A last desperate attempt to claim for typology’s conceptual usefulness was made by Vittorio Gregotti in ‘The Grounds of Typology’ (1985), who professed: ‘We must accept that throughout the seventies it has been an improper use of the notion of type which has proved, in good or bad, most productive. I believe that today a serious debate on the notion of building type and on its value (not ideological but also as a concrete project tool) can only lead to a thorough rediscussion.’<sup>3</sup>

When however by the mid-1980s the consensus was reached that typology had failed to effectively synthesise theory and practice, architecture expectantly turned its attention to

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<sup>1</sup> Kenneth Frampton, ‘Twin Parks as Typology’, *Architectural Forum*, 138.5 (1973), 56–61.

<sup>2</sup> Micha Bandini, ‘Typology as a Form of Convention’, *AA Files*, 6 (1984), 73–82.

<sup>3</sup> Vittorio Gregotti, ‘The Grounds of Typology’, *Casabella*, 509–510 (1985), 4–7 (p. 4).

the diagram as a means to invent, which promised a liberation from the strictures of typology, history, and function, and a seemingly novel organic reasoning of form. For example, Peter Eisenman utilised the diagram to mediate between an 'authorial subject' and 'architectural object'.<sup>4</sup> Nevertheless, all practices of diagramming aiming for formal differentiation can be considered to rely on type-forms or have an intrinsic scope for typological production. Reflecting on Eisenman's use of the diagram, Jeffrey Kipnis acknowledges this by stating the opposite: 'Diagrams underwrite all typological theories.'<sup>5</sup> It is further no coincidence that Kipnis describes the diagram as 're-originating', as re-establishing an origin of architectural formation by referring to type. A similar effort to reconceptualise architectural origins had motivated Antoine-Chrysostome Quatremère de Quincy at the turn of the nineteenth century to formulate the first 'system' of architecture based on a triad of construction, order, and embellishment, whereby he introduced the concept of type.<sup>6</sup> To Kipnis, the dynamic formalism of the diagram changes architecture from a cultural discourse and institutional critique to an internal disciplinary consideration. The causality of the re-originating diagram is objective while its effects are relative and subjective, offering the simultaneity of generic and specific form.<sup>7</sup> However, the premise that architecture does not just exist as a specific object but as the generic possibility of objects is fundamental to both the diagrammatic and typological function. The typo-diagrammatic purpose is to organically define and limit possible manifestations of a conceptual idea by employing specifying models without restricting invention to finite formal representation. Consequently, the dissertation proposes the diagrammatic function as essentially relying on a typological abstraction that takes place within the disciplinary knowledge and limits of architecture, an abstraction however, that in its synthesis of form also considers historical, contextual, and socio-cultural aspects.

An effective communication of a generating idea and its transposition requires legibility and reciprocated intellection, which depend on a shared knowledge and language, in short: conventions. Communicable meaning in architecture accordingly derives from coherent and consistent descriptions of historical, functional, structural, formal, technical, symbolical, critical, or socio-cultural concepts and their combinations. Design inventions that follow conventions are presumed principled, regardless of individual aesthetic, procedural, or ideological preferences. In this way, invention is structured by a typo-diagrammatic function that is limited by, but importantly also able to transgress, the means of conventions.

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<sup>4</sup> Peter Eisenman, 'Diagram: An Original Scene of Writing', in Peter Eisenman, *Diagram Diaries* (New York: Universe Publishing, 1999), pp. 26–35.

<sup>5</sup> Jeffrey Kipnis, 'Re-originating Diagrams', in *Peter Eisenman: Feints*, ed. by Silvio Cassarà (Milan: Skira, 2006), p. 196.

<sup>6</sup> Compare Antoine-Chrysostome Quatremère de Quincy, 'Système', in *Encyclopédie méthodique: Architecture*, 3 vols (Paris: Veuve Agasse, 1788–1825), III, p. 424.

<sup>7</sup> Kipnis however admits that despite a specificity of medium, the certainty of recognition and clarity of a contained diagram remains ambiguous in its intellectual or emotional motivation and, to a degree, in its reading and interpretation; see 'Re-originating Diagrams', pp. 193–201.

The problem to define invention beyond conventions is acknowledged by Julien-David Le Roy in *The Ruins of the Most Beautiful Monuments of Greece* of 1758. Clarifying the difference and interrelation of generic and specific form, he is the first to distinguish between the *history* and *theory* of architecture, and recognises the architectural object as simultaneously obligated to historical and cultural as well as formal criteria. To synthesise a metaphysical general and formal specific reading of architecture, he accepts the architectural object as historical and, in order to resolve arising contradictions, develops a typological analysis based on diagrammatic abstraction. Therefore, abstraction is critical for typological reasoning as a means of withdrawing and separation. Abstraction separates in thought and considers independently from substance by envisioning an idea beyond its representation.<sup>8</sup> However, the mediation between an abstract idea and its material realisation requires translation, a transfer from one to another while retaining sense. Possible transformations include a change in form, appearance, substance, or meaning. And in architecture, they are generally either a formal transposition based on the diagram, outlining a general scheme of the shape, the relations of its parts, and their characteristic variations without representing the exact appearance of an object, or a symbolic translation, often employing allegory or analogy.

Architectural theories, especially those relying in their systematising of disciplinary knowledge on typological concepts, persistently refer to the classical fundamentals of discourse: logic (dialectic), grammar, and rhetoric. For a rational abstraction of ideas and their translation into form by design, type presumes dialectics but in practical terms requires grammar—the mechanics of a language—and rhetoric—the utilisation and adaptation of language. A parallel argument can be made for the diagram, as Eisenman has continuously done starting with his dissertation *The Formal Basis of Modern Architecture* (1963). Thus Quatremère's notion of type and Eisenman's concept of the diagram signify larger discourses concerned with a theoretical and structuring organisation that embodies and establishes a specific architectural syntax that is systemically implementable.

The function of language or, more precisely, the structure of rhetoric—the effective and persuasive use of language to relate content and form—is recurrent in all type-theories. Therefore, one can interpret three theories of type that emerge in the first half of the nineteenth century as corresponding to the first three principles and canonical order of rhetoric and *poietic* composition: *inventio*, *dispositio*, and *elocutio*.<sup>9</sup> According to the

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<sup>8</sup> *Abstract* etymologically derives from the Latin *abstractus*, meaning to 'draw away' (*abs*, away from, *trahere*, *tractum*, to draw); see *Chambers's Twentieth Century Dictionary of the English Language*, ed. by Thomas Davidson (London: W. & R. Chambers, 1908).

<sup>9</sup> Established by Aristotle in *Rhetoric* and further articulated by Cicero in *De inventione* and *De oratore* or Quintilian in *Institutio Oratoria*, the first three canons of rhetoric are concerned with transformative composition (*inventio*, *dispositio*, and *elocutio*), whereas the two remaining deal with its performance, *memoria* (memory and its involvement in recalling the speech) and *pronuntiatio* or *actio* (delivery or presentation of the speech). For a survey of Aristotle's rhetorical theory see Friedrich Solmsen, 'The

Enlightenment, they belong to a tradition of ascertaining language as an epistemic, transparent, and truthful medium of communication. Quatremère's theory of type articulates the first and indispensable canon of 'invention' (*inventio*). He establishes a systematic and methodological architectural theory that defines the disciplinary means and principles by which coherent arguments are generated in practice.<sup>10</sup> Accordingly, his *Encyclopédie méthodique: Architecture* (1788–1825) presents type as the discursive resource providing a structural idea and framework for invention, whereby he questions the traditional meaning of *inventio* as the 'discovery' of something already existing and by definition historical. This notion of type is comparable to Aristotle's concept of rhetorical *topos*, a general argumentative form with the novel capacity to abstract, concretise, and instantiate according to specific conclusions. Jean-Nicolas-Louis Durand's methodology of architectural design in turn is based on the second canon of 'arrangement' (*dispositio* or *taxis*), which follows once an argument or idea is strategised by invention. Arrangement manages the relative and iterative ordering of the parts to the whole and organises an argument into an effective discourse that states, outlines, and provides proof for a given case or problem. Durand's corresponding didactic method, outlined in the *Précis of the Lectures on Architecture Given at the École Polytechnique* (1802–05), structures principles and rules of disposition that follow the conventions of rhetoric and discourse, in order to abstract the formal organisation of received models. Finally, Gottfried Semper's doctrine relates to the canon of 'style' (*elocutio*) by defining the appropriate and effective modes of expressing ideas. Whereas invention determines *what* is articulated, style articulates *how* it is communicated by observing the four elementary components of: correctness, clarity, appropriateness, and ornament. These categories are evident in Semper's theory of style, first comprehensively formulated in his London Lectures of 1853–54, and his search for a grammar of ornament that explains stylistic development as appropriate to continuously changing artistic language and context.

The three inaugural theories of type and their rhetorical modes fundamentally differ in their conception of type and typology and instrumentalisation of history, abstraction, and translation. While Le Roy's typo-diagrammatic double reading of history and theory is advanced in the theories of Quatremère as an absolute, conceptual abstraction, it re-emerges in Durand's diagrammatic method as a formal abstraction and procedural differentiation of models. Whereas Quatremère reconstructs history to formulate a new

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Aristotelian Tradition in Ancient Rhetoric', *American Journal of Philology*, 62.1 (1941), 35–50. As Lee Rensselaer points out, Alberti's threefold division of painting into *circonscriptione* (drawing of figures in outline), *composicione* (indication of planes within the outline, arrangement, decorum, etc.), and *receptione* (rendering in colour) in *Della pittura* is an indirect adaptation of the first three divisions of the art of rhetoric, while the division of painterly labour by Ludovico Dolce into the categories *inventione* (the mental general plan of the composition prior to its execution), *disegno* (preliminary sketch of the painter's invention), and *colorito* (final rendering in colour) are a direct adaptation; see 'Ut Pictura Poesis: The Humanistic Theory of Painting', *Art Bulletin*, 22.4 (1940), 197–269 (pp. 264–65, Appendix 2).

<sup>10</sup> Quatremère's library included *La Rhétorique d'Aristote* (Paris, 1822) with notes and an index of parallels in Cicero and Quintilian; see Fournel, *Bibliothèque de M. Quatremère de Quincy de l'Académie des inscriptions et belles-lettres, secrétaire honoraire de l'Académie des beaux-arts* (Paris: 1850), p. 27.

theory of knowledge, Durand rejects history in favour of a new practice that continues Le Roy's preoccupation with formal principles and diagrammatic reduction. This reveals the often overlooked influence of Le Roy on Quatremère and Durand, who develop and synthesise the problem of the architectural object as a historical, conceptual, cultural, and formal object. When Semper synthesises their syntactic approaches, he understands the formation and development of art-forms as defined by both an intellectual abstraction of ideas and a material abstraction of forms. Art theory and the history of forms are profoundly linked in Semper's doctrine of style by presuming an interrelation of cultural context and state of technology. Despite their differences, all three theories argue for a modern reasoning of form through the means of abstraction. Grounded in the French eighteenth-century normative discourse in architecture and challenging the conventions of classical authority, their historicist interpretations construct different arguments for an autonomous discipline and knowledge. In the process, mimetic imitation is replaced by memetic, conceptual, and symbolic abstraction but also a diagrammatic reduction. Therefore, the development and synthesis of the complementarities between type and diagram, abstraction and translation, and idea and model, are central to this dissertation to provide a new historiographical perspective on typal reasoning, often overlooked in the twentieth century discourse focused on typological reasoning.

The aim is therefore to re-examine the three inaugural theories: how Quatremère's idea of type proposes a conceptual invention that conditions form but is prior to its material formation, and how Durand's methodical disposition and Semper's doctrine of style conceive the transposition of a generic idea into a specific form diagrammatically. Yet the reframing of their theories as complementary and inaugural speculations defining the essential layers of typal reasoning is complicated by the fact that Durand in his utilisation of genres as formal norms does not theorise type, while Semper mainly considers type indirectly through the problem of style. However, if Quatremère's idea of type can be said to signify a rhetorical *topos* that precedes materialisation, the different conceptual and diagrammatic layers of type have to be clarified, with Durand and Semper becoming indispensable to understand the possible transposition of form. Thus, it can be argued that the three form an important corpus of first modern theories systematising the epistemological, conceptual, historical, and material formation of architecture. The clarification of their interrelations requires a twofold questioning and analysis of their theories by contextualising each specific understanding of type or typology within the larger discourse of architectural reasoning. On the one hand, this prompts the fundamental question of what constitutes typal or typological reasoning, and on the other, what are the modes of analyses and translations that make it operative. Re-reading Durand's work as clarifying a typo-diagrammatic function and Semper's as arguing for a cultural aspect of material formation is important to understand the historiography of typal reasoning and clarify its relevance to contemporary problems.

Following the perceived failure of the Modern Movement and its anti-historical stance, a renewed interest in history re-established a nineteenth-century dialogue between conceptual and formal notions of type and between history and theory. Spurred on by the socio-political programme of Italian Rationalism, the typological debate in the 1960s importantly related architecture to the city, as exemplified by Aldo Rossi's *The Architecture of the City* (1966), and resulted in an enquiry into the applicability of type and typology to architecture, the city, and the wider social field. With Neorationalism, a line of questioning emerged that was premised on a cultural coherence and continuity in the European city that could be analysed in historical terms and through the physical evidence provided by the formation of objects, seen to characterise a particular context of architecture. Type became the embodiment of formal and social memory, a collective memory, endowed with the power to renew or retrieve history and culture.

Inspired by the neorational doctrine, for example, Léon and Rob Krier return to normative, neoclassical space and building typologies. While contemporaneous to Rossi reading Quatremère on type, Oswald Mathias Ungers articulates a theory in which the question of typological thinking and morphological transformation are closely aligned with Durand's doctrine. The neorational discourse was continued, but significantly modified, in the 1970s postmodern discussions on the nature of the architectural object and the relevance of history. Amongst others, Robert Venturi and Colin Rowe implied typology as impoverished, as providing a borrowed and at best symbolic meaning that could be described as a message or texture. Unsurprisingly, with the neorational and postmodern attempt to recollect a historiographical theory of type and typology, not just the questions of transformative composition in rhetoric but also the rhetorical canons of *memoria* and *pronuntiatio*—the recalling of content and its delivery—became significant, if often disconnected from the hierarchical order of the canons and serving a self-referential purpose. At the same time, cursory studies of Quatremère and Durand were appropriated to define type as either a divisive typo-morphological category or a historical and cultural reduction. Hence, this dissertation examines the possibilities and failures of type, which were defined by the historiographical reviews of its discourse in the latter half of the twentieth century. Based on this historical revision the typological debate instigated by Neorationalism is revisited, especially the writings by Rossi and Ungers.

Investigating how the discursive knowledge produced by type remains specific to the architectural discipline and makes arguments for its conditional autonomy, this dissertation considers type-theories as frameworks for a synthesis of architecture with other related fields and concepts: the arts and science, society and its culture, technology, and the city. The argument explored is how the concept of type provides a rational basis to the understanding, communication, and formation of architecture—and of the city—and how it has a historical, socio-political, and symbolic-cultural dimension, without which ideas of form and their materialisation ultimately remain meaningless.

With a pervasive reductive understanding of type and typology, it is important to clarify the historiographical concepts and changes in thinking that have shaped its competing and at times contradictory definitions. This limits the scope of this dissertation to theories that explicitly explore ideas of type. To understand the intrinsic relationships between *type* and *typology*, but also *typicality* and *diagrams*, their convergences and limitations informing disciplinary instruments and knowledge, normative aesthetic categories, and authorial desires, have to be re-discussed.

## 1.1 TYPE, TYPOLOGY, BUILDING TYPES, AND TYPICALITY

'Type', as Johann Gutenberg's invention of the modern printing press with movable types around 1445 demonstrates, is a medium of non-imitative reproduction. Similarly, 'typology' first denoted in the study of scriptures reasoning by analogy in order to interpret the Old Testament as prefiguring the events and ideas of the New Testament: typology was the symbolic correlating of meanings.<sup>11</sup> The authority and use of types by Jesus Christ implied 'that we do not fully understand reality unless we perceive it typologically'.<sup>12</sup> Until the eighteenth century, this religious meaning was upheld, as Denis Diderot and Jean-Baptiste le Rond d'Alembert's entry of 'Type' in the *Encyclopédie* proves.

The notion of 'type' in architecture today, however, is commonly understood as describing a group, class, or category with certain shared characteristics, which generally refer to typological classification according to use (e.g. church, school, housing) or morphology (e.g. radial plans, courtyard-buildings).<sup>13</sup> 'Typology' in turn denotes the study of types and the analysis of their characteristics.<sup>14</sup> Paul-Alan Johnson states, 'strictly, "typology" is the knowledge (-logy, Greek *logos*) and study of types, their succession and their meaning or symbolism, the systemics of types, or the categorical overview of types. [...] To say, for example, that the temple is a "typology" if what is meant is that it is one type of shrine, or to use "typological" as the adjectival form instead of "typical" or "typal", merely confuses.'<sup>15</sup> He distinguishes between *type* as the general (classifying) term and its specific meanings as *archetype*, the original (ideational) pattern for subsequent copies, *prototype*, the first (material) representation of the archetype, and *stereotype*, the conventional and continued reproduction of a (*proto*)*type* when it becomes a norm, the average and typical model in use.

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<sup>11</sup> 'Type' means (Def. 1. a.): 'That by which something is symbolized or figured; anything having a symbolical signification; a symbol, emblem; *spec.* in *Theol.* a person, object, or event of Old Testament history, prefiguring some person or thing revealed in the new dispensation; correlative to *antitype.* *in (the) type*, in symbolic representation.' *Oxford English Dictionary*, 2nd edn (1989).

<sup>12</sup> Catherine Brown Tkacz, 'Typology Today', *New Blackfriars*, 88.1017 (2007), 564–80 (p. 580).

<sup>13</sup> 'Type' is (Def. 5. a.): 'The general form, structure, or character distinguishing a particular kind, group, or class of beings or objects; hence *transf.* a pattern or model after which something is made.' *Oxford English Dictionary*, 2nd edn (1989).

<sup>14</sup> 'Typology' is (Def. 3.): 'The study of classes with common characteristics; classification, esp. of human products, behaviour, characteristics, etc., according to type; the comparative analysis of structural or other characteristics; a classification or analysis of this kind.' *Oxford English Dictionary*, 2nd edn (1989).

<sup>15</sup> Paul-Alan Johnson, *Theory of Architecture* (New York: Van Nostrand Reinhold, 1994), p. 291.

Under the rubric of 'Type' in the *Encyclopédie méthodique: Architecture* (1825), Quatremère secularises and formally introduces this term to architecture.<sup>16</sup> 'Type' represents a conclusion to his encyclopaedic research and intellectual gestation around the turn of the nineteenth century and is central to his comprehensive theory of architecture. Quatremère distinguishes between *type* as an epistemological, metaphysical, and aesthetic category and *model* as signifying a didactic method of design and formal order, asserting their important interrelationship but also a hierarchical separation. He defines *type* as the irreducible structure and generic idea that provides a principled reasoning informing the rules of the model in the design process. Anthony Vidler adds to this, that the ideas of *type* depend on particular epistemes and in architectural theory is synonymous with 'concept, essential form, and building type'.<sup>17</sup> Rossi, also in response to Quatremère, propounds that *type* is 'the very idea of architecture, that which is closest to its essence', and defines *typology* as 'the analytical moment of architecture', the 'study of types of elements that cannot be further reduced', as well as a category that 'plays its own role in constituting form'.<sup>18</sup>

Deriving from an analysis of Rossi, Rafael Moneo in turn claims: 'Type is a diffuse concept that contains a constructive solution—one that gives rise to a space and is resolved in a given iconography—but it also speaks of a capacity to grasp, protect, and make sense of those contents that are implicit in its use.'<sup>19</sup> Giulio Carlo Argan similarly defines *typology* as 'not just a classifying or statistical process but one carried out for definite formal ends', whereby the typological analysis and reduction of the physical function of buildings and their configuration takes place in 'typological series'.<sup>20</sup> Differing from these interpretations, Carlo Aymonino posits 'building typology' as 'the study of the possible associations of elements in order to attain a classification of architectural organisms by types', meaning by element either a stylistic and formal or organisational and structural definition, importantly distinguishing between *formal* and *functional types*.<sup>21</sup> Classification, emerging with eighteenth-century systems of character and genre, is central to Aymonino's concept of *typology*, but also to others, who identify in it a systematic and comparative organisation of

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<sup>16</sup> Quatremère de Quincy, 'Type', in the *Encyclopédie méthodique: Architecture*, III, p. 543–45.

<sup>17</sup> Anthony Vidler, 'The Third Typology', *Oppositions*, 7 (1976), 1–4; and 'From the Hut to the Temple: Quatremère de Quincy and the Idea of Type', in *The Writings of the Walls* (New York: Princeton Architectural Press, 1987), p. 147. He locates the origins of type in architecture earlier in Ribard de Chamoust and Laugier's writings, with only its usage codified by Quatremère; see 'The Idea of Type: The Transformation of the Academic Ideal, 1750–1830', *Oppositions*, 8 (1977), 94–115.

<sup>18</sup> Aldo Rossi, *The Architecture of the City*, trans. by Diane Ghirardo and Joan Ockman (Cambridge, MA: MIT Press, 1982), *L'architettura della città* (Padua: Marsilio, 1966). English translation: *The Architecture of the City*, trans. by Diane Ghirardo and Joan Ockman, with introduction by Peter Eisenman, Oppositions Books (Cambridge, MA: The MIT Press, 1982), p. 41.

<sup>19</sup> Rafael Moneo, 'Aldo Rossi', in *Theoretical Anxiety and Design Strategies: In the Works of Eight Contemporary Architects* (Cambridge, MA: MIT Press, 2005), p. 105.

<sup>20</sup> Carlo Giulio Argan, 'Sul concetto di tipologia architettonica', in Karl Oettinger, and Mohammed Rassem, eds, *Festschrift für Hans Sedlmayr* (Munich: Beck, 1962), pp. 96–101. English translation: 'On the Typology of Architecture', trans. by Joseph Rykwert in *Architectural Design*, 33 (1963), 564–65 (p. 565).

<sup>21</sup> Carlo Aymonino, 'Type and Typology', *Architectural Design*, 55.5/6 (1985), The School of Venice, 49–51.

*building types* according to common traits defined by function, form, and morphology.<sup>22</sup> Therefore Moneo explains *type* as ‘a concept which describes a group of objects characterized by the same formal structure’ according to ‘certain inherent structural similarities’, rooted in the reality of a ‘vast hierarchy of concerns running from social activity to building construction’ and abstract geometry. While he believes that the idea of *type* ‘rules out individuality’, the typological description and production at the same time aims for a single work which is not just the average of a series. Corresponding to Rossi, Moneo states: ‘To raise the question of typology in architecture is to raise a question of the nature of the architectural work itself.’<sup>23</sup>

Quatremère considers *type* as having an essential social and historical dimension and referring to cultural consensus, but distinguishes this from the typological regularity through conventions found in Durand’s method. Carroll Westfall interprets these validating dimensions as a political reasoning underlying all *typical form*: ‘That validity is the political purpose the building is to serve. The purpose a building is to serve defines the type of building it is. [...] A useful way to define *building type* is as a generalized, unbuildable idea of a building knowable only in the intellect and containing within it all the possible examples of actual buildings of that type that have been and can be built.’<sup>24</sup> A social aspect also defines Ahmet Gulgonen and Francois Laisney’s concept of *type* as ‘a material and cultural production of architects and society’, and as ‘an *abstract* object created by one who undertakes the classifying activity’.<sup>25</sup> Thus, *type* is both an analytical tool and conceptual instrument of design that represents the totality of architectural production at a given moment and possible spatial, formal, and functional classifications.

While Jesse Reiser and Nanako Umemoto agree that *typology* is a ‘crude device’ of design, limited by the ‘proscriptive constraints’ of *type*, they state that it is ‘less a classification or codification than it is the basis for a process of constrained material expressions’. It enables a generative selection, which on completion of the architectural object is followed by a performative selection that considers programme and activities by providing a tendentious bias but not definite categories.<sup>26</sup> A questioning of classification also informs Alan Colquhoun’s structuralist reading of *typologies* as ‘fixed entities which convey artistic meaning within a social context’.<sup>27</sup> These pre-established *types* are ‘the

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<sup>22</sup> Compare with the use of *character* and *genre* in the writings of Germain Boffrand’s *Livre d’architecture* (1745); Quatremère’s ‘Character’ in *Encyclopédie méthodique: Architecture*, (1788, 1); Jacques-François Blondel’s *Cours d’architecture* (1771–77); and Durand’s *Recueil et parallèle des édifices de tout genres, anciens et modernes* (1799–1801).

<sup>23</sup> Rafael Moneo, ‘On Typology’, *Oppositions*, 13 (1978), 23–45 (pp. 23–24).

<sup>24</sup> Carroll Westfall, ‘Building Types’, in *Architectural Principles in the Age of Historicism* (New Haven: Yale University Press, 1991), p. 139.

<sup>25</sup> Ahmet Gulgonen and Francois Laisney, ‘Contextual Approaches to Typology at the Ecole des Beaux-Arts’, *Journal of Architectural Education*, 35.2 (1982), 26–28 (p. 26).

<sup>26</sup> Reiser + Umemoto, *Atlas of Novel Tectonics* (New York: Princeton Architectural Press, 2006), pp. 66–67.

<sup>27</sup> Alan Colquhoun, ‘Modern Architecture and Historicity’, in Alan Colquhoun, *Essays in Architectural Criticism: Modern Architecture and Historical Change* (Cambridge, MA: MIT Press, 1981), p. 15.

invariable forms which underlie the infinitely varied forms of actual individual buildings' and 'can be seen as historical survivals which have come down to us in a fragmented form but whose meaning does not depend on their having been organized in a particular way at a particular time'.<sup>28</sup> He further states that 'the system of language pre-exists a particular period or architect. It is precisely through the persistence of earlier forms that the system can convey meaning. These forms, or *types*, interact with the tasks presented to architecture, in any moment in history, to form the entire system.'<sup>29</sup> *Type*, despite its reference to a historical process, has consequently an ahistorical and non-contextual quality.

*Type* commonly refers to a priori and ideal concepts informing the design process; alternatively, it functions as a cognitive knowledge system with underlying functional and morphological or cultural and political considerations. *Typology* hereby enables the analysis and production of architecture by relating the formal solution of instances—often part of a developed series—to comparable organisational and formal precedents. This basic function is summarised by Peter Rowe: 'As heuristics, typologies allow one to make use of knowledge about past solutions to related architectural problems. Further, in a prototypical sense, they embody valid principles that appear to the designer to have exhibited constancy or invariance.'<sup>30</sup> This process of abstracting and translating a generic typal idea, to a typological specific material manifestation—from idea to form via the model—can be termed *typological reasoning*, a principled formal interpretation of concepts, while the conceptualisation of the idea itself is a *typal reasoning*.

Consistent with the neorational doctrine is Léon Krier's definition concerned with 'not functional types but form and space types, typical configurations of the public realm as carved out of the urban material available, of whatever use, idealized and purified of their contextual associations they could then be reapplied to specific conditions'.<sup>31</sup> Driven by practice, he reduces *types* to norms in design and suggests that they become ideal and rational when the synthesis of a functional diagram results in 'classical' form: 'A typology is the classification of buildings by type. A type represents the organisational structure of a building in plan and section. A type evolves until it achieves its basic (i.e. its rational and logical form). The degree of complexity of a traditional type corresponds to the degree of complexity of its function.'<sup>32</sup> Krier further explains that the 'architectural composition should be the coherent and simple realisation of a typological organisation in plan and in section',

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<sup>28</sup> Colquhoun, 'Modern Architecture and Historicity', in *Essays in Architectural Criticism*, p. 15.

<sup>29</sup> Alan Colquhoun, 'Postmodernism and Structuralism: A Retrospective Glance', in *Modernity and the Classical Tradition: Architectural Essays 1980–1987* (Cambridge, MA: MIT Press, 1989), p. 248.

<sup>30</sup> Peter G. Rowe, 'A Priori Knowledge and Heuristic Reasoning in Architectural Design', *JAE*, 36.1 (1982), 18–23 (p. 19).

<sup>31</sup> David Gosling, and Barry Maitland, *Concepts of Urban Design* (New York: Academy Editions, 1984), p. 105.

<sup>32</sup> Léon Krier, *Architecture: Choice or Fate* (Windsor: Andreas Papadakis Publishers, 1998), p. 42.

whereby it ‘must always be based on a typological order’, from which a ‘typological convention’ derives.<sup>33</sup>

Despite the reciprocities between *type* and *typology* and their implied analysis and procedures, frequently conflicting definitions are given to the role of *type* in the typological process, which is exacerbated by the abstract and vague nature of *type*. This is evident in the historiographical deployment of *type* and its extension by supplementary concepts—in the late eighteenth century by notions of imitation and origins, during Modernism by standards and prototypes, in Neorationalism and Postmodernism by archetypes and stereotypes, and more recently by the diagram and *dispositif*. This diversity is further complicated by the fact that type-solutions are dependent on their productivity and meaning in a specific context. The necessary consideration of internal and external factors in the process of realising the material ideas in *type* makes it however difficult to rely on general and pre-taxonomised *types*, and rational consistency remains in principle independent from aesthetic or metaphysical concerns. Emphasising *type* as an open interpretation of potentials, Wolfgang Kemp in a survey of typal concepts writes: ‘Summarising epochs one can safely state that the process of type formation (and progress) is guided by several influencing factors. To these belong primarily: models, formal conventions, normative interventions, forms of rehearsal, problem statement, building programme, general and specific use requirements.’<sup>34</sup> To rationalise this complex of typal production, the use of *typology* is often framed as a logical serial development, frequently following a lineage of (historical) continuity and precedent, or reinterpreted as a notion of *typicality*, a specific consensus of form closely linked to tradition.<sup>35</sup>

A concept of *typicality* already exists in Johann Joachim Winckelmann’s art historical enquiries, but emerges more clearly in the concept of standardisation by Walter Gropius.<sup>36</sup> A *standard* means to him a ‘type-form’ and the ‘reiteration of “typical” (i.e. typified)’ as norms, which as the ‘fusion of the best of its anterior forms’ reduced form to its generic and essential *type*.<sup>37</sup> The *standard* therefore is a norm with a qualitative value and ambition. Rossi’s definition of the *typical* in comparison, opposes Gropius’s formal reduction, as to him *typology* is ‘the manifestation of the typical in architecture [...] Typology is best defined as a particular aspect of architecture, originally conditioned and modified by social-

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<sup>33</sup> Krier, *Architecture*, p. 42.

<sup>34</sup> ‘Epochenübergreifend kann man sicher festhalten, dass der Prozess der Typen(weiter)bildung von mehreren Einflussfaktoren gesteuert wird. Zu diesen gehören in erster Linie: Vorbilder, Formgesetzmäßigkeiten, normstiftende Interventionen, Formen des Probehandelns, Problemstellung, Bauprogramm, allgemeine und spezielle Nutzungsanforderungen.’ Wolfgang Kemp, ‘Der architektonische Typus’, in *Architektur analysieren: Eine Einführung in acht Kapiteln* (Munich: Schirmer/Mosel, 2009), pp. 265–368 (pp. 316–17).

<sup>35</sup> Compare Patrick Lynch, ‘Design as Translation and Typicality: On Autonomy and Contingency in Architecture’, *Building Material*, 16 (2007), 56–59.

<sup>36</sup> On Winckelmann’s notion of typicality see Anthony Vidler, ‘The “Art” of History: Monumental Aesthetics from Winckelmann to Quatremère de Quincy’, *Oppositions*, 25 (1982), 52–67 (p. 56).

<sup>37</sup> Walter Gropius, *The New Architecture and the Bauhaus*, trans. by Morton Shand (Cambridge, MA: MIT Press, 1965; repr. 1998), pp. 34–35.

historical evolution [...] The individualization of typology represents in architecture the reflection of reality in historical form. The character of a realist architecture consists in identifying the typical.<sup>38</sup>

More aligned with Rossi and owing to Dalibor Vesely, Peter Carl defines *types* as ‘isolated fragments of a deeper and richer structure of typicalities’, and differentiates between *typology* as (architectural) objects and *typicalities* as relating to ‘human situations’. *Typicalities* embody to Carl ‘aspects common-to-all’, which are familiar from the conventions of language. In addition, this ‘common-to-all exerts a claim upon freedom’, as freedom only receives meaning through dependencies established by *typicalities* of ‘common meanings’, ‘accents of sounds’, and ‘specifically grammatical aspects’ that are firmly associated with ‘gestures’ and ‘situations’. Therefore Carl insists that the proper understanding of context relies for its meaning on dependencies and the ‘depth-structure of typicalities’, and that this structure, while enabling social and political intercourse, ‘is “flattened” to a single horizon of representation when architecture is reduced to form and space and then even further to information’.<sup>39</sup>

The persistent tension and problematic definition of *type* and *typology* is already evident in the difference between Quatremère’s theory of *type* and Durand’s design method based on *typologies* as genres. This conflict continues, for example, with Giuseppe Samonà’s understanding of *typology* as a ‘form of knowledge, partly factual, partly creative, which expresses the method of giving physical space its urban structure’ by formulating typological propositions that ‘reveal a series of new facts which are outside architecture’, and Gregotti’s contrasting statement that *type* defines a ‘stable system of classification’ and ‘a formal model of the project’.<sup>40</sup> Therefore, a definitive meaning of *type* and *typology* is perhaps impossible, as Le Roy’s double typological reading in the 1770 edition of *The Ruins* already suggests. However, one can distinguish between a *typal reasoning*, one that is foremost conceptual, and a *typological reasoning* that is predominantly formal.

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<sup>38</sup> Aldo Rossi, *Architettura del realismo*, 14 (1969); Aldo Rossi Papers, Box 1, Folder 18. Trans. by Mary Louise Lobsinger in ‘That Obscure Object of Desire: Autobiography and Repetition in the Work of Aldo Rossi’, *Grey Room*, 8 (2002), 38–61 (p. 53).

<sup>39</sup> Peter Carl, ‘Type, Field, Culture, Praxis’, *Architectural Design*, 81.1 (2011), Typological Urbanism, 38–45 (p. 40).

<sup>40</sup> Giuseppe Samonà, ‘An Assessment of the Future of the City as a Problem of its Relationship with Architecture’, *Architectural Design*, 55.5/6 (1985), 16–18 (p.17); and Gregotti, ‘The Grounds of Typology’, p. 4.

## 2 LITERATURE REVIEW

*Ever since Vitruvius, architectural theorists have given expression to the idea of a first architectural model—a type or archetype—from which architecture derives, without making explicit mention to those terms.*<sup>1</sup>

The amount of literature dealing implicitly with *type* and *typology* in architecture, especially when considering the often synonymously used terms *form*, *idea*, *model*, *standard*, *prototype*, and *structure*, is vast but beyond the scope of this introduction and generally irrelevant to this dissertation.<sup>2</sup> Similarly extraneous are the many pattern- and textbooks based on a classification of building types, such as the Ernst Neufert's *Bauentwurfslehre* (1936), Nikolaus Pevsner's *History of Building Types* (1976), or Roger Clark and Michael Pause's *Precedents in Architecture* (1985).

The primary literature presenting clear arguments of typal or typological reasoning and available in English are limited and widely reviewed. Most frequently cited are Quatremère's entry of 'Type' in the *Encyclopédie méthodique: Architecture* (1825, III), Argan's 'On the Typology of Architecture' (1962), Rossi's *Architecture of the City* (1966), Colquhoun's 'Typology and Design Method' (1967), Vidler's 'The Third Typology' (1976), Moneo's 'On Typology' (1978), and Werner Oechslin's 'Premises for the Resumption of the Discussion of Typology' (1989).<sup>3</sup> These sources defining the typological discourse generally belong to three historical phases. First, the nineteenth-century emergence of three inaugural theories of type by Quatremère, Durand, and Semper. Second, the reconsiderations of type in the 1960s and 70s. Third, the historiographical reviews of typological theories and projects of the recent past, beginning in the mid-1970s and essentially concluded by the mid-80s although extending to the 90s.

### 2.1 THE NINETEENTH-CENTURY EMERGENCE OF TYPE

The definition of *type* by Quatremère in his dictionary entry of 1825 is part of his prolific writing on the arts and architecture.<sup>4</sup> The historian Vidler in 'The Idea of Type: The Transformation of the Academic Ideal, 1750–1830' (1977) argues that Quatremère's concept of type is simply a restatement of his earlier theories on architectural origins (the type of the temple) and imitative character (building types as 'expressions of use'), first

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<sup>1</sup> Leandro Madrazo, 'The Concept of Type in Architecture: An Inquiry into the Nature of Architectural Form' (unpublished PhD thesis, Eidgenössische Technische Hochschule Zürich, 1995), p. 12.

<sup>2</sup> An attempt to summarise them was made by Madrazo in 'The Concept of Type in Architecture'.

<sup>3</sup> Werner Oechslin, 'Premises for the Resumption of the Discussion of Typology' in *Assemblage*, 1 (1989), 36–53, is a reworked version of 'For a Resumption of the Typological Discussion' in *Casabella*, 509–510 (1985), 66–75.

<sup>4</sup> Despite Quatremère's great influence on French academic doctrine in the early nineteenth century, only a small number of these important texts were translated into English: *The Destination of Works of Art and the Use to which they are Applied* (1821); *An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts* (1837); and *The Historical Dictionary of Architecture of Quatremère De Quincy* (2000).

promulgated under the rubrics of ‘Hut’ and ‘Character’ in the first volume of the dictionary in 1788.<sup>5</sup> Elaborating, Vidler in ‘From the Hut to the Temple: Quatremère de Quincy and the Idea of Type’ (1987) asserts that type represents Quatremère’s conceptual union of origins and imitation derived from reading Marc-Antoine Laugier, Winckelmann, and Ribart de Chamoust, with the architectural theory fully attributable to ideas formed in the *Mémoire sur l’architecture égyptienne*—written in 1785 but published revised in 1803 as *De l’architecture égyptienne*.<sup>6</sup> The claim that *De l’architecture égyptienne* merely expands on the *Mémoire*, however, overlooks an important shift in Quatremère’s theories requiring closer study. While the *Mémoire* describes a progressive development of origins from cave to hut, only the first volume of the *Encyclopédie méthodique: Architecture* in 1788 proposes multiple and separate origins, a new argument integrated into *De l’architecture égyptienne* with the significant addition that these origins have *no* developmental connection. The concept of separate origins is critical to Quatremère’s mature theory of architecture and contradicts the conclusions of the *Mémoire*. Similarly, the distinction between type and model is unexplained by the arguments of the *Mémoire*, and emerges from an enquiry into the fine arts and imitation that Quatremère only concludes in *An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts* of 1823.<sup>7</sup>

The historiographical emphasis on Quatremère’s earlier theories by Vidler was widely adopted, most prominently by Jonathan Noble in ‘The Architectural Typology of Antoine Chrysostome Quatremère De Quincy’ (2000), Thomas Rowlands in ‘Quatremère de Quincy: The Formative Years 1785–1795’ (1989), and Sylvia Lavin’s dissertation ‘Quatremère de Quincy and the Invention of a Modern Language of Architecture’ (1990).<sup>8</sup> They all present the revised reissue of the dictionary as *Historical Dictionary of Architecture* (Dictionnaire historique d’architecture) in 1832 as a reactionary weakening of Quatremère’s earlier theories, failing to recognise it as a necessary clarification following a decisive shift in thinking during the 1820s. Then, as Adrian Forty in *Words and Buildings* (2000) contends, the problem of origins was replaced by an advanced concept of type and its distinction from the model.<sup>9</sup> Quatremère’s type no longer just envisioned historical contingency but became a generating principle: it was modern in conception. This radical modification of its meaning made a redefinition of history, language, imitation, conventions, and invention necessary, and was implemented by the revisions to the *Historical*

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<sup>5</sup> A study of Quatremère’s notion of character by Vittoria Di Palma fails to establish this relationship with type, suggesting instead that ‘type’ did not provide a substantial new theory; compare ‘Architecture, Environment and Emotion: Quatremère de Quincy and the Concept of Character’, *AA Files*, 47 (2002), 45–56.

<sup>6</sup> Vidler, ‘From the Hut to the Temple’, pp. 147–64.

<sup>7</sup> The importance of the essay is acknowledged by its reprint by Léon Krier and Demetri Porphyrios as *De l’imitation* (1980).

<sup>8</sup> Sylvia Lavin’s dissertation is published as *Quatremère de Quincy and the Invention of a Modern Language of Architecture* (Cambridge, MA: MIT Press, 1992).

<sup>9</sup> Adrian Forty, ‘Type’, in *Words and Buildings: A Vocabulary of Modern Architecture* (London: Thames & Hudson, 2000), pp. 304–11.

*Dictionary*, with its new understanding of utility and practice—recognised by Samir Younés in his introduction to the English translation in 2000.<sup>10</sup>

While Vidler in ‘The Hut and The Body: The “Nature” of Architecture from Laugier to Quatremère de Quincy’ (1981) and ‘The “Art” of History: Monumental Aesthetics from Winckelmann to Quatremère de Quincy’ (1982), Oechslin in ‘Premises for the Resumption of the Discussion of Typology’ (1989), and Lavin (1990) cursorily remark on the importance of art historical debates to Quatremère, only Younés explores its influence on the *Essay on Imitation* and *Historical Dictionary* in more depth. He identifies a conceptual interrelation between imitation and invention, character and style, and poetic order, which become later part of Quatremère’s concept of type. Concluding his analysis, Younés states that type is a priori to conventionalised meaning and operates beyond technological determinism, thus, is effectively ahistorical and self-governing while retaining its relevance to architectural theory and practice.

A contemporary of Quatremère, Durand developed a didactic method of design in the *Précis* (1802–05). Continuing a long-established tradition of drawing harking back to the Renaissance, he succeeded in instrumentalising the drawing process and defined it empirically as the disciplinary technique and convention that established architecture as a specialised and taught branch of knowledge. Durand’s ‘rational’ argument of construction and design at the École Polytechnique, together with Quatremère’s critical history and theory at the École des Beaux-Art, instituted the modern architectural curriculum. The different views of architectural knowledge espoused by Quatremère and Durand derived from a distinction between theory and method, but was rooted in the eighteenth-century French normative discourse. More specifically, both were influenced by Le Roy, who provided them with different methodological means.<sup>11</sup> Quatremère’s theory of type was consistent with Le Roy’s cultural and social line of enquiry. Type was the means to historicise and, more importantly, endowed architecture with a cultural and social dimension, which gave it moral utility and constituted a quasi social contract. In his historiographical studies, Quatremère understood historicism as an engagement with historical traditions and forms, and their relativisation as socio-cultural phenomena, which undermined fixed ideals of classical thought and its principles of natural laws.<sup>12</sup> This offered

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<sup>10</sup> The *Architectural Magazine* printed from 1836 to 1837 selected entries of the *Historical Dictionary*, which (trans. by P.) included: ‘The Philosophy of Architecture Popularised’; ‘On the Different Significations of the Words “a Whole”, in Architecture’ (Jan 1836); ‘On Artisans’ (Feb 1836); ‘On Effect in Architecture’ (April 1836); ‘On Harmony as Applied to Architecture’ (July 1836); ‘On Order in Architecture’ (Oct 1836); ‘On the Difference Between Contrast, and Opposition in the Fine Arts’ (Nov 1836); ‘On the Fitting up of Interiors’ (Dec 1836); and ‘On the Use of Allegory in Architecture’ (Jan 1837).

<sup>11</sup> In particular, the second edition of *The Ruins* (1770) advanced a typological method of analysis, positing that the multiple origins of architecture and its ‘primitive original ideas’ could be graphically conveyed and compared. Hereby the synthesis of general and specific form took place twofold: in comparative diagrams abstracting a converging history of forms and in cultural specificity that defined the principles of architecture.

<sup>12</sup> This definition of historicism owes to Alan Colquhoun, ‘Three Kinds of Historicism’, in *Modernity and the Classical Tradition*, pp. 3–19.

to the artist a new reasoned (stylistic) choice. Quatremère balanced his historicist relativism by positing a historical persistence of normative ideas embodied in type, although his theories remained rather relativistic than positivistic. In contrast, Durand's positivism followed Le Roy's comparative understanding of architecture by basing its analysis on diagrammatic and formal abstraction, permitting an elimination of specific historical and stylistic qualities. Thus, formal invention could be free of its historical burden and declared belonging to the future: serving the needs of a new society.

Despite common juxtapositions of Quatremère and Durand's theories, their complementarities have so far received little attention. An oversimplification of their differences to a neoplatonic and empirical scientific positions prevents a better understanding of their fundamental epistemological agreements and theoretical disagreements—only more recently questioned by Oechslein (1989) and Bandini in 'Typological Theories in Architectural Design' (1993). A separation of Quatremère and Durand's theories mainly resulted from historiographical reviews of the typological discourse in the late 1970s, such as Vidler's 'The Third Typology' (1976) and 'The Idea of Type' (1977), and Moneo's 'On Typology' (1978), needing to define distinct approaches. Their division was upheld by Dina Demiri in 'The Notion of Type in Architectural Thought' (1983), Pérez-Gómez in *Architecture and the Crisis of Modern Science* (1983), Westfall in *Architectural Principles in the Age of Historicism* (1991), and Forty in 'Type' (2000). Yet, Quatremère and Durand importantly shared the conviction that abstraction provides architecture with a specific mode of knowing and partial autonomy through a (structural) language that is both rational and internal to the discipline. They believed that architecture is simultaneously general and specific, and that the influence between architecture and the constitution of society is reciprocal. While Lavin (1990) recognises the social in Quatremère, Durand's comparable view in *Recueil et parallèle des édifices de tout genres, anciens et modernes* (1799–1801) and the *Précis* (1802–05) has only been discussed tentatively by Werner Szambien in "'Regular" Architecture: Imitation in Durand' (1981).

A reassessment of Quatremère and Durand's theories is essential to critically review the typological debate in the 1960s. In this debate, Semper's conceptual and material synthesis of typical form within a 'practical aesthetic' that combines a general history of the industrial arts with a specific theory of art-form was noticeably absent. His theories derived from speculations on polychromy in the early 1830s, published in the pamphlet *Preliminary Remarks on Polychrome Architecture and Sculpture in Antiquity* (1834) and drafts for a never completed survey of architecture in *Comparative Theory of Building*—only partially realised in *Style in the Technical and Tectonic Arts* (1860–63). During formative years in London in the mid-1850s, Semper clarified his theoretical position in a number of writings, *The Four Elements of Architecture* (1851), *Science, Industry, and Art* (1852), *Theory of Formal Beauty* (1850s) and a lecture series at the Department of Practical Art (1853–54). They anticipated the structure and content of his main theoretical work *Style*, outlining a

'empirical theory' of building and a scientific history of the arts, both practical and materialist as well as symbolic and cultural. The London lectures, mainly known in their German translation by Hans Semper in *Kleine Schriften von Gottfried Semper* (1884), contributed to a misinterpretation of Semper as a mere materialist, promulgated most influentially by Alois Riegl in *Spätrömische Kunstindustrie* (1901). That Semper, however, considered material and form as subsumed by artistic content and idea is supported by Wolfgang Herrmann in *Gottfried Semper: In Search of Architecture* (1984). Likewise, Harry Francis Mallgrave in his dissertation 'The Idea of Style: Gottfried Semper in London' (1983) and critical biography *Gottfried Semper: Architect of the Nineteenth Century* (1996) argues that Semper's style-theory is anti-utilitarian and anti-materialist, developing a new notion of ornament and symbolic representation through the motive of 'dressing' (*Bekleidung*). In the pivotal lecture 'Outline for a System of a Comparative Theory of Style' (1853), Semper defines a doctrine of style that unites a comparative and functional system of types promulgated by Georges Cuvier and Durand with a culturally motivated idea of type and style. His rethinking of origins and historicism derives from an anthropological reading and proposes a shared development of the minor arts and architecture, according to which he identifies four original types in the technical arts: ceramics, carpentry, masonry, and textiles. Semper hereby shares Quatremère's aim to establish architecture as a highly cultural and symbolic idea and as a psychological, collective expression of nations; and with Durand an interest in design practices, which he however sees realised in practical aesthetics and not by disposition. The concept of style, eschewed by Durand, is central to Semper's consolidation of artistic intentions and processes with underlying typical 'motives', as discussed by Mallgrave and Gevork Hartoonian's 'In what Style could they have built?' (2007).

Semper's synthesis provides a frail unity between artistic production and representation, granting form through its material effects an aesthetic and symbolic meaning—a relationship later exploited by Modernism's representational functionalism. His definition of type as a simultaneous ontological speculation and scientific investigation of technology was critical to a late nineteenth-century historicism and the modern discourse in the early twentieth century.<sup>13</sup> Yet, as Mari Hvattum states in *Gottfried Semper and the Problem of Historicism* (2004), essentially still endorsing a materialist interpretation of Semper, his historicism led to a 'compression of meaning' in which a comparative historical and formal method of analysis dominated content. A further examination and questioning of this consolidation is necessary to understand Semper's synthesis and anticipation of a similar attempt in the 1960s, even though by then the architectural discourse had divorced style from type. Especially in the English context, Semper's contribution to the discourse of type has received too little attention.

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<sup>13</sup> See Gevork Hartoonian, 'Montage: Recoding the Tectonics', in *Ontology of Construction: On Nihilism of Technology in Theories of Modern Architecture* (Cambridge: Cambridge University Press, 1994), pp. 5–28.

## 2.2 THE RECONSIDERATION OF TYPOLOGY (1960–70)

In the 1960s, the concept of type re-emerged in debates concerned with the relations and instrumentalisation of typology, morphology, and history to architectural and urban design. Although the Modern Movement produced prolific typological studies, it denied any influence of history, and type could therefore not be theorised. Therefore, the apparent recourse to Durand and the production of types during the Modern Movement are generally omitted in this dissertation.<sup>14</sup> Critical of the Modern Movement, the proponents of Italian Neorationalism reconsidered type in the context of the historical European city. Quatremère's theoretical concept and Durand's formal analysis seemed to offer an escape from Modernist planning doctrines, and by relating history and form at an urban and architectural scale, the multi-scalar potential of typology presented new solutions to the predicament of the city. The neorational agenda was vastly influential throughout Europe. Yet, Quatremère's key rubric 'Type' only became available in an English translation by Vidler in 1977, followed eight years later by Tanis Hinchcliffe's translations of the entries 'Character', 'Idea', and 'Imitation', as she felt that Quatremère's complex theory of architecture had become de-contextualised and oversimplified.<sup>15</sup>

Credited with rediscovering Quatremère and a distinction between regulating types and typological differentiations of models, Argan's 'On the Typology of Architecture' of 1962 describes it as the mechanism to integrate a historical process with an architect's individual design process through a 'typological series'. Argan's reasoning complemented Ernesto Rogers's in 'Preexisting Conditions and Issues of Contemporary Building Practice' (1955), who proposes a process of historical continuity and tradition grounded in the specific context of architecture, which represent the concepts of *continuità*: history, context, and type. Following Argan and Rogers, but also Saverio Muratori's morphological studies of Venice in *Studi per una operante storia urbana di Venezia* (1960), Neorationalism linked the concept of type to the city. Anticipated by preliminary studies of typology and morphology by Aymonino and Rossi from 1963 to 1965, three important publications that defined a new rational analysis of architecture and its relation to the city appeared in short succession: Rossi's *Architecture of the City* (1966), Gregotti's *Il territorio dell'architettura* (1966), and Giorgio Grassi's *La costruzione logica dell'architettura* (1967).

Rossi's definition of type closely follows Quatremère, but increasingly links it to a typological design method by employing urban morphology and building types. He exerted a great influence on the typological debate in the 1960s and 70s, spreading first in Europe and later in America. While the European debate endorsed the core themes of Neorationalism, for example evident in *Town Spaces* (1975) by Rob Krier and *Architecture: Choice or Fate* (1998) by Léon Krier, Rossi's concept of typology and urban science was

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<sup>14</sup> The Modern Movement's typological productions are included by Vidler in 'The Third Typology' (1976), Moneo in 'On Typology' (1978), and by Colquhoun in *Essays in Architectural Criticism* (1981).

<sup>15</sup> Vidler's translation of 'Type' appeared in *Oppositions*, 8 (1977) and 'Character', 'Idea', and 'Imitation' was translated by Tanis Hinchcliffe in 'Extracts from the Encyclopédie méthodique d'architecture', in *9H*, 7 (1985).

appropriated in America as part of a generally available symbolic, formal, and analytical repertoire, which is apparent in *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (1972) by Venturi, Denise Scott Brown, and Steven Izenour or *Collage City* (1978) by Colin Rowe and Fred Koetter. Therefore, numerous reviews of Rossi in the 1980s blamed his writing for serving as polemic manifestoes for his architecture or his architecture as a polemic to his idealised context—resulting more in typological oversimplification than serious architectural theory. The most ferocious critique levelled against Rossi was by Manfredo Tafuri in ‘L'Architecture dans le Boudoir: The Language of Criticism and the Criticism of Language’ (1974).<sup>16</sup> Rossi’s central role in reviving the typological discourse are discussed by Vidler (1976), Moneo (1978), Terrance Goode in ‘Typological Theory in the United States: The Consumption of Architectural “Authenticity”’ (1992), and Bandini in ‘Typology as a Form of Convention’ (1984). Jorge Silvetti’s ‘On Realism in Architecture’ (1980) charged neorational typology with a reduction to easily consumable iconographies. Rossi’s changing definition of type and typology are further studied by Bandini (1984) and Mary Louise Lobsinger’s ‘That Obscure Object of Desire: Autobiography and Repetition in the Work of Aldo Rossi’ (2002). But his important shift from typology as part of an *urban science* to the concept of an *analogous city* requires more investigation, as it is symptomatic for the unresolved conflict between a didactic, scientific, and metaphorical reading of types.

Rossi developed his first thoughts on typology as a teaching assistant to Aymonino at the IUAV. Two early lectures from 1965, reprinted in *ARCH+* in 1978 as Rossi’s ‘Das Konzept des Typus’ and Aymonino’s ‘Die Herausbildung des Konzepts der Gebäudetypologie’, convey their different reasoning of typology.<sup>17</sup> Rossi premises his definition on Durand’s elements of buildings, which he translates as the elements of the city, and on Quatremère’s distinction between type and model. He describes typology, verbatim to the later published *The Architecture of the City*, as the study of irreducible types of elements found in architecture and the city, elements that are the constants and constituents of their form. In comparison, Aymonino traces the origins of building typology to the eighteenth-century rise of bourgeoisie and industrialisation. His concept of (building) typology derives from functional and utilitarian consideration and emerges as the study of possible relationships between architectural elements through a classification of types. Aymonino therefore sees the potential of type to critically analyse formal and functional essences, while to Rossi type embodies a possible retrieval of history. Further evident in *La città di Padova* (1970), to Rossi typology represents the formal analysis of the historical city and to Aymonino a functional analysis of the elements of the city. Aymonino expanded his position in *Il significato della città* (1976), stressing the relationship between urban morphology and building typology as a method, and not like Rossi as the basis for a theory of autonomy.

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<sup>16</sup> Similar critiques were made by Moneo (1978), Massimo Scolari in ‘The Typological Commitment’ (1985), Carlo Olmo in ‘Across the Texts’ (1988), and Dieter Hoffmann-Axthelm in ‘Ein anderer Rossi?’ (1996).

<sup>17</sup> See *ARCH+*, 37 (1978), ‘Der “Tod der Architektur” und die Antworten der Architekten’.

Bandini (1984) argues that this difference informs two typological belief-systems, one in which Rossi and Scolari think about typology in cultural and political terms and another, by Guido Canella, Semerani, and Gregotti, emphasising typology as an archetype and functional model.

Contemporaneous to Rossi, Ungers explores similar neorational themes, which would remain important despite his many paradigm shifts.<sup>18</sup> His design doctrine is based on typological and morphological studies, which he describes as 'architectural themes'. Taking a cue from Durand, his Berlin Lectures on the museum (1964–65) and proposal for a student dormitory in Enschede (1963) develop a morphological transformation of types that can be applied to design. When summarising his design doctrine in 'Projekte als typologische Collagen' (1975), he still refers to typological-formal analysis, but the emphasis would soon shift to an iconographic reading of and metaphorical speculation on form. This is evident in 'Designing and Thinking in Images, Metaphors and Analogies' (1976) and *Architecture as Theme* (1982), in which the interrelation of domesticity and urbanity is expressed as a spatial analogy of the 'doll in the doll'. Yet, another shift occurred in *The Dialectic City* of 1997. Consolidating his concept of dialectical and complementary contradiction in accordance with Nikolaus von Kues's dogma of 'coincidence of opposites', Ungers interprets them as either a tactic of the 'city in the city' or a 'city of layers'. Ungers's employment of typology as morphology, his parallels to Semper's elements of architecture and similarities to Rossi, including a later retreat to metaphorical analogies, is little discussed, despite his work recently receiving much scholarly attention, for example, by Jasper Cepl in *Oswald Mathias Ungers* (2007), André Bideau in *Architektur und symbolisches Kapital* (2011), and Pier Vittorio Aureli in *The Possibility of an Absolute Architecture* (2011).

Neorationalism's critique that the Modern Movement lacked an understanding of context and history is questioned by Colquhoun's critical counter-position. With a structuralist interest in the production of meaning and architectural historicity, he introduced the typological discussion to an English audience in 'Typology and Design Method' (1967). His essay validates the use of models and precedents by arguing that a scientific design method is deficient when determining final configuration, as form ultimately relies on intuition. To resolve this quandary, he suggests that typological models derive from formal solutions and meanings but require adaptation to context. Colquhoun examined the function of type in a series of further essays between 1962 and 1979, in which he critically reviews the Modern Movement and in particular Le Corbusier's oeuvre. Collected in *Essays in Architectural Criticism* (1981), the writings investigate 'genetic' and 'relativistic' views of type, and how their linguistic and aesthetic resonances create different meanings of architectural form that are explored and advanced typologically by reconsidering the

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<sup>18</sup> Ungers's numerous paradigm shifts are contextualised by Jasper Cepl, *Oswald Mathias Ungers: Eine Intellektuelle Biographie* (Cologne: Walther König, 2007).

relativistic conditions of history as norms deriving from within the architectural tradition and discipline.

### 2.3 HISTORIOGRAPHICAL REVISIONS (1976–95)

Following its revival in the 1960s, numerous projects and historiographical revisions of the typological discourse appeared in the late 1970s to mid-80s. Afforded by a distance of time, the reviews became progressively disenchanted with typology, eventually concluding it had failed architectural and urban practice. While typology had lost its appeal in Italy by the mid-80s, two decades after its rebirth the idea of an operational typology emerged in France and America in the late 70s.

In France, the direct Italian influence was manifest. For example, Philippe Panerai's 'Space as Representation and Space as Practice: A Reading of the City of Versailles' (1979) and 'Typologies' (1979), revisit Durand's analytical and generative typology and the typomorphological relationship propounded by Aymonino and Muratori. Similarly, Robert Delevoy in 'Diagonal: Towards an Architecture' summarises past typological practice. Delevoy's article was an introduction to *Rational Architecture: The Reconstruction of the European City* (1978), published after an exhibition organised by Léon Krier in London in 1975, forming a sequel to the seminal XVth Triennale in Milan (1973) curated by Rossi and its accompanying catalogue *Architettura Razionale* (1973). *Rational Architecture* included some Italian proponents but mostly featured a new group of Rationalists including Ungers and Vidler.<sup>19</sup> When typology was first discussed in America, its populist use in *Learning from Las Vegas* (1972) and its polemic New Urbanist undertones in *Collage City* (1978) presented it as a repository of meanings and images. The postmodern era, as represented by Venturi and Rowe, replaced method with subversion and representation, establishing a meaning less elitist and complete than popular and fragmentary. At the same time, a final important attempt to legitimise typology was sustained by critical architectural journals that disseminated a number of key issues summarising and concluding the debate by the mid-80s.

*Oppositions: A Journal for Ideas and Criticism in Architecture* (1973–84) published numerous articles from 1976 to 1984 exploring typological questions.<sup>20</sup> In particular, Vidler authored and

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<sup>19</sup> *Rational Architecture* was published by the Archives d'Architecture Moderne in Brussels, which also printed Quatremère's *De l'imitation* and Rob Krier's *Urban Space* (1975).

<sup>20</sup> These include Moneo's 'Aldo Rossi: The Idea of Architecture and the Modena Cemetery' (1976) and 'On Typology' (1978); Rossi's 'The Blue of the Sky' (1976) and 'Recent Works' (1984); Vidler's 'The Third Typology' (1976), 'Idea of Type: The Transformation of the Academic Ideal 1750–1830' (1977), 'Quatremère de Quincy: "Type"' (1977), and 'The "Art" of History: Monumental Aesthetics From Winckelmann to Quatremère de Quincy' (1982); Demetri Prophyrios' 'The "End" of Styles', 1977, and 'The Retrieval of Memory: Alvar Aalto's Typological Concept of Design' (1980); Colquhoun's 'Form and Figure' (1978); Culot and Léon Krier's 'The Only Path for Architecture' (1978); Léon Krier's 'The Consumption of Culture' (1978), and 'Forward, Comrades, we Must go Back' (1981); William Ellis' 'Type and Context in Urbanism: Colin Rowe's Contextualism' (1979); and Grassi's 'Avant-Garde and Continuity' (1980). *Oppositions* also published Rossi's *A Scientific Autobiography* (1981), *The Architecture of the City* (1982), and Colquhoun's *Essays in Architectural Criticism* (1981).

editor of several issues was a persistent contributor. In his well-known editorial 'The Third Typology' (1976), he differentiates between three historical epistemes as characterising typological thinking. The Enlightenment premised on an 'ontological' understanding of nature, the Modern Movement with a 'quasi-Darwinian law of selection', and the 'third typology' of Neorationalism, in which the transformation of type is realised through a 'strategy of metaphoric opposition'.<sup>21</sup> Although Vidler's editorial marked the beginnings of an American debate, it was promptly criticised by Mary McLeod for failing to address architecture's social role and leading to a new positivism that relied on a priori canons.<sup>22</sup>

Moneo in 'On Typology' (1978) complemented Vidler's historical perspective by examining the role of typology in the design process. Discussing Quatremère and Durand, the Modern Movement (Mies van der Rohe, Le Corbusier, and Alexander Klein) and the dialogue in the 1960s (Argan, Rossi, the Krier brothers, and Venturi), he claims that typological investigations are about understanding the nature of the architectural and historical object. While recognising that a confrontation between internal ideology and external constraints is necessary in a design process, with communication between reality (society), context, and architecture made possible by type's ideological position, he concedes that type has suffered from its reduction to pre-established type-images and nostalgia. Therefore, he concludes, for type to remain important, it has to be understood in its *presentness* and in relation to reality, not as focused on either the past or the future.<sup>23</sup>

In 1985 two extensive reviews of typological reasoning and projects from the last three decades appeared in *Casabella*, 'The Grounds of Typology' edited by Gregotti, and *Architectural Design*, 'The School of Venice' edited by Semerani. They were the final coherent attempts to conclude and revive the neorational discussion. Gregotti in his editorial 'The Grounds of Typology' asks if typology is still meaningful as an ideological instrument and concrete design tool, recognising a need to redefine and re-launch the debate vulgarised by codification and stereotyping. Bruno Reichlin in 'Type and Tradition of the Modern' and Oechslin in 'For a Resumption of the Typological Discussion' represent the diverse responses to Gregotti's challenge.<sup>24</sup> Reichlin declares that typology generally is nothing but a stating of a theoretical position. After criticising Rationalism, he suggests that

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<sup>21</sup> Other essays by Vidler, 'The Idea of Type' (1977) and 'The "Art" of History' (1982) trace the origins of type to the eighteenth-century architects Ribard de Chamoust, Laugier, Jacques-François Blondel, and Boullée before its usage is codified by Durand and Quatremère, the latter according to Vidler deriving his concept from the art history of Winckelmann. In his polemic, 'The Fourth Typology' Hans van Dijk suggests a 'fourth typology', based on the theme park, *Archis* 8 (1997), 52–53.

<sup>22</sup> Mary McLeod in 'Letters to the Editors', *Oppositions*, 13 (1978), 127–30.

<sup>23</sup> The reduction of typology to imagery and its application in composition, lamented by Moneo, is promoted in the 1982 issue 'Typology in Design Education' of the *Journal of Architectural Education*. Edited by Ellen Morris and Edward Levin, it advocates the use of historical precedents in education. Bemoaning the lack of typological utilisation in the Modern Movement, they welcome recent revisionist architecture as an opportunity to return to a Beaux-arts tradition and the dialectic between programme and type. This, they argue, gives access to a rich historical repertoire in the teaching of architecture. Compare *Journal of Architectural Education*, 35.2 (1982), Typology in Design Education.

<sup>24</sup> Compare *Casabella*, 509–510 (1985), The Grounds of Typology.

a different semiotic connection between typology and morphology could enable a functional and ontological autonomy comparable to that of Le Corbusier's *plan libre*. Contending that Corbusier's system of elements and functions is more radical in its conjectural inventions than a historical imitation of types, he questions design based on traditional typologies. In contrast, Oechslin posits that a better understanding of Quatremère's distinction between type and model, which he rephrases as *form* and *matter* and *type* and *figure*, is necessary. Re-reading Quatremère and Durand's theories, he argues that a different inclusive typological discussion is still possible, blaming Argan's misunderstanding of typology as iconology for a series of typological reductions that resulted in a codification of fixed functional and historical types.

Contrasting with the critical debate in *Casabella*, the *Architectural Design Profile* of 1985 on 'The School of Venice' consolidated projects and pedagogies linked to the school by grouping them under the themes of city, territory, type, figuration, architectural history, and representation. Equally proclaiming a crisis, Semerani in 'Why Not' demands that historical theories ought to be re-established as a precondition for architectural composition, and with it a new typological position. In response, subtle differences appear in propositions of how to recover the instrumentality of typology by considering problems of history.<sup>25</sup> Samonà defines typology as a formal-functional instrument that incorporates history, but refers to morphology and urban structures in order to situate and locate a specific problem. Gianugo Polesello's proposes architectural typology as an 'archive of given types' or figures with historical origins. In addition, Augusto Burelli contends that concepts of type derive from the principle of individualisation and classification, the latter which has led to the crisis of typology by reducing aesthetic classification to techniques and technical protocols. In response, Aymonino in 'Type and Typology' proposes a differentiated concept of classification, with typology not a category but an instrument to classify stylistic and formal, or organisational and structural elements that relate the individual element to the whole and urban.

The consensus emerging from these issues of *Casabella* and *Architectural Design* is that typology has limited value other than as an instrument of analysis, which differs greatly from its enthusiastic reception in the 1960s to redeem the practice of architecture. An important shift from ideology to reality had taken place that caused the utilitarian interpretation by Aymonino to become more widely accepted than Rossi's conceptual notion. The beginning and end of the intense European typological debate, had a noticeable influence in Germany and is almost precisely framed by two *ARCH+* issues, one in 1978 entitled 'Der "Tod der Architektur" und die Antworten der Architekten', and another in 1986 on 'Typologie und Populismus'.<sup>26</sup>

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<sup>25</sup> Compare *Architectural Design*, 55.5/6 (1985), The School of Venice.

<sup>26</sup> The *ARCH+* issue of 1978, edited by Nikolaus Kuhnert and Marc Fester, introduced rationalist concepts by surveying rational architecture and reprinting articles by Tafuri, Rossi, and Aymonino. The editorial of the 1986 issue on 'Typologie und Populismus' by Dieter Hoffmann-Axtmann and Ludovica Scarpa, however

From the reviews in the 1980s, it is apparent that the struggle of Italian Neorationalism to make typological theories 'operative' was relived in other countries without significant new insights. Subsequent attempts to reinvigorate the discourse were limited to scholarly enquiries appearing until the mid-1990s but similarly contributed few new perspectives.<sup>27</sup> Representative of these is Leandro Madrazo's 'The Concept of Type in Architecture: An Enquiry into the Nature of Architectural Form' (1995), which premises its historiographical overview of type on a synonymy with generic and transcendental form. In an extensive survey from Plato's Form-Idea to current computer-aided design, he disregards Quatremère's notion of type as a simplification and investigates architectural form in its widest sense, based on a 'double nature' of type that has either a visual, sensible or a non-visual, conceptual nature. Expanding the meaning of type to general theories of form-finding, Madrazo endorses the declining specificity of the discussion.

Similarly, *Ordering Space: Types in Architecture and Design* (1994) edited by Karen Franck and Lynda Schneckloth and *Typological Process and Design Theory* (1998) edited by Attilio Petruccioli, confirm that type and typology are considered simply the means to reductive classification and an analysis of social and morphological-functional categories, predominantly found in academic urban design schools.<sup>28</sup> This attitude is also apparent in recent adaptations of typological models by academic practitioners, such as FOA or UNStudio.<sup>29</sup>

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opened with the admission that typology is an irrelevant design aesthetic, raising instead the question how to revalidate typology for the future of the city and a renewed social agenda. Focussing on a German debate, the responses by practitioners argue that typology is central to the problems of historical buildings and housing development, while Ulrich Linse and Hoffmann-Axtmann claim that typology in Germany can only be understood in context to National Socialism and its abuse of typing and Gestalt.

<sup>27</sup> These include Ibrahim Mohamed Elkaddi, 'Typological Production in Architecture: The Underlying Principles in Modern Mass Housing' (University of Pennsylvania, 1983); Michael Hellgardt, 'Der typologische Austausch: Untersuchung zum Verhältnis von Architektur und Baukunst' (TU Delft, 1988); and Jae-Hoon Hwang, 'The Reciprocity Between Architectural Typology and Urban Morphology' (University of Pennsylvania, 1994). They essentially revisit the typological and morphological premise of the 1960s. Elkaddi, based on case studies (Narkomfin Building, Unite d'Habitation, and village of Gourna), proposes a compromise between historical experience and future aspiration. Similarly, Hellgardt differentiates between a double structure of type of the same (typified and predetermined formal structure) and type of the similar (acting type responding to conceptual shifts and utilising its double structure) in his analysis of architecture as the art of building. Hwang, in contrast, derives his notion of 'typomorphological modification' from Aymonino, and conflates architectural languages of the past and present by considering them simultaneously consumed under the aspects of *poesis* and *techne*. Another group of dissertations examined the historiography of 'type' and 'typology'. Kuhnert, investigates a related thesis in 'Soziale Elemente der Architektur, Typus und Typusbegriffe im Kontext der Rationalen Architektur' (RWTH Aachen, 1979). Diane Painter in 'Typology and Urban Design' (University of Sheffield, 1990) assesses the notion of typology in respect to the practice of urban design.

<sup>28</sup> Both editors are academic urban planners. *Typological Process and Design Theory* is a collection of papers presented at a conference at MIT and Harvard in 1995.

<sup>29</sup> For example *Phylogenesis: FOA's Ark* (2003) by Foreign Office Architects; Farshid Moussavi, and Alejandro Zaera-Polo, 'Types, Style and Phylogenesis', *Architectural Design*, 74.3, Emergence (2004), 34–39; and *Design Models: Architecture, Urbanism, Infrastructure* (2008) by UN Studio.

### 3 METHODOLOGY

The research method followed is a qualitative and interpretative approach common to literature-based enquiries. The aim is a critical perspective and coherent arguments that develop and synthesise the thesis outlined in the object of research through new interpretative and theoretical understanding. In accordance with historical-interpretive research, sources of typal and typological theories are first selected and organised, then evaluated through description, analysis, and assessment in order to construct a rigorous framework to interpret and compare theoretical texts.<sup>1</sup>

Despite contextualising the selected type-theories, this dissertation is methodologically intended as a synchronic comparison. It mainly discusses two distinct historical periods, the first half of the nineteenth century and the mid-twentieth century, but within each period concurrent theories. This is done by a close reading of primary texts and their related secondary or commentary literature—not the discussion of projects, since the main protagonists were theorists rather than practitioners, or their practice seemed to contradict their theories. The discrepancy between theory and design practice, which suggests different criteria to define the relation between type and typology, is a research topic outside of the scope of this dissertation and only cursorily dealt with. The focus instead is the role of type to design theory and not design practice in architecture: the theoretical and didactic framework to discuss an architectural object in both its conceptual and concrete form.

The synchronic comparison permits what Michel Foucault termed an ‘archaeological perspective’ and ‘genealogy’, and examines the different conceptualisations of type and typology in respect to the particular episteme and ‘discursive formation’ that delimit its conceptual possibilities and modes of knowing.<sup>2</sup> The respective epistemes provide the context to analyse and understand an associated knowledge, practice, and rationality, and applies to the formal yet significantly cultural reasoning that constitutes the complementary layers of typal reasoning. An ‘archaeological’ reading also allows a comparison of similarities and differences without being bound to the chronology and history of positivist or evolutionist perspectives. As Colquhoun’s structuralist methodology demanded, ‘to understand any given cultural situation, we must investigate its synchronic structure rather than try to explain it exclusively in terms of diachronic development. The synchronic situation always contains traces of the past.’<sup>3</sup> According to Colquhoun, these traces and

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<sup>1</sup> See David Wang and Linda Groat, ‘Interpretative-Historical Research’, *Architectural Research Methods* (New York: John Wiley & Sons, 2002), pp. 135–72.

<sup>2</sup> As Michel Foucault states: ‘In any given culture and at any given moment, there is always only one *episteme* that defines the conditions of possibility of all knowledge, whether expressed in a theory or silently invested in practice.’ In *Les Mots et les choses: Une archéologie des sciences humaines* (Paris: Gallimard, 1966). English translation: *The Order of Things: An Archaeology of the Human Sciences* (New York: Random House, 1970; repr. New York: Vintage Books, 1994), p. 168.

<sup>3</sup> Alan Colquhoun, ‘Introduction’, in *Essays in Architectural Criticism*, p. 14.

cultural norms carry the possibility of meaning and represent the only reality accessible to our analysis.

As it is difficult to have genuinely synchronic or diachronic examinations of historical discourses, the dissertation considers type-theories both in the context of historical norms and the relativity of history. Type, in a complication, is both the subject of the historiographical study, but also the historical 'norm' against which architectural theories are historically measured. 'If criticism is to carry out its function of making judgements, it must have at its disposal norms which belong to the architectural tradition—a ground against which to measure and evaluate the contingencies of the present.'<sup>4</sup> Thus, the dissertation is a synchronic comparison of critical times when type-theories have significantly contributed to or been the result of changing architectural concepts and disciplinary knowledge. Of importance to this comparison is how a typical or typological understanding of architecture—and the city as an architectural project—has established a reasoning in which type emerges as both a cultural and diagrammatic function.

The dissertation is divided into three parts. The first part re-examines the syntactic and historicist theories by Quatremère and Durand. The part is concerned with the first principles of typical and typological reasoning and the founding of a modern architectural theory that replaces the concept of mimesis with *memesis* and, importantly, abstraction. It discusses the differences and similarities between these two authors, which informed later theoretical and practical interpretations of the discourse.

The second part studies Semper's synthesis of Quatremère's metaphysical and cultural idealism in a systematic theory of architecture, and Durand's deterministic and utilitarian materialism in a comparative method of design. It examines how Semper's idea of type as an artistic motive underlies his practical aesthetics that consolidate the ambitions of theory and practice in a comparative theory of style.

The third part reviews the recourse to these nineteenth-century theories after the demise of Modernism, which reframed the relationship between architecture and the city through the main concepts of Neorationalism: history, typology, and context. The part focuses on Rossi and Ungers's theories, in which type and typology played a central role to reclaim architecture as an intellectual and socio-cultural but also material and iconographic project through which the city could be reasoned.

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<sup>4</sup> Colquhoun, 'Introduction' in *Essays in Architectural Criticism*, p. 19.



## **PART I: THE EMERGENCE OF TYPAL REASONING**

*'Old' and 'new' indicate themselves no value. Time only contributes to a work of art atmospherically. That types suddenly fascinate, is not because they are new, for the new is at all times outweighed by the insignificant.*

*[...] The splendour of types is rather due to the vigour, with which they grow from the unseparated (Ungesonderten) into the world: from the ahistorical into history, from the nameless into the nameable, from the elementary into shaped form.*

*The unseparated however is not the new, but rather the immemorial; it is in every place at any time. Where it appears, it repeats the beginning and is not just 'new' but 'again and again new' in this recurrence, thus in its capacity of the original.*

Ernst Jünger, *Typus, Name, Gestalt* (1963)

# 1 THE NORMATIVE DISCOURSE OF ARCHITECTURE

*Traditional ideas of embellishment and monumentality, the classical repertory of building types and representational forms, these no longer seemed adequate to satisfy the criteria of economy, utility, and programmatic nicety demanded by administrators. [...] Out of these debates a new understanding of architecture emerged, one that absorbed or transformed classical wisdom on at least two fronts. First, the traditional sense of a building that embodied 'beauty' in its proportions and its three-dimensional geometries was gradually subordinated to the idea of a geometric order that followed the dictates of social or environmental needs. Second, the classical theory of representation, in which a strict hierarchy of embellishment responded to social convenience, was extended into a theory of architectural communication that would be readily accessible to the public.<sup>1</sup>*

The advent of the notion of type in architecture in the early nineteenth century closely relates to an eighteenth-century preoccupation with origins that inspired profound advances in archaeology, anthropology, and etymology. Type in architecture, as in other fields, connoted that knowledge was obtainable and defined by processes of comparison and abstraction. With mounting empiricism and a scientification of knowledge, new methodologies to rationally understand, explain, and represent the past developed. Human history, its development and relation to culture through the production of artifacts, became a central subject of scholarly discourse. This led to a concern with the function and structure of language, and a search for a universal grammar able to account for the evolution of languages and their dialects. The pervasive fascination with origins, history, and language is exemplified in the quintessential project of Enlightenment by Denis Diderot and Jean-Baptiste le Rond d'Alembert: the *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers* (1751–72).

Premised on the conviction that human knowledge depends on the structure of language—is taxonomised according to and defined by an act of naming—the *Encyclopédie* relies on etymology to explicate changes in the meaning and use of a term and to reveal its historical, theoretical, contemporary, social, and practical relevance. The enormous effort of the *Encyclopédie*, emulating the *Cyclopaedia: or, An Universal Dictionary of Arts and Sciences* of 1728 by Ephraim Chambers, is to condense the classical paradigm concerned with representing the relationships between *name* and *order*, and, by discovering 'a *nomenclature* that could be *taxonomy*', establish a 'system of signs that would be transparent to the continuity of being'.<sup>2</sup> The encyclopaedic endeavour inspired discursive debates and systems of classification that affected all domains of knowledge. In the arts, including architecture, a systematisation of knowledge created new rules for rationalisation and standardisation. With

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<sup>1</sup> Anthony Vidler, 'Introduction', in *The Writings of the Walls*, pp. 2–3.

<sup>2</sup> Foucault, *The Order of Things*, p. 208.

the search for first principles, a reinvigorated discussion of *imitation* in the arts was inevitable, as it represented the classical foundation of art theory. Imitation was the conventional framework to discuss artistic production—its origins, means, and ends—and related invention to the past, to precedents, and history. The eventual deconstruction of imitative principles gave birth to modern art theory, evident in the writings of the forefather of art history and art criticism Johann Joachim Winckelmann, but also entailed a canonising of Greek authority.

The eighteenth century witnessed radical social, political, and economic transformations that permanently altered the conception of knowledge and the arts, especially in France. With patronage changing from an aristocratic elite to a growing bourgeoisie, rising demand for luxury led to innovations in manufacture and early industrialisation. An ‘enlightened’ society demanded far-reaching political and social changes, which erupted in the French Revolution. The united political outcry for equality largely resulted from a new access to education and new forums of communication that created an unprecedented public sphere. The ensuing process of modernisation also affected the arts, which turned their attention to concerns of the public. With a politicised function, the arts obtained social purpose and became identified as social institutions, but along with an egalitarian society came its institutionalisation. In an effort to reassert royal control over the diverse artistic, scientific, and humanistic enquiries, a number of academies were established. This included in 1671 the Académie Royale d'Architecture, which in its different guises formed the principal French architectural institution for three centuries until 1968.<sup>3</sup> Coinciding with institutionalisation and challenged by the new building types of a modern society, such as prisons and hospitals, the traditional authority of the ancients was questioned and a reorientation of disciplinary knowledge towards problems of construction and a profession became unavoidable.

Quatremère, the permanent secretary of the Académie des Beaux-Arts (1816–39), saw the modernisation of architecture as intimately linked to that of the fine arts. Consequently, he restructured the system of the arts by demolishing a prevalent notion of imitation. For architecture to be considered a fine art consistent with accepted principles of imitation, it had to be imitative of nature, which was contradicted by its definition as an art of utility. Quatremère therefore devises a historicist and unconventional theory of imitation, positing that architecture’s artificiality accomplishes an imitative and intellectual abstraction superior to the *natural* imitation of the fine arts. He hereby understands historicism in the Goethean sense as a process by which manifestations of individuality provide knowledge of the general, which in turn gives an understanding of history from *within* itself.<sup>4</sup> Quatremère replaces the linear relationship of classical representation to resemblance with an ‘organic

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<sup>3</sup> The Académie Royale d'Architecture was in 1795 integrated with the Institut National des Sciences et des Arts and with the Institut de France in 1806. In 1816, under Quatremère’s leadership, the Académie Royale d'Architecture merged with the Académie Royale de Peinture et de Sculpture and the Académie Royale de Musique to form the Académie des Beaux-Arts, from which the École des Beaux-Arts originated. Its architectural school remained influential until 1968, when its department of architecture was dissolved.

<sup>4</sup> For historicism according to a ‘Historicization of Life’ and Goethe, see Dwight E. Lee and Robert N. Beck, ‘The Meaning of “Historicism”’, *The American Historical Review*, 59.3 (1954), 568–77.

structure' of conceptual thinking, able to historicise and abstract original ideas prior to their transposition into material form.<sup>5</sup> Based on it, he is the first to argue for an abstract, tripartite 'architectural system' of construction, proportion, and ornamentation that precedes any rules of artistic interpretation.<sup>6</sup> Consolidating his theories on the arts in the mid-1820s, Quatremère abandons the mimetic doctrine and recognises the potential of abstraction—an emerging subject of scientific speculation—in the diagrammatic and synthesising function of *type*.<sup>7</sup> This typal abstraction, he believes, communicates reason and constructs meaning through a syntactic structure comparable to language, a correlation he deems evident by the grouping of architecture with rhetoric in the arts. Thus he considers architectural type, character, and style as forming an equivalent universal grammar, claiming: 'columns, cross beams, capitals, and other things that are the natural elements of the art of building are, consequently, and to all architectures throughout the world, the same as the elements of universal grammar are to diverse languages'.<sup>8</sup> While Quatremère's linguistic analogy is unoriginal, he goes beyond others before him by positing that a universal grammar not only provides a superficial means of representation, but also discloses the metaphysics and functioning of the mind in the course of intellection.<sup>9</sup>

Contemporaneous to Quatremère teaching at the Académie des Beaux-Arts, Jean-Nicolas-Louis Durand taught architectural design to engineers at the new École Polytechnique and, at the turn of the nineteenth century, devised a vastly influential method-based course.<sup>10</sup>

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<sup>5</sup> Foucault in *The Order of Things* associates the classical episteme (ca. 1650–1800) with the problem of representation and describes the modern episteme (from 1800) as 'organic structures'.

<sup>6</sup> The notion of an 'architectural system' emerged in the mid-eighteenth century, but was only formalised by Quatremère in the *Encyclopédie méthodique: Architecture*, first in the entry 'Architecture' (1788) and then under the rubric 'System' (1825), outlining a system of architecture based on 'construction, order, and embellishment'. Compare with Richard Etlin, 'The Architectural System', in *Frank Lloyd Wright and Le Corbusier: The Romantic Legacy* (Manchester: Manchester University Press, 1994), pp. 1–75 (pp. 1–3).

<sup>7</sup> For abstraction as a common eighteenth-century phenomena and its employment by Quatremère see David Morgan, 'Concepts of Abstraction in French Art Theory from the Enlightenment to Modernism', *Journal of the History of Ideas*, 53.4 (1992), 669–85.

<sup>8</sup> Quatremère de Quincy, 'Etruscan', in *Encyclopédie méthodique: Architecture*, II (1820), p. 373, trans. by Lavin in *Quatremère*, p. 97. Lavin in the chapter on 'De l'Architecture Egyptienne' and Samir Younés in 'Architecture and Language' discuss Quatremère's use of universal grammar in his theories. Compare Samir Younés, *The True, the Fictive and the Real: The Historical Dictionary of Architecture of Quatremère De Quincy* (London: Andreas Papadakis Publishers, 2000). The concept of universal grammar with an interest in the universal elements and properties of language emerged in the Middle Ages. The late thirteenth-century Modistae developed a phenomenal theory linking language, cognition, and reality. They presumed that the structure of language reflects on reality, and distinguished between universal and language-particular properties of words. While modern universal grammar shares a primary definition of universal properties, in contrast, it assumes it as an innate faculty. Thus, Noam Chomsky in *Reflections on Language* (1975) states that universal grammar is 'the system of principles, conditions, and rules that are elements or properties of all human languages not merely by accident but by necessity'; see Margaret Thomas, 'Medieval and Modern Views of Universal Grammar and the Nature of Second Language Learning', *The Modern Language Journal*, 79.3 (1995), 345–55.

<sup>9</sup> Augustin-Charles d'Aviler in his *Cours d'architecture* of 1691, already employed a linguistic analogy by describing the profiles of architectural orders as an 'alphabet' of composition.

<sup>10</sup> The protracted reform of the French Académie and arts institutions established a number of independent schools, including the École des Arts (1743) and the École Polytechnique (1794), which significantly contributed to a normative curriculum and changing model of education.

Opposing the *art of architecture*, Durand's concern is the *art of building* that gives priority to aspects of construction and utility. Taxonomy hereby serves as the 'scientific' means to compare, analyse, and develop dispositions. His diagrammatic understanding of form and structure redefines architecture's disciplinary conventions by eliminating formal individuation according to character and style, which he believes are non-structural and can be added later, and by emphasising morphology. Premised on a progression from part-to-whole, his design method is a genetic sequencing that effectively deploys procedural differentiation to engender endless combination and complexification of discrete formal elements. By employing graphical comparison, the resultant taxonomies suggest morphological continuity, which gives form a new contextual meaning. A meaning, however, that is internal to the process and dependent on serial reduction.

Although Quatremère asserts his interest in theory and Durand his in practice, confronted with a crisis of classical authority they both turn to abstraction to reconceptualise the problem of history. Quatremère understands type-theory as metaphysical and historicist, and attempts to incorporate it with the advancing rationalisation and relativisation of knowledge. His theory of the arts and, for example, his thesis of polychromy decisively contributes to the demise of classical authority, but also forms the intellectual basis to Gottfried Semper's later reconciliation with Classical Antiquity. Whereas Quatremère still wants to partially uphold the classical doctrine, Durand claims his radical departure. To him architecture is a science of utility, but a discipline defined by its own terms. Whereas Quatremère's type is metaphysical—signifying an essence of architecture and an open artistic beginning—Durand understands typology through genre, through a particular form and programme, as a means of linear taxonomic modification.<sup>11</sup> In both instances, but also Semper's subsequent enquiries, type and typology promise new methodical frameworks to architectural invention and speculation. Their concerted efforts to formulate new instruments of knowledge and analysis conclude the transformation of architecture into a modern discipline, which began in the Renaissance and led to continuous redefinitions of its norms, rules, and inventions. The historicism underlying Quatremère and Durand's theories emerge from the problem of first principles in architecture and the normative French discourse, a debate sponsored by the Académie.<sup>12</sup>

## 1.1 THE FRENCH CLASSICAL CANON

Instigated by Jean-Baptiste Colbert in 1671, the Académie Royale d'Architecture saw its main duty in promoting *la belle architecture* and resolve a growing separation of theory and practice through dissemination an official aesthetic doctrine. The Académie initiated

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<sup>11</sup> This distinction between *beginning* and *origin* is made by Younés; compare 'Quatremère de Quincy's Theory', in *Quatremère's Historical Dictionary*, pp. 20–21.

<sup>12</sup> The normative discourse in architectural writings by the Académie in the seventeenth- and eighteenth-century France are studied by Denis Bilodeau, 'Precedents and Design Thinking in an Age of Relativization: The Transformation of the Normative Discourse on the Orders of Architecture in France Between 1650 and 1793' (unpublished doctoral thesis, Delft University of Technology, 1997).

a normative discourse to clarify and consolidate, but also codify, the theory and practice of architecture. To this end, the Académie founded a school with a first systematic curriculum, reviewed current practice, and supported archaeological and philological studies. The institutional activities succeeded in installing a formal canon intimately linked to a changing prescription of architectural orders and practical solutions to problems of construction. As by the mid-seventeenth century the abundance of proportional systems by different historical authors had eroded their authority as an absolute standard (of beauty), recent access to the ancient cradles of Western civilisation offered a timely opportunity for clarification. With increased archaeological and philological knowledge demanding new analytical rigour, Neoclassicism duly replaced the now relativised Roman style of the Renaissance with a purified style of Greek antiquity.

Roland Fréart de Chambray in his survey of the orders in *Parallèle de l'architecture antique avec la moderne* of 1650 captures changing sentiments by denouncing Roman orders as corrupt and declaring a return to three 'authentic' Greek modes of building: Doric, Ionic, and Corinthian. Having studied the monuments of Rome, he redraws the orders by ten ancient and modern architects and, in order to compare otherwise incommensurable proportions, introduces a consistent modular measurement.<sup>13</sup> The first to standardise proportions, his comparative approach supports the authority of universal models and superiority of the ancients by cleansing the orders from impurities by later interpreters. His methodology defined the contention of the French debate over the next century. Despite Fréart de Chambray's achievement to present a new methodology, it was however his successor Antoine Desgodetz in *Les edifices antiques de Rome dessinés et mesurés très exactement* (1682) who became considered the pioneer of scientific archaeology. Celebrated by the new Académie, Desgodetz was important to François Blondel and Claude Perrault, as his archaeological surveys provided hard evidence for dimensional variations of proportions that implied the subjectivity of the orders.<sup>14</sup>

With both F. Blondel and Perrault as much scientist as architect, they see the idealistic notions of the classical doctrine at odds with the rational empiricism prevalent in the sciences. Whereas Fréart de Chambray's thesis largely depended on studies of buildings, François Blondel (1618–1686), the first professor of architecture in the first state-sponsored school in France, the Académie Royale d'Architecture, but also a mathematician and member of the Académie des Sciences, is predominantly interested in theory. His arguments derive from the study of texts, especially the *Ten Books on*

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<sup>13</sup> The ten architects compared are: Andrea Palladio and Vincenzo Scamozzi, Sebastiano Serlio and Giacomo Barozzi da Vignola, Daniele Barbaro and Pietro Cataneo, Leon Battista Alberti and Giuseppe Viola Zanini, and Jean Bullant and Philibert de l'Orme. The absence of Vitruvius is noteworthy. For the purpose of comparison, Fréart de Chambray divides the module of the orders into 30 minutes.

<sup>14</sup> Compare with Wolfgang Herrmann, 'Antoine Desgodets and the Académie Royale d'Architecture', *The Art Bulletin*, 40.1 (1958), 23–53.

*Architecture* (De architectura, c. 25 BC) by Marcus Vitruvius Pollio, which he, despite acknowledging a deflection by a Roman taste, considers as truthful transmission of the Greek orders. The aim of his *Cours d'architecture enseigné dans l'Académie royale d'architecture* (1675–83) is to complete the Vitruvian project to write a rational textbook. Therefore, the *Cours* develops a new system of rules and prescriptions that adopt the five Vitruvian orders and reconstruct their details by comparing designs and descriptions principally taken from sixteenth-century Renaissance architectural treatises, including those by Andrea Palladio, Vincenzo Scamozzi, and Giacomo Barozzi da Vignola. Comparing proportions with the aim to extract rules of beauty, F. Blondel realises its complication by differing means of measurement. Like Fréart de Chambray, he therefore resorts to defining a unifying standard measurement.<sup>15</sup> The problem of geometrical and mathematical descriptive incongruity compels him to conclude that the orders and their proportions are neither mathematical nor absolute but perceived, which explains the common practice of visual adjustment in the construction of buildings. Whereas ideal harmonic proportions follow immutable orders of the cosmos, the regularity of architecture and its precepts are less certain in their prescription, justifying their continuous reinterpretation. This, F. Blondel insists, does not diminish the authority of the ancients, but demands a new historical attitude, with historicism by definition relativising received knowledge.

In contrast to F. Blondel, Claude Perrault (1613–1688), having translated Vitruvius's *Ten Books of Architecture* into French in 1673, is impelled to question the authority of the ancients. A professor of physiology and anatomy and founding member of the Académie Royale des Sciences, Perrault has the ambition to empirically define the rules of architecture.<sup>16</sup> In *Ordonnance des cinq espèces de colonnes selon la méthode des Anciens* (1683), he once again recognises the discrepancy between ideal orders and actual proportions, contending that the variety and deviation in the works of the ancients and the custom of optical alterations are proof for the relativity of proportions. To compare historical authors and their proportions, he introduces yet another standard of measurement, the *petit module*.<sup>17</sup> By determining relative sizes according to a generic proportional grid, he invents a constant measurement that unifies part-to-whole relations and allows a simplified expression of proportions in natural numbers. This contradicts the immutability and metaphysical connotation of the proportional system, and emphasises the translation from drawing to building and from theory to practice. Averaging the height and ratio of precedent examples, Perrault standardises the five orders and their *ordonnance*, thereby conventionalising architecture in an exact, authoritative, and didactic system of rules with 'probable' proportional dimensions.

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<sup>15</sup> F. Blondel introduced a smaller measurement than Fréart de Chambray: the half-column diameter.

<sup>16</sup> It seems that Perrault was member of the Académie Royale d'Architecture from 1672.

<sup>17</sup> Perrault once again consulted Palladio, Vignola, and Scamozzi, but also Serlio. His *petit module* was based on a third-diameter of a column, equal to 20 minutes.



Fig. 1 Plate 1

From Charles Perrault, *Ordonnance des cinq espèces de colonne selon la méthode des Anciens* (Paris: Coignard, 1683)

Perrault's *Ordonnance* refutes the custom to alter proportions for optical reasons as unscientific and without precedent in antiquity. Encompassing a mathematical and conceptual but also experiential and perceptual understanding of proportion, his scientific distinction between conception and perception lastingly destabilises classical authority, arguing that an a priori and unconditional standard of beauty is untenable, as beauty is only verifiable as an aesthetic form of custom and convention. Formed by changing artistic tastes and inventions, beauty is a concept of cultural and scientific progress: 'neither imitation of nature, or reason, nor good sense in any way constitutes the basis for the beauty people claim to see in proportion and in the orderly disposition of the parts of a column; indeed, it is impossible to find any source other than custom for the pleasure they impart'.<sup>18</sup> With beauty historically conditional, the ancients can only provide a relative tradition of conventions without ultimate authority. Accordingly, Perrault distinguishes two types of beauty. The 'positive, convincing, and necessary' beauty of reason and common sense, self-evident in the 'richness of material; grandeur, opulence, and precision of workmanship; symmetry'; and the 'arbitrary' beauty of custom and prejudice, with its inherent conflict between conception and perception resolved by conventions regulating their meaning.<sup>19</sup> But even positive

<sup>18</sup> Claude Perrault, *Ordonnance des cinq espèces de colonnes selon la méthode des anciens* (Paris: Coignard, 1683). English translation: 'Preface', in *Ordonnance for the Five Kinds of Columns After the Method of the Ancients*, trans. by Indra Kagis McEwan, with introduction by Alberto Pérez-Gómez (Los Angeles: Getty Publications, 1993), p. 52.

<sup>19</sup> Perrault's conception of beauty as a form of custom and reason was influenced by Pierre Nicole's *Traité de la vrai et de la fausse beauté* (1659); compare Pérez-Gómez, 'Introduction', in Perrault, *Ordonnance*, p. 32.

beauties are always partially arbitrary and dependent on customs, reinforcing the fact that any concept of beauty is a form of convention.<sup>20</sup>

Despite classing proportions under arbitrary beauty—unacceptable to most of his contemporaries and cause of great contention in the quarrel between the Ancients and Moderns, in which F. Blondel ‘wins’ the argument over Perrault in the Académie—Perrault does not question the value and persistence of proportions. In fact he sees himself continue a Roman tradition, purporting that ‘I have hardly changed proportions [...] have indeed not invented new proportions’, but only modified them to reveal their true dimensions.<sup>21</sup> However, the relativity of proportions and beauty in architecture, Perrault demanded like his brother Charles for literature, required the adaptation of the classical language to modern customs.<sup>22</sup> Only the Moderns, he claimed, understand this necessity for progress, while the Ancients and their ‘religion of venerating the works they call ancient is inconceivable’ and unreasoned.<sup>23</sup> Perrault’s belief in a progressive architecture directed towards the future, championed empirical knowledge and decisively influenced an architectural theory that negated transcendental content.<sup>24</sup>

Perrault’s radical non-cosmological proposition inspired a series of treatises focussed on design process and building construction. Augustin-Charles d’Aviler in his *Cours d’architecture qui comprend les ordres de Vignole* (1691) combines Perrault’s ‘rational system’ of proportions with F. Blondel’s study of classical precedent.<sup>25</sup> Intended as a practical manual, the *Cours* argues for the instrumentality of precedents to composition, which d’Aviler defines as the outcome of recombining received formal elements. In a comparative study of building elements, he establishes a first entirely formal classification by grouping different ‘species’ or types of building components, such as columns, balustrades, and pedestals. Deriving from architectural orders, the profiles represent an elementary ‘alphabet’ of architecture, which form the basis for invention in a pre-typological method of composition.

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<sup>20</sup> Stanford Anderson argues that with Perrault defining architecture as conventions, the discipline obtains a ‘self-consciousness’ of the ‘norms and of a degree of arbitrariness or relativity’; see ‘Types and Conventions in Time: Toward a History for the Duration and Change of Artifacts’, *Perspecta*, 18 (1982), 109–117. Yet contradicting his thesis that architectural principles, including that of beauty, are only temporary convention, Perrault himself proposed in the *Ordonnance* authoritative rules.

<sup>21</sup> Perrault, *Ordonnance*, p. 59

<sup>22</sup> Charles Perrault, with *Le siècle de Louis le Grand* (1687) and the *Parallèles des anciens et des modernes* (1688) caused the eruption of the quarrel between the Ancients and Moderns. In this dispute about the merits of the ancients and their imitation in contrast to the achievements by contemporary artists, he contended that the Ancients had authority in matters of poetry and eloquence, but otherwise were inferior to the Moderns. While Charles Perrault antagonised the doctrine of Nicolas Boileau-Despréaux, in the subsequent heated architectural debate, Claude Perrault by relativising the authority of the ancients and beauty opposed F. Blondel, who upheld the classical perspective to aspire to absolute principles of beauty.

<sup>23</sup> Perrault, ‘Preface’, in *Ordonnance*, pp. 57–58.

<sup>24</sup> The loss of transcendental is discussed by Pérez-Gómez, ‘Claude Perrault and the Instrumentalization of Proportion’, in *Architecture and the Crisis of Modern Science* (Cambridge, MA: MIT Press, 1983), pp. 17–47.

<sup>25</sup> To Perrault a *rational system* is a ‘principle of constitution, a structural law open to change and improvement’, not a ‘cosmological scheme’; see Pérez-Gómez, ‘Introduction’, in Perrault, *Ordonnance*, p. 15.



While Nativelle still accepts the efficacy of the orders to design, Germain Boffrand defines an alternative conventional nature of architecture, insisting in the *Livre d'architecture concernant les principes généraux de cet art* (1745) that the different functions of buildings are expressed and symbolised by genres and their respective *character*.<sup>26</sup> Seeking an emotive architecture that directly speaks to the mind of the observer through good taste and noble simplicity, Boffrand anticipates an *architecture parlante*—the doctrine that the purpose and character of a building is instantly communicated to the observer through a codified language of architecture.<sup>27</sup> Borrowing from Horace's *The Art of Poetry* (*Ars Poetica* c. 18 BC), he further posits that taste and simplicity are less governed by beauty than determined by the precision of architectural characters and *convenance*, which are comparable to the use of genres and styles in poetry. His taxonomies of architectural character typify material expressions as general 'emotions', which are communicated by specific geometric 'regulating lines' that form the profiles of mouldings. They represent the conventionalised means to compose a building. The legibility and unity of character and form, however, requires a simplified architectural vocabulary and the reductive ordering of regulating lines into schematised geometric matrices of expression. While deduced from classical precedents, Boffrand, a leading champion of the French Rococo, understands these expressions as continuously evolving.

Following Boffrand, psychological interpretations of human character and expression increasingly displace the proportions of nature and the human body. The potential he recognises in the abstraction and enlargement of architectural expression through character influences Quatremère's theory of character, and coincides with an obsession to measure and compare. This results in a broader definition of proportional systems, and a new appropriation of harmonics to design.<sup>28</sup> For example, Charles-Étienne Briseux in *Traité du beau essentiel dans les arts* (1752) proposes an empirical system of beauty derived from musical harmonies, after extensively studying and comparing the harmonies found in precedent buildings.<sup>29</sup> But perhaps the most important eighteenth-century instrumentalisation

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<sup>26</sup> 'Architecture, although its objects may seem to be no more than the use of material, falls into a number of genres, in which its component parts are so to speak brought to life by the different character that it conveys to us.' Germain Boffrand, *Livre d'architecture contenant les principes généraux de cet art: et les plans, elevations et profils de quelques-uns des batimens faits en France & dans les pays étrangers* (Paris: Cavelier, 1745). English translation: *Book of Architecture: Containing the General Principles of the Art*, trans. by David Britt (Aldershot: Ashgate Publishing, 2003), p. 8.

<sup>27</sup> 'It is not enough for a building to be handsome; it must be pleasing, and the beholder must feel the character that it is meant to convey.' Boffrand, *Book of Architecture*, pp. 10–11. A theory of *architecture parlante* was later advanced by Étienne-Louis Boullée and Claude-Nicolas Ledoux; see Emil Kaufmann, 'Three Revolutionary Architects, Boullée, Ledoux, and Lequeu', *Transactions of the American Philosophical Society*, n.s., 42.3 (1952), 431–564.

<sup>28</sup> Since Vitruvius, musical harmonies were considered precise proportional systems. The interest in harmonics in the late seventeenth century resulted in a number of treatises, from Rene Ouyard's *Architecture harmonique* (1679) to Perrault and Boffrand.

<sup>29</sup> After writing two surveys of building types, *L'Architecture moderne ou l'art de bien bâtir pour toutes sortes de personnes* (1728) and *L'Art de bâtir des maisons de campagne* (1743, with plates by J.-F. Blondel), Briseux's *Traité* was most explicit to employ harmonics in design. The relations between cognition, economy of proportion, and derivation of pleasure and beauty, according to Briseux, are empirically and scientifically

of precedents is the survey *Architecture Française* (1752–56) and didactic *Cours d'architecture, ou traité de la décoration, distribution et constructions des bâtiments* (1771–77) by Jacques-François Blondel (1705–1774).<sup>30</sup> *Architecture Française* documents recent buildings and their details, with the primary aim of creating a practical reference manual for design, and the secondary patriotic intention to prove the independence of French architecture from Roman influences. The complementary *Cours d'architecture*, a compilation of lectures at the École des Arts in the 1750s, proposes a design method that employs 'case studies'—adopting a practice-oriented design approach familiar from civil architecture, which in turn borrowed the use of case studies from law.<sup>31</sup> The *Cours d'architecture* expands on Boffrand's theory of expression and develops a taxonomy of no less than thirty-eight different characters, or styles as J. F. Blondel terms them, and sixty-four building genres.<sup>32</sup>

A prolific educator, J. F. Blondel founds in 1743 the École des Arts—the first independent school of architecture and later absorbed by the Académie—with a curriculum that acknowledges the use of case studies as an important element of teaching and learning architecture. J. F. Blondel develops the didactic comparison of case studies into a systematic process of design, in which *ordonnance*, understood as the disposition of details, decoration, and construction, and the order of a building are treated equally. 'Taste', he declares, 'is a matter of the individual and is indeterminate', which means that one can no longer rely on its codification.<sup>33</sup> Architecture as an individual form, therefore, ought to consider a 'proper atmosphere' and satisfy a specific character regulated by principles of fitness and *convenance*.<sup>34</sup> Remaining committed to classical norms and an imitative system of proportions, J. F. Blondel nevertheless admits that the Vitruvian principles of commodity, firmness, and delight are only achievable as a compromise that refines and reinterprets

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determined. Thus, the principles of musical harmony provide a normative *ordonnance* of design and a science of architecture that can derive from a use of precedents.

<sup>30</sup> J.-F. Blondel's *Architecture Française* is a greatly enlarged revision of Jean Mariette's *Architecture Française* (1737). The *Cours d'architecture* was after Blondel's death completed by Pierre Patte.

<sup>31</sup> For example, the engineer Bernard Forest de Bélidor in *Architecture hydraulique* (1737–53) proposed to adapt precedents to derive new formal organisation (*parti*); see Bilodeau, 'Precedents and Design Thinking', pp. 218–24. Comparing the reasoning of architecture and law, Peter Collins distinguishes between precedents in architecture relevant to the judgement of a case and precedents that only have historical significance. To overcome this division of historical and theoretical judgement, he suggests that the use of precedents in a legal manner bridges the gap between the two and can serve as an example for architecture. Case studies are employed as a didactic tool to convey the principles and conventions of a discipline to students. Collins locates the earliest use of case studies in architecture in Blondel's teaching; see *Architectural Judgment* (Montreal: McGill-Queen's University Press, 1971).

<sup>32</sup> Character, according to J.-F. Blondel, has to be appropriate to the purpose of a building and regulates its architectural orders, scale, and decoration of sculpture and ornament; see Robin Middleton, 'Jacques François Blondel and the "Cours d'Architecture"', *Journal of the Society of Architectural Historians*, 18.4 (1959), 140–48.

<sup>33</sup> J.-F. Blondel, *Architecture Française*, 1:23; as quoted by Kaufmann in 'Three Revolutionary Architects', p. 440.

<sup>34</sup> See Kaufmann, 'Three Revolutionary Architects', p. 441. On the relationship of *convenance* to *character* compare Marc Grignon, and Juliana Maxim, 'Convenance, Caractere, and the Public Sphere', *Journal of Architectural Education*, 49.1 (1995), 29–37.

precedents. Consequently, architectural invention equals the modification of received models.

By the end of the eighteenth century, the claim of classical authority to universality is forever destabilised by historicism, individual expression, and the recognition of cultural diversity. Historicism profoundly changes the function of precedents and changes the narrow focus on universal orders to that of both specific and general differences. Despite a relativised classical doctrine, the dispute between F. Blondel and Perrault remains unresolved, however. When J. F. Blondel and Boffrand's student Étienne-Louis Boullée (1728–1799) in the early 1790s writes *Architecture: Essai sur l'art*, he still wants to refute Perrault's thesis of architecture as a 'fantastic art that was pure invention'.<sup>35</sup> Protesting against Perrault's view of architecture as solely imagination and architecture's restriction by F. Blondel to ancient precedents, Boullée returns to its first principle as a rational art of imitating nature. Like Boffrand, Boullée sees architecture foremost as an art of expression, an *architecture parlante* in which the building 'speaks' to the observer like a poem, with symbolic meaning and sensory feeling communicated by the character of a building: 'The impressions they make on us should arouse in us sensations that correspond to the function of the building in question.'<sup>36</sup>

In the *Essay on Art*, Boullée asks what he considers an overlooked question: 'What is architecture?' In reply, he distinguishes between a Vitruvian 'scientific' art of building dealing with construction and his 'conceptual' true art of architecture.<sup>37</sup> This conceptual art is a poetic creation that knows 'how to combine scattered beauties of nature and to make them effective'.<sup>38</sup> Architecture as an artistic and conceptual choice always arises from *within* architecture and exists autonomous from the Vitruvian external and scientific principles. This defines architecture as a true art, which Boullée explains as the (abstract) imitation of nature—a position expanded on by Quatremère. Architecture is superior in its imitation, as its formal regularity closest resembles the abstraction of nature's irregular volumes by human perception into composite and regular volumes in order to comprehend their complexity.<sup>39</sup> The primary rules of regularity, in addition to symmetry and variety, create meaningful volumetric shapes, whereby proportion regulates the combination and effect of regular

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<sup>35</sup> Étienne-Louis Boullée, 'Architecture, Essay on Art', in Helen Rosenau, *Boullée & Visionary Architecture*, trans. by Sheila de Vallée (London: Academy Editions, 1976), p. 82. The *Essay on Art* was not published in French until 1953.

<sup>36</sup> Boullée, *Essay on Art*, p. 82. Nicolas Le Camus de Mézières prepared the shift towards a sensationalist interpretation of character in *Le Génie de l'architecture, ou l'analogie de cet art avec nos sensations* (1780).

<sup>37</sup> 'Vitruvius mistakes the effect for the cause. In order to execute, it is first necessary to conceive. Our earliest ancestors built their huts only when they had a picture of them in their minds. It is this product of the mind, this process of creation, that constitutes architecture and which can consequently be defined as the art of designing and bringing to perfection any building whatsoever.' Boullée, *Essay on Art*, p. 83.

<sup>38</sup> Boullée, *Essay on Art*, p. 88.

<sup>39</sup> Compare with: 'The fine arts acquire brilliance when they are combined and above all (I repeat it) by what they borrow from architecture.' Boullée, *Essay on Art*, p. 109.

order.<sup>40</sup> This constitutes the rationality of architecture. The abstraction of regularity in the process of intellection, guarantees that poetic sensations are principled phenomena deriving from an imitative characterisation of nature—therefore, they are not fantasies of imagination.<sup>41</sup> Character, so Boullée, is the determining criteria of appropriate emotional, social, and functional ideas and their material expression and impression in buildings. This presumes the possibility to translate the sublime experience of nature into a range of architectural expressions and characters, and architecture as a ‘visionary art’ is able to employ a poetry that relates to a wider public agenda and reconciles the loss of a metaphysical tradition with a new scientific abstraction of nature. This symbolic reduction conflates the abstract with sensation, becomes simultaneously represented by rational and expressive forms, while establishing a new *theory of masses*.<sup>42</sup> Boullée’s ambition to unite metaphysical and scientific rationality is also present in Quatremère’s work.

The seventeenth- and eighteenth-century reforms brought about by the French normative discourse, were motivated by the desire to institute a national canon and problematised the concept of history. As long as French architecture was dominated by Roman influence, neither originality nor independence was attainable. The French therefore constructed two arguments that relativised history and emancipated them from the Romans. The first was to return to Greek architecture which, supported by archaeological evidence, diminished the Roman achievements as merely an interpretation of first principles. Therefore, Neoclassicism interpreted Greek antiquity more austere than the classical revival during the Renaissance. The second tactic was to question the authority of all ancients, however, without entirely abandoning classical conventions. Thus a new disciplinary beginning was claimed, one in which invention could be defined in contemporary terms. This required a fundamental modernisation of the discipline, achieved by a shift from a transcendental and metaphysical to a scientific and syntactic enquiry, with the new focus on construction and design method creating specialised fields in architecture. The arising problem of design method, unavoidably linked to history by a prevalent utilisation of precedents, was later resolved by Durand.

Yet the deep ideological divides emerging with the eighteenth-century normative debate would remain unresolved and caused a loss of disciplinary unity. By the early nineteenth

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<sup>40</sup> Boullée believes that the ideal properties of proportion and volume are represented in the sphere, ‘the image of perfection’; see *Essay on Art*, p. 86. The project for the *Cénotaphe a Newton* (1784) expresses his conviction and concern with architectural form, pure geometries, and polarity.

<sup>41</sup> Architecture finds its means of expression in the ‘the play of light and shadow, by picturesque forms and their lack of similitude’, which are developed by the arrangements and proportions of volumes, and ‘good taste’; Boullée, *Essay on Art*, p. 90. Contesting Perrault that architectural principles are analogous to music, Boullée asserts that the architect, unlike the musician whose proficiency does not depend on a conscious knowledge of harmony, ‘knowingly’ and purposely resolves in his work problems of regularity.

<sup>42</sup> Boullée saw himself as an inventor of a new theory of masses; compare Kaufmann, ‘Three Revolutionary Architects’. Boullée claimed: ‘I would advise those who intend to take up architecture to study my designs scrupulously, to ponder on them and on my writings, before coming to any conclusions; then, to do as I have done with regard to the ancients, that is to respect their designs when they are good, but not to follow them slavishly; but to become rather a slave of nature which is an inexhaustible spring where all of us, however many we are, should draw continuously.’ Boullée, *Essay on Art*, p. 112.

century the quest for a cohesive French canon waned, partly due to the impossibility of the ambition itself but also increasingly displaced by the problems arising from technological rationalisation and stylistic standardisation. In fact, the normative discourse paradoxically uncovered a growing architectural pluralism. Keenly aware of the futility to seek a universal canon in the distribution of buildings, Quatremère noted: 'After reading d'Aviler, Laugier, Blondel, Mézières and other who wrote on this subject, one is compelled to acknowledge that there are no rules to propose in this matter.'<sup>43</sup>

## 1.2 THE HISTORY AND THEORY OF ARCHITECTURE

After Perrault established a conventional nature and relativity of architectural styles, which introduced a new historiography, the absolute authority of the ancients became impossible to uphold. A decisive contributor to a historicist reassessment of Greek antiquity and the first to substantiate that Vitruvius's interpretations of the Greek orders were influenced by changing Roman tastes, was Julien-David Le Roy (1724–1803).<sup>44</sup> Having visited Greece in winter 1754–55, Le Roy published *The Ruins of the Most Beautiful Monuments of Greece* (Les Ruines des plus beaux monuments de la Grèce) in 1758, the first in a series of significant archaeological, antiquarian, and aesthetic studies of antiquity, especially focussed on Greece.<sup>45</sup>

*The Ruins* was rushed to print in an attempt to outmanoeuvre the highly anticipated *Antiquities of Athens* (1762–1816) by James Stuart and Nicholas Revett, announced as the first comprehensive and measured survey of Greek monuments, but on its publication was immediately plagiarised in a deficient English translation by Robert Sayer in the *Ruins of Athens with Remains and Other Valuable Antiquities in Greece* (1759).<sup>46</sup> Sayer unwittingly provided the grounds for attack of *The Ruins* by Stuart, who pointed out its numerous factual inaccuracies, and Giovanni Battista Piranesi fiercely objected to Le Roy's claim that

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<sup>43</sup> 'Distribution', in Antoine-Chrysostome Quatremère de Quincy, *Dictionnaire historique d'architecture, contenant dans son plan les notions historiques, descriptives, archéologiques, biographiques, théoriques, didactiques et pratiques de cet art*, 2 vols (Paris: Librairie d'Adrien Le Clere et Cie, 1832). Selected trans. by Samir Younés in *The True, the Fictive and the Real: The Historical Dictionary of Architecture of Quatremère De Quincy* (London: Andreas Papadakis Publishers, 2000), pp. 143–45 (p. 145); hereafter cited as *Quatremère's Historical Dictionary*.

<sup>44</sup> A study of Le Roy's clarification of the Doric order and his critique of Vitruvius is given by Christopher Drew Armstrong, 'Greek Architecture and the Doctrine of Vitruvius', in *Julien-David Leroy and the Making of Architectural History* (London: Routledge, 2012), pp. 87–135.

<sup>45</sup> Le Roy spent three years in Rome (1751–54) before travelling to Greece for a few months. Other important contemporaneous studies of Greek antiquity are Richard Pococke, *A Description of the East and Some Other Countries* (1743–45); James Dawkins and Robert Wood, *The Ruins of Palmyra* (1753) and *The Ruins of Baalbek* (1757); Johann Joachim Winckelmann, *History of the Art of Antiquity* (1764); and Comte de Caylus, *Recueil d'antiquités égyptiennes, étrusques, grecques et romaines* (1753–67).

<sup>46</sup> The rivalry between Le Roy and Stuart and Revett, and the reception of *The Ruins*—first known to Stuart through Sayer's translation that combined a grossly abridged version with George Wheeler's descriptions in *A Journey into Greece* (1682)—is discussed by Robin Middleton, 'Introduction', in Julien-David Le Roy, *The Ruins of the Most Beautiful Monuments of Greece*, trans. by David Britt (Los Angeles: Getty Publications, 2004), pp. 1–25, and Jeanne Kisacky, 'History and Science: Julien-David Leroy's "Dualistic Method of Architectural History"', *Journal of the Society of Architectural Historians*, 60.3 (2001), 260–89.

the Roman style was an unoriginal copy of Greek precedent. Although celebrated in France, *The Ruins* was quickly supplanted by the *Antiquities of Athens* as the authority on Greek architecture, consulted by scholars throughout the nineteenth-century.<sup>47</sup> Nevertheless, Le Roy's work had a great influence on a rising aesthetic debate and new historical consciousness.

In response to the accusation of technical incompetence levelled at him, Le Roy defiantly states in *Observations sur les édifices des anciens peuples* (1767) that he never intended to simply survey buildings in *The Ruins*, but aimed to select historically and architecturally important monuments that would convey a Greek essence and experience. 'I measured the monuments of Greece to understand relationships among them, relationships to the architecture of earlier and later peoples, and to the principles of Vitruvius. My measurements were made with more precision than was required to draw my conclusions.'<sup>48</sup> His retort reveals a historiographical position in which historical and geographical context are essential to the reading of architecture, but distinct from and complementary to its theory. Significantly, no formal distinction between the *history* and *theory* of architecture existed before *The Ruins*.<sup>49</sup> And despite Le Roy's later appointment as historiographer adjoined to J. F. Blondel at the Académie, separate teaching positions in history and theory were only established in 1818 by Quatremère. Le Roy's studies of Greek monuments and their orders, which Vitruvius transmitted, had the pedagogical aim to hone the taste of connoisseurs and, more importantly, to educate that of the public by promoting a sustained aesthetic relevance of Greek artifacts. Reading artifacts both in their historical dimension and as living forms still experienceable, by comparing evidence from the past and the present, Le Roy concludes that the Tuscan order was not a Roman invention but a variation of the Greek Doric style. Vitruvius's Doric order could not account for the Greek three-stage development and canonised a style suitable to contemporary Roman tastes. Examining stylistic changes, Le Roy notices that throughout antiquity, styles demonstrated a significant dependence on socio-cultural and geographic context, making styles historically idiosyncratic and not a priori ideal forms. The first to explicate the development of styles as a progressive but relative and nonlinear process of historical contingency and exchange, Le Roy precedes Winckelmann's dogma that all art historical enquiries consider context: a society's development and its culture, climate, and geography. Despite this historicist relativisation, Le Roy believes in the

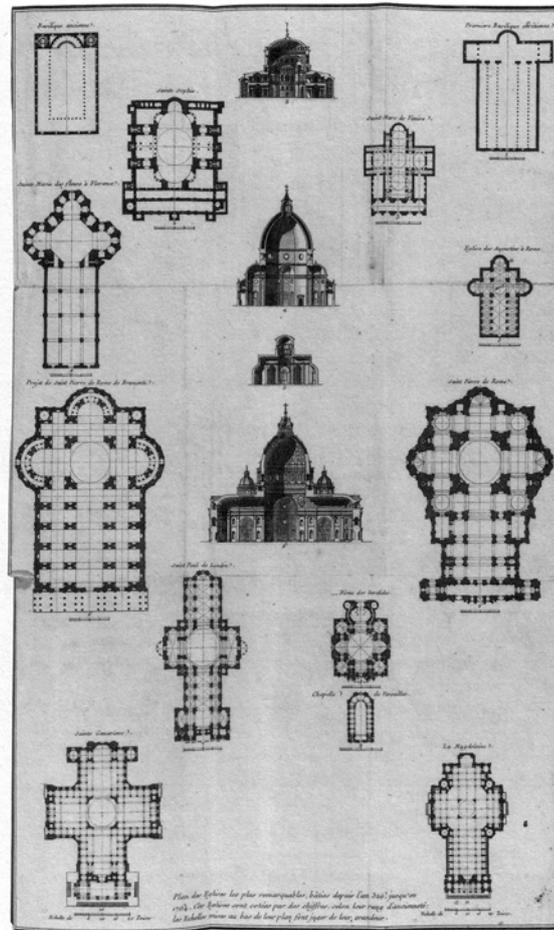
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<sup>47</sup> The reception of *The Ruins* by Stuart and Piranesi and the circle around the French academy is detailed by Armstrong in *Julien-David Leroy*, pp. 6–8 and 38–43. Giovanni Battista Piranesi in *Della magnificenza de architettura de' Romani* (1761) attacked Le Roy and argued that the Greeks copied Etruscan art, which had derived from the Egyptians, concluding that the art of architecture was an Egyptian and Etruscan invention with the Romans forming a direct lineage rather than the Greeks.

<sup>48</sup> Julien-David Le Roy, 'Reflexions préliminaires', in *Observations sur les édifices des anciens peuples* (1767), p. 7–8, trans. by Armstrong, in *Julien-David Leroy*, pp. 7–8.

<sup>49</sup> When *The Ruins* was published, only two surveys of architectural history existed in France: Jean François Félibien's *Recueil historique de la vie et des ouvrages des plus célèbres architectes* (1687) and Charles Rollin's *Histoire ancienne des Egyptiens, des Carthaginois, des Assyriens, des Babyloniens, des Medes et des Perses, des Macedoniens, des Grecs* (appearing in the eleventh volume in 1737); see Middleton, 'Introduction', in *The Ruins*, pp. 117–19.

possibility to analyse the process of formal development through taxonomic comparison, which permits periodisation and a historiographical clarification.



**Fig. 4 Plan des églises les plus remarquables bâties depuis l'an 326 jusqu'en 1764**

From Julien-David Le Roy, *Histoire de la disposition et des formes différentes que les Chrétiens ont données à leurs temples depuis le règne de Constantin le Grand jusqu'à nous* (Paris: Desaint & Saillant, 1764)

*The Ruins* was significantly amended and enlarged for its second edition in 1770, which incorporates an advanced argument of history and theory developed by Le Roy since, especially in the *Histoire de la disposition et des formes différentes que les Chrétiens ont données à leurs temples depuis le règne de Constantin le Grand jusqu'à nous* (1764) and *Observations* of 1767. The *Histoire* summarises the evolution of Christian churches with domed crossings, not in an entirely novel way but in a greatly significant plate entitled *Plan des églises les plus remarquables bâties depuis l'an 326 jusqu'en 1764*.<sup>50</sup> The comparative

<sup>50</sup> Middleton traced earlier examples of comparative plates to Jacques Tarade's *Parallèle des églises de St. Pierre de Rome et de Nre. Dame de Paris*, in *Dessins de toutes les parties de l'église de Saint Pierre de Rome* (1713) that compares the scale of Notre Dame in Paris with Saint Peter's in Rome. Based on Tarade, Juste-Aurèle Meissonnier drew plates in the *Parallèle général des edifices les plus considerables depuis le Egyptiens, les Grecs jusqu'à nos derniers modernes* (c. 1757, published only after his death by Gabriel Husquier). Both Tarade and Meissonnier's plates were copied by Gabriel-Pierre-Martin Dumont as *Parallèle des églises de S. Pierre de Rome et de Notre Dame de Paris* and *Parallèle de monumens sur une même echelle* in *Détail des plus intéressantes parties d'architecture de la basilique Saint-Pierre de Rome* (1763), which are likely to be known to Le Roy; see 'Introduction', *The Ruins*, pp. 90–97. Armstrong further argues that Carlo Fontana's *Templum Vaticanum et ipsius origo* (1694) was the most significant precedent to Le Roy's comparative *tableaux* of domed churches; compare *Julien-David Leroy*, pp. 161–66.

plate juxtaposes plans and sections, with comparison made possible by providing equivalent scales. Following a Linnaean taxonomy, the diagrammatic matrix rehearses the key arguments repeated by later discourses concerned with an evolution of architectural form—and unmistakably prepares Durand's process of methodical reduction based on a comparison.

Similar to *The Ruins*, Le Roy's interest in the *Histoire* is not stylistic details or chronology but formal and morphological relations that create a progressive sequence of transformation and composition. Published to demonstrate the superiority of Jacques-Germain Soufflot's design of Sainte-Geneviève over previous design solutions, the *Histoire* instrumentalises graphical comparison to disclose the particular character of buildings and a specific line of development.<sup>51</sup> Sainte-Geneviève is depicted in the centre as a synthesis of three formal and progressive developments: the cross-shaped plan, the parallel rows of freestanding columns in the basilica, and the dome. Le Roy's comparative plates differ from earlier examples by giving a clear account of typological development and transformation within a formal group of buildings, and by graphically conveying their *deep structure*: common organisational and structural diagrams. 'A figure', writes Le Roy, 'even a small one, will better transmit an understanding of a building and will more promptly communicate its disposition than the most thorough verbal description.'<sup>52</sup>

Familiar with scientific studies confirming the human perception of spatial environments as conditioned by physiology but ultimately a learned understanding, Le Roy argues that the comprehension of architecture similarly depends on visual and haptic perception—which changes with the movement of an observer and is attributable to the reception of light in relation to form, proportion, and detail—and on an acquired knowledge of conventions through which perceived phenomena are comprehended.<sup>53</sup> Experience as a physiological and cultural phenomenon, therefore, is a central argument of the *Histoire* and *Observations*, and indebted to empiricist writings of its time positing sensory stimulation as the primary means to understanding, knowledge, and aesthetic judgement.<sup>54</sup> A key precedent to Le

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<sup>51</sup> Soufflot was given some advice on the design of the dome by his friend Le Roy.

<sup>52</sup> Julien-David Le Roy, *Histoire de la disposition et des formes différentes que les Chrétiens ont données à leurs temples depuis le règne de Constantin le Grand jusqu'à nous* (Paris, 1764), p. 6; as cited by Armstrong in *Julien-David Leroy*, p. 162.

<sup>53</sup> Confirming visual perception as an acquired skill was a restorative operation by William Cheselden on a blind boy in 1728, who post-operation still could not comprehend depth or distance. This example was of great interest to Le Roy's contemporaries; the operation is recounted in Voltaire's *Eléments de la philosophie de Newton* (1738) and Edmund Burke's *A Philosophical Enquiry into the Origins of Our Ideas of the Sublime and Beautiful* (1757). Le Roy's brothers Charles and Jean-Baptiste Le Roy carried out related experiments. Charles, a physician, established in 1755 a relationship between visual images (light flashes or phosphenes) and the brain by stimulating a blind man with electric currents. He also published the scientific paper *Mémoire sur le mécanisme par lequel l'œil s'accommode aux différentes distances des objets* (1755), while Jean-Baptiste wrote *Mémoire où l'on rend compte de quelques tentatives que l'on a faites pour guérir plusieurs maladies par l'électricité* (1755).

<sup>54</sup> This writing includes *An Essay Concerning Human Understanding* (1690) by John Locke, which differentiates between acquired and complex (or abstract) ideas, and primary and secondary qualities, the

Roy's *The Ruins* is *Réflexions critiques sur la poésie et sur la peinture* (1719) by Jean-Baptiste Dubos, an art theory based on sentiment and taste that examines the role of climate and geography on artistic expression.<sup>55</sup>

Le Roy seeks to represent formal factors of scale and composition diagrammatically and implicitly relates form to its perception by the senses, in order to clarify the combined perceptual and conceptual affect on progressive aesthetic experience and knowledge. This presumes that diagrammatic representation makes formal and historical development available to comparative analysis and compositional advances. Evoking Winckelmann's 'Preface' to the *History of the Art of Antiquity* (*Geschichte der Kunst des Alterthums*, 1764), Le Roy notes in *Observations* that by 'considering some scattered points in the line of discoveries that man has made in Architecture, we manage to discover its origin, trace its contours and determine its end point'.<sup>56</sup> Correspondingly, the *Observations* develops a rigorous account of history and provides a Winckelmannesque periodisation according to stylistic progress.<sup>57</sup> Acknowledging that the Phoenicians created the first original architectural models (the monument and pyramid), which later transformed into the hut, Le Roy claims that the Egyptians applied grandeur of scale and material to the model of the hut, before the Greeks perfected its idea first in wood and then in stone construction. Importantly, the *Observations* and *The Ruins* present historical development as parallel and contingent, and as exemplified within specific contexts, events, and inventions that are conditioned by culture, style, geography, and climate. This thesis of parallel development allows Le Roy to propose that the Greek style, despite an exchange with preceding Egyptian and oriental cultures, effectively emerges independently. His position contradicts an accepted scholarly consensus stating development as always closely interconnected, a thesis supported, for example, by Pierre-Jean Mariette's *Traité historique des pierres gravées du Cabinet du Roi* (1750) and Anne-Claude-Philippe, Comte de Caylus's *Recueil d'antiquités égyptiennes, étrusques, grecques et romaines* (1752–67)—which both however financially supported *The Ruins*. Le Roy's concept of history is both general and specific, a history tracing the general, shared developments of 'primitive original ideas', but in their independent evolution within specific cultures.

Both the *Histoire* and *Observations* are incorporated into the introductory essays on history and theory in the reorganised second edition of *The Ruins* in 1770, which retains the didactic division between sensations and rationality as the grounds to aesthetic judgement, but further

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*Traité des sensations* (1754) by Étienne Bonnot de Condillac that develops Locke's argument of sensations as the basis to understanding, and an *Essai sur le goût* (1757) by Charles de Secondat, baron de Montesquieu, which defines taste as a human trait that is both natural and acquired, cultural and individual.

<sup>55</sup> See Middleton, 'Introduction', in *The Ruins*; and Kisacky, 'History and Science'.

<sup>56</sup> Le Roy, 'Réflexions préliminaires' (1767) in *Observations sur les édifices des anciens peuples*, p. 17; as quoted by Kisacky, 'History and Science', p. 272.

<sup>57</sup> Winckelmann cited Le Roy's *The Ruins* in his *History of the Art of Antiquity*; compare with Armstrong, *Julien-David Leroy*, pp. 138–40.

emphasises their synthesis rather than separation.<sup>58</sup> The twofold historical and theoretical analysis of the same object questions the objectivity of either and suggests a complementarity of different forms of knowledge. The concept of history elaborated by Le Roy in the 'Essay on the History of Architecture' derives from a positivist development of primitive ideas in architecture, whose archetypes are the hut and temple. Considering archetypes as instinctive and universal to all societies, it relativises origins but makes individual development critical: 'It is these differences, these affinities, these successive transitions from one perfection to another that we intend to demonstrate in the present essay.'<sup>59</sup>

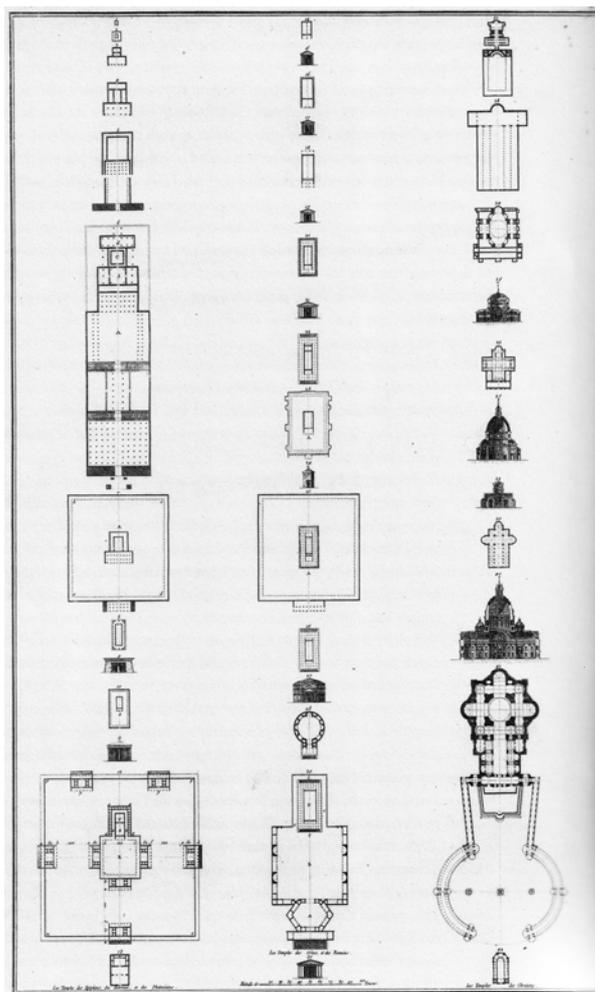


Fig. 5 Plate 1

From Julien-David Le Roy, *Les Ruines des plus beaux monuments de la Grèce*, 2nd edn (Paris: Delatour, 1770)

<sup>58</sup> While the first edition of *The Ruins* in 1758 was divided into two volumes with a separate 'historical' and 'architectural' (theoretical) discussion, the second edition of 1770 was chronologically structured. Volume 1, introduced by the *Essay on the History of Architecture*, first historically and then architecturally considered Greek monuments before Pericles, while volume 2, introduced by the *Essay on the Theory of Architecture*, similarly gave a historical and architectural account of monuments after Pericles. This structure enforced Le Roy's argument that Greek architecture was in decline after the Roman rule, but also clarified his concept of historical and theoretical synthesis.

<sup>59</sup> Julien-David Le Roy, *Les Ruines des plus beaux monuments de la Grèce: considérées du côté de l'histoire et du côté de l'architecture*, 2nd edn, 2 vols (Paris: Louis-François Delatour, 1770). English translation: *The Ruins of the Most Beautiful Monuments of Greece*, trans. by David Britt (Los Angeles: Getty Research Institute, 2004), p. 210.

Examining the historical changes of the temple, Le Roy introduces once more an important diagrammatic plate. Organised by three columns, he compares the progressive transformation of the Egyptian and Phoenician, Greek and Roman, and Christian hut into temples with increasing scale, complexity, and detail, accompanied by a text explaining the relation of each example to its evolutionary and typological predecessor. The graphical comparison is presented as objective, ordered by typological and morphological differences or similarities as they occur relative to each other.<sup>60</sup> Despite its chronological appearance suggesting a progressive development, the plate in fact follows a nonlinear historical time with multiple points of beginnings and parallel developments compressed into a comparative diagram. Emerging diversity is hereby explained contextually, as ‘the forms of the buildings largely depend on climate and that the principles of architecture are not all so general that they do not sometimes give way before such influences’.<sup>61</sup>

Corresponding to a historical focus in the first volume, the second is framed by an ‘Essay on the Theory of Architecture’ and postulates a system of principles divided into three classes according to general and common architectural *ideas*. The first class contains universal principles and axioms related to practical problems of construction, mechanics, and siting, considering the utility of buildings to satisfy human needs. The second includes general principles of sensual perceptions that evoke experiences of pleasure and beauty, and comprises the judgement of architecture, which based on a perception of pleasantness, strength, and variety is created by the surface effect, scale, and mass of a building. Likewise, spatial articulation and comprehension of depth, animation, and contrast are relative experiences depending on light, the relationship of an object to others, and the observer’s movement. Of particular importance to Le Roy are surface effects, which as man-made sensations of beauty equal metaphysical experiences, and are comparable to feelings aroused by the sublime and beautiful nature by emphasising architecture’s symbolic character.<sup>62</sup> Beauty, so Le Roy, is the result of an animated visual experience and comprehension and, owing his argument to Charles de Secondat, baron de Montesquieu, the restriction of sensory stimulus heightens this pleasurable understanding. Taste, a universal quality deriving from the imitation of nature, and habit, a less certain cultural condition, are further general principles communicated by symmetry, regularity, and irregularity, and exemplified by the Greek system of proportions. Finally, the third class of principles are those only selectively accepted as they depend on climate, available building materials, and customs. Yet, precisely these geographically and culturally specific factors account for the variety of styles and formal or proportional differences. They explain the higher artistic achievements of some people and cultures over others.

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<sup>60</sup> However, Le Roy in his text asserts the superiority of Greek architecture, as it independently established a system of proportions based on optical properties.

<sup>61</sup> Le Roy, *The Ruins*, p. 229.

<sup>62</sup> Le Roy’s argument largely derived from a historical study of churches; compare Richard A. Etlin, *Symbolic Space: French Enlightenment Architecture and Its Legacy* (Chicago: University of Chicago Press, 1994), pp. 118–21.

The historical analysis of monuments in *The Ruins* is explained by rendered views and written accounts, a combination of travel diary, historical anecdotes, and events that convey a graphical impression of the socio-political and cultural context in which the monuments were built and are still experienced.<sup>63</sup> In contrast, the ‘theoretical’ or architectural analysis is illustrated by measured plans that compare details and proportions, with this material examination of monuments correlated to the preceding historical descriptions. The analysis of monuments is organised by the use of architectural orders and their details, and by comparing their architectonic and material-formal characteristics to each other and the historical context, establishing how a particular instance forms the beginning or progression of an imagined line of development.<sup>64</sup> However, Le Roy relativises this rigid structure of architectural styles and their progression by emphasising the experience of architecture as a living form. While his historical discussion suggests (cultural) homogeneity and chronology, the theoretical examinations introduce a typological argument. Typology is a framework operating outside of historical time and permits a rational description of diverse and simultaneously occurring formal-structural developments towards perfection. Le Roy’s twofold reading provides therefore a double historical and ahistorical synthesis of the general-historical with the specific-formal. Like Winckelmann’s historiographical methodology, Le Roy attempts to overcome the eighteenth-century separation of historical-contextual and aesthetic-internal readings of an artifact by attaching significance to the study of the object itself. Therefore, when Anthony Vidler asserts that Winckelmann combines two scholarly traditions, the same can be said for Le Roy:

The first was the body of rules governing taste, form, composition, propriety, and genre, generally understood as the ‘theory of art’. The second was the account of the remains of the past commonly understood as ‘history’, sometimes chronological, sometimes heterotypical, sometimes arranged by juxtaposition, similarity, or resemblance.<sup>65</sup>

The synchronised historical and theoretical-architectural enquiries represent to Le Roy the complementary psychological and physiological facets of ‘primitive original ideas’. Historical conditions and context affect the formal and evolving adaptation of architecture, with its

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<sup>63</sup> Importantly, this included Le Roy’s own experience of the monuments. The historical parts of *The Ruins* are appended by short essays on measurement, first on the *Length of the Greek Foot*, which Le Roy establishes to be 11 inches 4 lines 5 3/5 points of a French foot, and then by the *Length of the Course at Olympia*.

<sup>64</sup> ‘The present part will compare the proportions of those monuments [erected by the Athenians], to show the relations among them and between them and certain Roman monuments and also to substantiate the views advanced in our remarks on the history of architecture regarding the changes effected by the Greek orders before the end of the age of Pericles, both in places where they originated and in those where they were imitated.’ Le Roy, ‘The Ruins of the Monuments Erected by the Athenians before the End of the Age of Pericles and Alexander, Architecturally Considered’, in *The Ruins*, p. 309 [my add.].

<sup>65</sup> Anthony Vidler, ‘The Aesthetics of History’, in *Writings of the Walls*, p. 127. Vidler also points out that Winckelmann was aware of and influenced by Le Roy’s *The Ruins* when writing his *Observations on the Architecture of the Ancient Temple of Agrigentum in Sicily* (1759), *Observations on the Architecture of the Ancients* (1760–62), and *History of Art* (1764).

transformation diagrammatically representable by drawings that abstract and clarify architecture's changing internal and external relations. With this, a common reasoning for a consistent aesthetic judgement of architecture is given, one based on principled and rational phenomena. At the same time, Le Roy insists on the importance of a subjective experience of architecture, affected by emotional and psychological sensations that architecture arouses within a particular situation.<sup>66</sup> Thus, *The Ruins* can be seen as a precursor to a number of modern investigations. First and most notably, the challenge to make history (and theory) operative within a historicised and increasingly ahistorical concept of context—leading to a question of origins and historicity explored by Quatremère. Second, the potential of drawings as diagrams to methodically analyse buildings and their design, both typologically and morphologically—continued in the studies of normative genres as a design aid by Durand. Third, the recognition of phenomenology and psychology as important aspects of architecture's reality. Le Roy diverges from the classical episteme of knowledge and prepares a thinking associated with the modern episteme—a rupture characterised by Michel Foucault as the emergence of positive sciences and by 'history as both knowledge and the mode of being of empiricity'.<sup>67</sup>

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<sup>66</sup> Following Le Roy, Le Camus de Mézières in *Le Génie de l'architecture* (1780) significantly moved towards a psychological thinking in architecture—prepared by Condillac and Claude-Henri Watelet, and later developed by Boullée. Mézières rejected the imitation of canonical examples, with the classical language only valid to him as a framework to prescribe architectural expression and character. He was instead interested in an aesthetic theory of sensations and emotions, and the phenomena of architectural expression, the psychological experience of architecture created by visual effects and perception, as well as the play of light and shadow. Inspired by scenography, painting, and garden design, he enlarged the traditional sources of architectural precedents and sought those with an explicit aesthetic and experiential nature, aiming to define a broader idea of *convenance* adaptable to modern tastes and needs.

<sup>67</sup> Foucault, *The Order of Things*, p. 221.

## 2 TYPOLOGICAL MODELS

*It is to architecture that man owes his survival, society its existence, and the arts their birth and development. In a word, utility—and the greatest utility possible, both public and private—is the sole purpose of architecture.*

*Architecture is made for man and by man. By his very nature, when he erects buildings, he must seek to enjoy all the consequent advantages at the least possible cost in exertion and expense, and thus to arrange them in the fittest and most economical way. Fitness and economy: such are the means that architecture must naturally employ.<sup>1</sup>*

Two of architecture's most influential academics of the early nineteenth century were influenced by Le Roy: Quatremère, the winner of the prestigious Prix Caylus, devised and judged by Le Roy, and Durand, his student at the Académie.<sup>2</sup> Quatremère's theory of multiple origins, his ahistorical reading of architecture, and the notion of progressive and universal ideas, is rooted in a socio-cultural and geographic reading owing to Le Roy. Durand in turn borrows from Le Roy the possibility to suspend stylistic problems through diagrammatic reduction, and devises a design method that no longer derives from the selection of orders but the formal structure of buildings. Le Roy equips both with a new historicist perspective that despite being historical, permits an ahistorical understanding of architecture as the product of continuous human invention and exchange. Astutely aware of rising contradictions between the metaphysical and formal properties of architecture, they argue for a new disciplinary knowledge arising from abstraction and typal or typological reasoning. Yet, it is not Quatremère but Ribart de Chamoust, the inventor of a French Order—a triplet of columns modelled after an archetypical grouping of three trees—who first uses the term 'type' in architecture, stating in *L'Ordre François trouvé dans la nature* (1783):

I mean by this word *type*, the first attempts of man to master nature, render it propitious to his needs, suitable to his uses, and favourable to his pleasures. The perceptible objects that the Artist chooses with justness and reasoning from Nature in order to light and fix at the same time the fires of his imagination, I call *archetypes*.<sup>3</sup>

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<sup>1</sup> Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'École Royale Polytechnique*, 2 vols (Paris: the author, 1802–1805). English translation: *Précis of the Lectures on Architecture with Graphic Portion of the Lecture on Architecture*, trans. by David Britt, with introduction by Antoine Picon (Los Angeles: The Getty Research Institute, 2000), p. 187.

<sup>2</sup> Lavin in *Quatremère* details Le Roy's involvement in the competition won by Quatremère's *Mémoire*, but only cursorily suggests an influence of *The Ruins* on Quatremère's theory of architecture.

<sup>3</sup> Ribart de Chamoust, *L'Ordre François trouvé dans la nature* (Paris: 1783), p. 5; as cited by Vidler in 'The Idea of Type', pp. 97–99. De Chamoust claimed to have written the book already in 1776.

Type represents to Ribart the symbolic and material elements of architecture, such as defined by Laugier in his ‘primitive hut’: columns, entablatures, and pediment.<sup>4</sup> Although Durand seems to formulate a typological method in the *Précis of the Lectures on Architecture Given at the École Polytechnique* (1802–05), the notion of type as adumbrated by Ribart is not codified until Quatremère’s entry of ‘Type’ in the *Encyclopédie méthodique: Architecture* of 1825—commonly known as the *Dictionnaire d’architecture*. This fact is explained by Durand and Quatremère’s converging enquiries originating from two unrelated investigations. Continuing a Renaissance tradition of instrumentalising drawing, Durand conceives a normative classification of formal precedents for the design process by adopting a typological order and morphological abstraction—already evident in Sebastiano Serlio’s early sixteenth-century pattern book *On Domestic Architecture*. In contrast, concerned with the classification of the arts, Quatremère seeks a critical theory able to overcome the classical doctrine of imitation—which dominated the aesthetic debate and disabled its progress—by proposing a displacement of nature through the abstraction of type.

According to a popular thesis promulgated by the historian Vidler, Quatremère by the 1790s had developed a complete theory of type based on his conclusions of architectural origins in the *Mémoire sur l’architecture égyptienne* (1785) and an interpretation of Laugier, Winckelmann, and Ribart, clarified in the first volume of the architectural dictionary in 1788 (entry ‘Character’ and ‘Hut’). Quatremère, so Vidler, merely restates this position later in *De l’architecture égyptienne* (1803) and ‘Type’ (1825).<sup>5</sup> In his view, the *Mémoire* develops the main arguments of Quatremère’s architectural theory by transforming Laugier’s singular type of the hut into an idea of multiple origins (cave, tent, and hut). However, by privileging the hut as the original and Greek model of perfection, the diversity suggested by manifold origins is essentially negated. Therefore, Vidler dismisses Quatremère’s subsequent theories that develop the idea of origins as mainly rhetorical elaborations without providing new grounds for knowledge. Proposing that a theory of type is fully formed by the 1790s, permits him to include Durand in the historiography, as it relativises the chronological conflict of Durand’s *Précis* (1802–05) predating Quatremère’s dictionary entry of 1825, which is widely accepted as the inception of the typological discourse. Vidler’s reasoning seems further motivated by the problem that Quatremère was in the mid-nineteenth century derided by his contemporaries as a reactionary responsible for upholding a neoclassical doctrine at the Académie des Beaux-Arts, thus an unlikely modern theorist—a view

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<sup>4</sup> Compare with Vidler, ‘The Idea of Type’, pp. 97–99.

<sup>5</sup> See Anthony Vidler, ‘The Idea of Type’ (1977) in *Oppositions*, and ‘From the Hut to the Temple’, pp. 147–64. In the latter (p. 147) Vidler claims that the idea of type: ‘derived from a more or less logical combination of the idea of origins, as enunciated by Laugier and epitomized in the primitive hut as a paradigm of structure, and the notion of characteristic forms, as both embedded in the classical tradition and newly adopted in the terminology of the natural sciences. In the early 1780s, this combination was expressed by the word “type,” as a term whose peculiar etymology and history of use lent itself especially well to an idea that was vague and precise at the same time: vague in its general reference to a world of ideal forms and metaphysical beauties, precise in its application to the expressive qualities of different building types.’

enforced by later historians including Vidler.<sup>6</sup> Sylvia Lavin and Thomas Rowlands elaborated Vidler's position in their dissertations, which redeem Quatremère's pre-revolutionary theories as modern while accepting that he later became a conservative.<sup>7</sup>

While Quatremère's *system of architecture* and systematic theory of architecture with their grounding in conceptual abstraction and type establish him as a modern theorist, Durand is credited with the first methodical use of typology in architecture. Despite its basis in the formal reduction of precedents, Durand's method seems to eliminate the stylistic and historical burden of form, and to anticipate modernity by delivering a new operative and systematic beginning in which form is functional and defined by a disciplinary interiority of architecture. However, Durand is in his stylistic preferences as much neoclassical as Quatremère, and the fact that he uses 'genre' instead of type discloses a classification in accordance with the traditional conventions of form, style, and purpose. Whereas Quatremère distinguishes between type and model, Durand's typological method suggests synonymy. Yet, as their theoretical intersections with Le Roy reveal, the origins of type in architecture and the relationships between Quatremère and Durand are never simple.

## 2.1 QUATREMÈRE'S TRIPARTITE MODELS OF ORIGIN

Antoine-Chrysostome Quatremère de Quincy (1755–1849) was an archaeologist, art historian, and politician, whose remarkable influence on the arts in France rapidly grew after the Bourbon Restoration of the monarchy in 1815 with his appointment as the permanent secretary of the Académie des Beaux-Arts (1816–39).<sup>8</sup> His interest in architecture arose in the early 1770s while studying the monuments of Paris as an apprentice sculptor in Guillaume Coustou's studio under Pierre Julien.<sup>9</sup> Following an inheritance from his mother, he left for Italy (1776–80 and 1783–84) to study the monuments of Classical Antiquity, visit Rome, and explore archaeological excavation sites

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<sup>6</sup> Quatremère's biographer René Schneider (*L'esthétique classique chez Quatremère de Quincy 1805–1823* and *Quatremère de Quincy et son intervention dans les arts 1788–1850*) portrays him as a reactionary. Politically active as a moderate and liberal centrist, Quatremère served as representative of the Commune de Paris (1789), the Assemblée législative (1791), the Comité d'instruction publique (1791), and the Conseil des Cinq-Cents (1797). However, supporting a constitutional monarchy he increasingly appeared conservative after the political radicalisation during the French Revolution. This resulted in his imprisonment (1794) and his sentencing to death (1795). Quatremère's political orientation seems to have shifted after the Revolution. Alex Potts describes him as an 'anti-democratic' royalist and absolutist; see 'Political Attitudes and the Rise of Historicism in Art Theory', *Art History*, 1.2 (1978), 191–213.

<sup>7</sup> Sylvia Lavin, 'Quatremère de Quincy and the Invention of a Modern Language of Architecture' (1990), PhD dissertation published as *Quatremère de Quincy and the Invention of a Modern Language of Architecture* (1992); and Thomas Rowlands, 'Quatremère de Quincy: The Formative Years 1785–1795' (unpublished PhD dissertation, North Western University, 1989). Rowlands insists that Quatremère was a reactionary only at the end of his life.

<sup>8</sup> Within short succession, Quatremère was appointed Conseil royal d'instruction publique (1815) and Intendant général des arts et monuments publics (1815), elected as Secrétaire perpétuel of the Académie des Beaux-Arts (1816), and became chair of archaeology at the Bibliothèque nationale (1820).

<sup>9</sup> Quatremère studied law before training as a sculptor.

in Sicily, Pompeii, Herculaneum, and Paestum.<sup>10</sup> Despite lacking any formal architectural training, monuments and architecture were to Quatremère of particular interest, as he considered them collective expressions of highly developed cultures.<sup>11</sup> Monuments represented an artistic and interrelated socio-cultural effort, with the prosperous usurping of nature by culture exemplified by ancient Greece, as he states in *The Destination of Works of Art and the Use to which they are Applied* (*Considérations morales sur la destination des ouvrages de l'art*, 1815):

Nature animated Art less, than Art itself appeared to animate every part of nature. Through Art each body possessed a soul, and every soul a body. In villages, in cities, in public places, in houses, on the highways, every thing lived, breathed, and thought through the power of Art; every thing spoke its language, every thing received and gave back its impressions. Every step presented a monument, and every monument afforded a lesson, retraced recollection and awakened sentiment; it was because each had its foundation in the manners and customs of the place, on the history of the country, and on local tradition.<sup>12</sup>

Architecture through the exigencies of utility and necessity have an all-encompassing relevance to society, but more importantly, it is the culturing of nature—not its imitation—that monuments represent, and which credits art and architecture as human achievements. Considering this relationship of culture and the arts to architecture, it is essential to integrate architecture into the system of the arts, and Quatremère's art theory is to determine their interactions and limits. To succeed, he redefines the normative concepts of eighteenth-century art theory: origins and imitation, beauty and perfection, taste, judgement, and genius. With his examination arising from the belief that all arts are social phenomena with a specific history, which embeds them into their societal context and

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<sup>10</sup> Quatremère lived in Rome (where he befriended Antonio Canova), visited Naples (with Jacques-Louis David), and met leading advocates of Neoclassicism, including Anton Raphael Mengs (a close ally of Winckelmann) and Giovanni Battista Piranesi.

<sup>11</sup> Throughout his career involved in the administration of monuments, his only noteworthy engagement with construction was during the conversion of Sainte-Geneviève into the Panthéon as a mausoleum and monument to the new French Republic in the early 1790s. Appointed as Commissaire à l'administration et direction générale des travaux de l'édifice ci-devant Sainte-Geneviève in 1791, Quatremère managed the works. After Soufflot's death, the church was completed by his assistants Maximilien Brébion, François Soufflot le Romain (retained by Quatremère as Inspecteur d'ornement), and the engineer Jean-Baptiste Rondelet (Inspecteur de construction under Quatremère). Quatremère remained Commissaire until March 1794, when his administration was terminated on political grounds and an arrest warrant issued. See Rowlands for a detailed account of the works by Quatremère in 'The Formative Years', pp. 600–06; and compare with Yvonne Luke, 'The Politics of Participation: Quatremère de Quincy and the Theory and Practice of "Concours publiques" in Revolutionary France 1791–1795', *Oxford Art Journal*, 10.1 (1987), 15–43.

<sup>12</sup> Antoine-Chrysostome Quatremère de Quincy, *Considérations morales sur la destination des ouvrages de l'art: ou, De l'influence de leur emploi sur le génie et le goût de ceux qui les produisent ou qui les jugent, et sur le sentiment de ceux qui en jouissent et en reçoivent les impressions* (Paris: Impr. de Crapelet, 1815). English translation: *The Destination of Works of Art and the Use to Which they are Applied: Considered with Regard to Their Influence on the Genius and Taste of Artists, and the Sentiment of Amateurs*, trans. by Henry Thomson (London: John Murray, 1821), pp. 79–80.

development, he understands the arts as achievements of human reason. Adopting a linguistic and historiographical line of enquiry, he utilises methodologies from the emergent disciplines of archaeology etymology, and ethnography. Integrating physical, socio-cultural, and political influences in a coherent sociological and anthropological argument, Quatremère seeks to overcome the traditional definitions of *origins* and *imitation*, limited by the conventional boundaries of the arts.

Returning from his Grand Tour of Italy, Quatremère considers himself an *amateur des art* and submits the *Mémoire sur cette question: Quel fut l'Etat de l'architecture chez les Égyptiens, et qu'est-ce que les Grecs en ont emprunté?* (Mémoire on the Question: What was the state of Egyptian architecture and what do the Greeks seem to have borrowed from it?), known as the *Mémoire sur l'architecture égyptienne*, for the prestigious Prix Caylus in 1785. He wins uncontested.<sup>13</sup> Founded in 1754 by Caylus in support of the studies of antiquities and annually organised by the Académie des inscriptions et belles-lettres, the jury in 1785 included Le Roy, who is credited with formulating the competition agenda that expressed an eighteenth-century fascination with history and a search for the origins of Western architecture.<sup>14</sup> Acknowledging new factual evidence confirming early Egyptian settlements dating back to the nineteenth century BC on mainland Greece, the influence of Egyptian architecture on Greece was indisputable, thus, the competition question demanded a clarification of this influence but also implied its relativity by suggesting the superiority of the Greeks.<sup>15</sup>

Shortly before Quatremère, two leading French 'art historians' of antiquities, Caylus in *Recueil d'antiquités* and Le Roy in *The Ruins* and *Observations* employed archaeological methodologies in their studies. Examining the relationships between ancient arts, Caylus's *Recueil d'antiquités* develops a historical periodisation by comparing the artistic styles of artifacts, but unlike Winckelmann, who based his periodisation on stylistic evolution, Caylus main interest is chronology. Instrumentalising archaeological evidence, both Caylus and Le Roy accept an Egyptian influence on Greek architecture, yet knowledge of Egyptian artifacts remained largely speculatively until the dissemination of scientific descriptions gathered by Napoleon's expedition from 1798 to 1801 in *Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française* (1809–29). A mounting interest in Egyptology and etymology eventually culminated in Jean-François Champollion's successful deciphering of hieroglyphic writing on the Rosetta

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<sup>13</sup> Only two papers were submitted, one by Quatremère and the other by the Italian architect Giuseppe Del Rosso, which was disqualified for late submission and being partially written in Italian.

<sup>14</sup> The background to the 1785 Caylus Prix competition and Quatremère's entry is detailed by Lavin in *Quatremère*, pp. 2–61.

<sup>15</sup> Archaeological knowledge was, for example, disseminated by Dumont's engravings in the *Suite de plans de trois temples antiques à Paestum* (1764) based on the unearthing of Paestum by Soufflot, the discovery of Palmyra and Baalbek by James Dawkins and Robert Wood in *The Ruins of Palmyra, otherwise Tadmor, in the Desert* (1753) and *The Ruins of Balbec, otherwise Heliopolis in Coelosyria* (1757), as well as *Athens and Other Monuments of Greece* (1762) by Stuart and Revett.

Stone in 1822, which underscored the instrumentality of scientific comparison.<sup>16</sup> Research into early forms of writing by Quatremère's cousin the orientalist Étienne Marc Quatremère was recognised for contributing to Champollion's feat and might explain Quatremère's evident interest in archaeology and hieroglyphics, as well as his knowledge of linguistics.<sup>17</sup>

Principally instigated by Caylus in the *Recueil d'antiquités*, an eighteenth-century commonplace was that Greek architecture developed from Egyptian precedents, but was only perfected by an imitation of nature in classical Greece.<sup>18</sup> A view emphatically supported by Le Roy in *The Ruins*, who claimed that despite inheriting knowledge of architecture from Egypt, only the Greeks could be credited with inventing the *art of building* and developing a systematic approach to the arts.<sup>19</sup> A similar thesis was promulgated by Marc-Antoine Laugier (1713–1769) in *An Essay on Architecture* (*Essai sur l'architecture*, 1753) and *Observations sur l'architecture* (1765), as well as J. F. Blondel's *Cours d'architecture* (1771–77). Without doubt aware of Caylus, Le Roy, and Laugier's arguments, Quatremère restates them in the conclusions of the *Mémoire*.<sup>20</sup> Summarising his predecessors, Quatremère agrees:

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<sup>16</sup> By comparing its hieroglyphic, demotic Egyptian, and Greek inscriptions, Champollion was able to reconstruct a hieroglyphic alphabet and grammar, which he outlined in his *Lettre à M. Dacier* in 1822 and the *Précis du système hiéroglyphique des anciens Égyptiens* in 1824. Both works are listed by Fournel, *Bibliothèque de M. Quatremère de Quincy*, p. 150.

<sup>17</sup> Quatremère's extensive library, according to the inventory by Fournel in 1850, included many standard works on history, archaeology and hieroglyphs of antiquity: Stuart and Revett's *Antiquities of Athens* (1762, 1787–94, 1816); Wood and Dawkins's *Les Ruines de Balbec* (1757) and *Les Ruines de Palmyre* (1753); Piranesi's *Antiquités de la Grande-Grèce* (1804) and *De Romanorum magnificentia et architectura* (1761); Degodetz's *Les édifices antiques de Rome mesurés et dessinés très-exacement sur les lieux* (1779); Pockocke's *A Description of the East and some other Countries* (1743–45); Winckelmann's *Gesammelte Werke* (1808–17) and *Histoire de L'Art chez les anciens* (1790–1803); Champollion's *Lettre à M. Dacier* (1822); de Pauw's *Recherches philosophiques sur les Grecs* (1788) and *Recherches philosophiques sur les Egyptiens et les Chinois* (1773); Etienne Quatremère's *Noticer d'un manuscrit arabe de la bibliothèque du roi* (1837) and *Mémoires géographiques et historiques sur l'Égypte et sur quelques contrées voisines*; and Le Mascrier's *Description de l'Égypte*, Napoléon's *Description de l'Égypte*, etc.

<sup>18</sup> 'The Greeks distanced themselves from the taste for the grand and prodigious, whose example had been provided by the Egyptians. They reduced the masses to add elegance and refinement to the detail. They added to these beautiful features of the art the grace and knowledgeable freedom that can be achieved only at a level of superiority rarely granted by nature, but which was fairly commonly to be found in Greece over the course of some centuries. Finally, the Greek brought to perfection those arts whose aim is to please though the imitation of nature. Their works bring focus to so many aspects in which they excelled that the study of them goes hand in hand, with the study of nature.' Anne-Claude-Philippe, Comte de Caylus, *Recueil d'antiquités égyptiennes, étrusques, grecques et romaines* (1752–67), I, p. 119, n. 192; as quoted by Middleton in 'Introduction' to Le Roy's *The Ruins*, p. 77.

<sup>19</sup> '[T]he Greeks learned from the Egyptians the greater part of the discoveries in architecture to which the Greeks themselves later laid claim. But if we consider the numerous stages through which the Greeks passed, from simple hut (which necessity had forced them to build before they knew the Egyptians) to the most magnificent temples, and if we observe that they devised a regular system based on the orders, where the Egyptians seem to have followed no system at all, then we are forced to acknowledge the Greeks as the people who, aside from a few ideas taken from the Egyptians, invented the art of building.' Le Roy, *The Ruins*, pp. 117–18.

<sup>20</sup> Caylus's *Recueil d'antiquités* (1752–67), Le Roy's *The Ruins* (1770 edition), and Laugier's *Observations sur l'architecture* were listed in the sales catalogue of Quatremère's library; see Fournel, *Bibliothèque de M. Quatremère de Quincy*, p. 55, 61, and 147.

This nation [of the Greeks] knew how to hide and cover up its larcenies from Egypt. Yet, from every point of view, Egyptian architecture cannot be considered anything but the rough draft of Greek architecture. The Greeks, through the superiority they attained in the other arts of imitation, developed a reasoned system of proportions with which they fixed the rules of this art. The justness of their taste, which knew to seize that middle point between all opposing qualities, gave us true models of beauty and left us despairing even to equal them. *If therefore the Egyptians invented architecture, the Greeks invented “la belle architecture.”* [...] The Egyptians conceived the first ideas, but they did not submit them to reflection and criticism nor did they reduce them to principles.<sup>21</sup>

With the influence of Egyptian architecture factually undeniable, an important mission of eighteenth-century Neoclassicism was to assert the superiority of Western culture. The archaeological knowledge that Greece predated the previously admired Roman period, in turn resulted in the ‘scientifically rigorous’ conclusion that Western arts originated from Greek antiquity.<sup>22</sup> However, this did not entirely solve the issue of chronology and Le Roy went further by questioning the significance of origins altogether. He posits, corresponding to Winckelmann’s concept of a ‘universal primitive’, that a ‘primitive original idea’ is common to early societies and represented in the idea of the hut. This explained the independence of the model of the hut within different cultures and their dissimilar developments, as in the case of Egypt and Greece. Le Roy’s thesis resolves the conflict arising from the orthodox view that the *art of architecture* is a Greek accomplishment, although predated by Egyptian architecture, as he considers historical time immaterial to understand artistic achievement and progress.<sup>23</sup> History, in Le Roy’s terms, is not a universal order but consists of differentiated and disconnected sequences of progression. And architecture is an example of the incremental perfection of an aesthetic idea, its gradual development in different societal and geographic contexts, only fully comprehensible from a simultaneous historical and theoretical-architectural perspective.

Quatremère’s *Mémoire* thus adopts Le Roy’s thesis that a common model of the hut appeared within parallel developments in Egypt and Greece. However, elaborating Le Roy’s line of progression he adds that Egyptian architecture had a ‘double origin’ in the

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<sup>21</sup> Quatremère de Quincy, *Prix Caylus*, MS, pp. 64r–64v, trans. by Lavin in *Quatremère*, p. 30.

<sup>22</sup> The superiority of Greece was opposed by Piranesi in *Della magnificenza de architettura de’ Romani* of 1761, and the *Recueil de pierres gravées antiques* (1732–37) by Pierre-Jean Mariette.

<sup>23</sup> Winckelmann in comparison believed in a universal ‘primitive’ root to the development of arts and wrote in *Monumenti antichi inediti* (1767), p. xii: ‘The origins of the arts of design were more or less the same in people separated one from the other. This is so not because these people had communicated their means of working or the ends they had in working, but because nature always teaches the simplest and easiest things first.’ Trans. by Lavin, in *Quatremère*, p. 37.

wooden hut and cave.<sup>24</sup> This explains the Egyptian qualities of uniformity and simplicity as deriving from the cave, while the Greeks when inheriting the Egyptian tradition of the hut, were able to rethink its origins in abstract natural and social terms, which established a clearer separation and progression—from the cave to the hut. As the Greek hut was not just a copy of nature but produced a new artifact, it represented a higher artistic ambition and value, which made the Greeks superior to Egyptian architecture that merely mimicked nature.

Although the *Mémoire* is speculative and largely owes to arguments by others, Lavin like Vidler, presents it as Quatremère's seminal text, however for slightly different reasons. To her the *Mémoire* fully sketches out novel ideas on architectural theory and type as entirely speculative and deduced from a correspondence between the origins of architecture. Yet, she admits that Quatremère's conclusions are 'unexceptional' and reflect current thinking promulgated by the likes of Caylus and Le Roy.<sup>25</sup> Equally, Rowlands describes the *Mémoire* as 'truly a humble effort, unfocused and woefully incomplete', alleging that Quatremère himself was unsatisfied with its conclusion.<sup>26</sup> In fact, Quatremère's architectural theory only became original in the greatly edited version of the *Mémoire*, which almost doubled in length was published some eighteen years later in 1803 as *De l'architecture égyptienne considérée dans son origine, ses principes et son goût, et comparée sous les mêmes rapports à l'architecture grecque* (On Egyptian Architecture, considered with Respect to its Origin, its Principles and its Taste and compared in the same Terms with Greek Architecture). Elaborating the notions of *origins*, *principles*, and *taste*, *De l'architecture égyptienne* for the first time proposes a break with Le Roy's monogenetic principle of origins. The maturing of Quatremère's architectural theory and a considerable reversal of the *Mémoire*'s conclusions in *De l'architecture égyptienne* can be explained by his appointment as the editor of the *Encyclopédie méthodique: Architecture* (1788–1825) in 1787, which forced him to conceive a general theory of architecture in respect to the system of the arts. Significantly, Quatremère only in *De l'architecture égyptienne* expresses the idea that the origins of architecture are related to the formation of language. He explains the common but multiple origins of architecture in different contexts by employing a linguistic analogy, declaring that architecture's development equally depend on social and cultural intellection. In addition, he eliminates the argument of double origins in the *Mémoire*, only attributing the model of the cave to Egyptian architecture. To explain the perfection of Greek architecture into an art, he argues that they replaced nature with culture and developed a concept of *taste*, which distinguished them from the Egyptians

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<sup>24</sup> 'I do not think that one must exclusively and uniquely seek the principles of Egyptian architecture originated primarily in the subterranean caverns dug by the first inhabitants of Egypt [...] I think that the architecture of some peoples may have had a double origin, and it seems to me that this was the case in Egypt. I do not reject the idea that the hut had an origin in Egypt.' Quatremère, *Prix Caylus*, MS, p. 5r, trans. by Lavin, in *Quatremère*, p. 56.

<sup>25</sup> The only other submission to the Prix Caylus by Del Rosso came to similar conclusions as those by Quatremère; compare Lavin, *Quatremère*, pp. 32–39.

<sup>26</sup> Rowlands, 'The Formative Years', pp. 19 and 22.

and justified their claim to the hut as an aesthetic and cultural category. While the Greeks created an ‘artificial language’ and allegorical and emblematic writing through rational and cultural inventions, the Egyptians maintained a ‘natural language’ and hieroglyphic decoration onomatopoeic of natural forms.<sup>27</sup>

*De l'architecture égyptienne* goes beyond Le Roy's parallel progression of a single origin and constructs a systematic historical explanation, evidently influenced by recent ethnographic studies.<sup>28</sup> Yves Goguet in his studies of Egyptian and Greek architecture in *De l'origine des loix, des arts, et des sciences, et de leurs progrès chez les anciens peuples* (1758) had claimed a qualitative difference between ‘building’ and the ‘art of architecture’. Based on it he proposed a judgement of architectural origins that marginalised aesthetic criteria and considered building as a form of social production. Cornelius de Pauw in *Recherches philosophiques sur les Égyptiens et les Chinois* (1773) insisted that nations with common origins had to be assessed in relation to their independent artistic achievements. And Henry Home, Lord Kames in *Sketches of History of Man* (1774) distinguished between three primitive conditions of man according to a progression from hunter, to shepherd, and farmer, with the respective habitation models of cave, tent, and hut. Corresponding to Home, Quatremère in the *Mémoire* refers to ‘three states of natural life, the origin of every type of construction associated with all people as well as the differences between them’, but does so in the general sense of *first origin, form, or model* from which a progressive and natural development emerges.<sup>29</sup> In contrast, *De l'architecture égyptienne* presents Home's progressive origins as three distinctly separated origins, explaining the simultaneous beginnings of all architecture: Egyptian architecture with its simplicity, uniformity, monotony, and solidity revealed its roots in the cave, Chinese architecture was related to the nomadic tent, while the primitive hut gave birth to Greek architecture.<sup>30</sup> Owing to De Pauw's reasoning of independent, tripartite origins in *Recherches philosophiques*, Quatremère significantly alters Home's linear progression of origins by eradicating *any* developmental connections between the three origins, stating that their distinctions derived from different social forms of primitive societies. This redefines origins in memetic terms.<sup>31</sup> The simultaneity of multiple origins (cave, tent, and hut), which replaced Le Roy's parallel yet independent progression of a singular origin

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<sup>27</sup> Quatremère states: ‘the Greeks formed architectural writing, and used [these characters] to express a large number of ideas and diverse sensations’ Quatremère, ‘Copy’, in *Encyclopédie méthodique: Architecture*, 2:72, trans. by Lavin in *Quatremère*, p. 146 [her add.].

<sup>28</sup> For the influence of ethnography on Quatremère's theory, see Lavin, ‘The History of Ethnography’, in *Quatremère*, pp. 62–74.

<sup>29</sup> Quatremère, *Prix Caylus*, MS, p. 2v, trans. by Lavin in *Quatremère*, p. 21. Lavin misleadingly translates ‘l'origine’ as ‘type’, as the original text states: ‘On peut, il me semble, rapporter à ces trois états de la vie naturelle l'origine de toutes les constructions et des différences qu'on y remarque chez tous les Peuples.’

<sup>30</sup> The chronological beginning of the world was determined by James Ussher, following biblical accounts of creation, to be 4004 BC, believed in the eighteenth century to roughly coincide with the emergence of early Egyptian and Chinese society, thus making them the first examples of architecture.

<sup>31</sup> Memetic is a term originating from Richard Dawkins' *The Selfish Gene* (1976), which uses the concept of meme to describe a speculative unit of human cultural transmission analogous to the gene.

(from the cave to the tent to the hut), supports Quatremère's argument that all societies develop specific forms of communication through their use of language and the arts, based on which their cultural achievements could be judged.<sup>32</sup> While Greek architecture is still considered to 'borrow' from Egypt in the *Mémoire*, Quatremère only refutes their developmental relation in *De l'architecture égyptienne*:

One should consider these architectures as lacking any generic connection, as two species distinct in their essential structure. The anteriority of one or the other, particularly because this is so difficult to determine, is an argument of little value in this matter. The date of their birth is, in effect, not important if each was born of a different germ.<sup>33</sup>

Quatremère then, also for the first time, proposes architectural origins and development as analogous to language formation, as a common human and social effort requiring a communicative language and universal grammar: 'The invention of architecture must be seen as parallel to the invention of language. That is to say that neither one nor the other invention can be attributed to any man because both are attributes of men.'<sup>34</sup> Architecture's universal grammar, consisting of a post-and-lintel system, like that of language has different roots and develops separately, with Quatremère explaining that to 'infer from general similarities shared by two architectures that one is the product of the other is as indefensible an abuse as it would be to define one language as the derivative of another because they share features of universal grammar'.<sup>35</sup>

Vidler's charge that Quatremère under the rubric of 'Type' in 1825 'was evidently simply restating a position already firmly developed by the time of the Revolution', and that the 'historical-theoretical sketch of the essay on Egyptian architecture, which contained almost all the ideas of Quatremère's mature theory, was extended and systematically re-elaborated in a series of articles written between 1787 and 1788 for the first volume of the

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<sup>32</sup> Lavin, *Quatremère*, p. 41.

<sup>33</sup> Quatremère de Quincy, *De l'architecture égyptienne considérée dans son origine, ses principes et son goût, et comparée sous les mêmes rapports à l'architecture grecque* (Paris: Barrois l'aîné, 1803), p. 19, trans. by Lavin, in *Quatremère*, p. 57.

<sup>34</sup> Quatremère, *De l'architecture égyptienne*, p. 12, trans. by Lavin, in *Quatremère*, p. 59.

<sup>35</sup> Quatremère, *De l'architecture égyptienne*, p. 226–27, trans. by Lavin, in *Quatremère*, p. 58. Quatremère elaborates the question if a universal grammar allows independent development and origins earlier in *De l'architecture égyptienne*: 'In studying this matter one would be gravely mistaken to confuse the principles of universal grammar that belong to language with the rules of syntax proper to individual languages. This error might lead one to establish a filiation between two languages based uniquely on the fact that they both have declensions and conjugations. No one, as far as I know, has fallen into this trap in the context of language. One can say, on the contrary, that almost no one has escaped this trap with regard to architecture. The general principles of the art of building common to all architecture have almost always been confused with the particular principles and original conditions of individual architectures. The result has been that filiations and genealogies have been imagined between the most foreign of species.' Quatremère, *De l'architecture égyptienne*, pp. 12–13, trans. by Lavin, in *Quatremère*, p. 57–58.

*Encyclopédie methodique: Architecture*, is therefore untenable.<sup>36</sup> It is further important to note that the inversion of the prime arguments of the *Mémoire* in *De l'architecture égyptienne* is unexplained by the problem of origins but derives from the need to systematise and include architecture in the discursive debates on the arts and their knowledge, in order to contextualise the *Dictionnaire d'architecture*. This is discernible in changes to references and methodology in *De l'architecture égyptienne* (1803), with added chapters and substantial new arguments introduced to deal with the definition of origins in relation to imitation, an art historical concept.<sup>37</sup> It is apparent, that the revised essay was unconcerned with contributing to a factual knowledge of Egyptian architecture, of which Quatremère had no personal experience, as the imminent publication of *Description de l'Égypte* (1809–29) would have made these efforts obsolete. Instead, its aim was to formulate a new architectural theory. *De l'architecture égyptienne* radically differs from the *Mémoire* by introducing an ahistorical perspective and rejecting the determinism of history as a chronological and linear framework. Quatremère accordingly embraces a relativising historiography and the principles of an ahistorical and comparative study of grammar, which emerged with eighteenth-century language theory. This was partially anticipated by Le Roy's redefinition of architectural historiography and questioning of chronology, but differed from it through an emphasis on etymology. The revisions of *De l'architecture égyptienne* were consistent with a new etymological thinking and an architectural theory emerging in Quatremère's *Dictionnaire d'architecture*. In fact the dictionary entry 'Architecture' (1788, I) and not the *Mémoire* or *De l'architecture égyptienne* posits a separation of three original types and their simultaneous development:

It was, however, at this moment of its birth that *architecture* in all regions and amongst different nations, began to take on the varied forms which consequently impressed on it such remarkable differences. [...] We can nevertheless refer the general differences that one apprehends in the *architecture* of different peoples of the earth, to three very distinct states that nature seems to have given to man [...] Such are the three states of natural life to which the origin of all constructions and the differences of taste which can be discerned amongst the different peoples of the world can be related. It is impossible that these three ways of life have not created in *architecture* some perceptible differences and the truly remarkable variety of styles.<sup>38</sup>

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<sup>36</sup> See respectively Anthony Vidler, 'The Idea of Type', p. 104; and 'From the Hut to the Temple', pp. 147–64 (p. 150).

<sup>37</sup> For example, a new chapter on *De la diversité des origines de l'Architecture* was added.

<sup>38</sup> Quatremère, 'Architecture', in *Encyclopédie méthodique: Architecture*, trans. by Hinchcliffe in 'Extracts from the Encyclopédie', pp. 27–28. The three basic types are later further discussed under the rubric of 'Character' (1788, I). The argument of the first volume of the dictionary was adopted in *De l'architecture égyptienne* by making reference to 'three principal 'Type's [...] the tent, underground, or carpentry' or 'the three principal 'Type's from which all the different architectures known to us emanated', p. 239, trans. by Lavin in *Quatremère*, pp. 87–88.

In 'Architecture', Quatremère reinforces once again the authority of the Greeks, however, this time not by relativising chronology but by connecting the state of society and its culture to the kind of architecture it can produce. In Greece, the skill of carpentry was emblematic of the way man succeeded in culturing and reasoning nature and reflected directly on the intellectual and social disposition.

Carpentry, as we shall make clear, has incontestably served as the model to Greek architecture; and one must admit that of the three models that nature can present to the art, carpentry is without doubt the most perfect and finest of all. [...] One could therefore assert, that without carpentry there would never have been in *architecture* a reasoned art. [...] It was without doubt, only up to the Greeks to discern the degree of liberty which was agreeable to *architecture*, and gave to it this happy constitution, equally far from the licence of Asia and the despotism of Egypt. But this judicious temperament must be the fruit of the fortunate coming together of the best moral and physical causes; and the perfection of this art must depend on the perfection even of the people who invented it.<sup>39</sup>

Although *De l'architecture égyptienne* develops arguments of the *Mémoire*, it redefines the architecture by framing the conditions of invention not as a historical inevitability of progress but a social effort and achievement. This proclaims a social thesis very different from the predominantly formal argument of the *Mémoire*. *De l'architecture égyptienne* postulates that form is essentially metaphysical and unspecific but possesses cultural and social values, thus architecture is a social language.<sup>40</sup>

## 2.2 DURAND'S METHOD OF DISPOSITION

Contrary to Quatremère's emphasis of architecture and invention as expressions of socio-cultural form, Jean-Nicolas-Louis Durand (1760–1834) understood invention in terms of the formal arrangement of parts: as disposition. Durand was trained as a draughtsman by Pierre Panseron before working from 1777 for Boullée, who supported his admission to the Académie d'architecture where Le Roy and Jean-Rodolphe Perronet became his teachers.<sup>41</sup> Despite numerous successes in competition in 1794, none of these projects were realised and, like Quatremère, Durand would remain an academic.<sup>42</sup>

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<sup>39</sup> Quatremère, 'Architecture', in Hinchcliffe 'Extracts from the Encyclopédie', pp. 28–32.

<sup>40</sup> 'The building of society, in Quatremère's view, determined the building of architecture' leading him 'to conceive of architecture as a social language, a notion that ultimately transformed the academic tradition into the foundations of a modern theory of architecture'. Lavin, *Quatremère*, pp. 41 and 61.

<sup>41</sup> At the Académie, he submitted for the Prix de Rome in 1779 and 1780 and was twice awarded the second price.

<sup>42</sup> In 1794 he entered a number of competitions for public monuments with Louis-Michel Thibault, whom he had met in Boullée's office, winning no less than twelve prizes, with seven awarded the first prize or best project, including an entry for a Temple à l'Égalité (conflicting numbers of competitions and awarded prizes are given by different biographers). His few build projects include an apartment block (1800), a house at Chessy (1802), and two houses in Thiais (1820 and 1825).

But having gained reputation through his winning competitions, Durand was hired in 1795 by Gaspard Monge, Comte de Péluse, the inventor of descriptive geometry, as a drafting instructor in the department of applied geometry at the École Polytechnique, an engineering school founded the previous year.<sup>43</sup> Durand was promoted in 1796 to Substitut de l'administrateur de la police to Pierre-Louis Baltard and in the following year became a professor of architecture, a position he held until shortly before his death in 1834.<sup>44</sup>

At the École Polytechnique, Durand taught an introductory architectural course to students of engineering, which only represented a small portion of their studies.<sup>45</sup> The intent of Durand's teaching signalled however an important shift in architectural education at the turn of the nineteenth century. His course did not promote architecture through an aesthetic doctrine familiar from the arts but was adapted to the scientific structure and curriculum of the École Polytechnique that focussed on utility and economy. Durand stripped himself of Boullée's poetic functionalism and, aligned with pragmatic rationalism, considered form as pure function. The functionalist and formalist course disregarded architecture as a negotiation between natural and socio-cultural development propounded by Boullée.

The instructor will demonstrate that architecture is not an art of imitation; will show, on the contrary, that it has not and never could have had any purpose other than public and private utility, and the happiness and the preservation of society in all the different branches that composes it. [...] The means of this art (which are at the same time its precepts) are convenience, economy, solidity, salubriousness, comfort, simplicity, and lastly symmetry, from which alone derive the ornaments proper to the products of this art. [...] The instructor will indicate, citizens, the road that leads to true glory—that of being useful to one's country.<sup>46</sup>

Complementing his lectures, Durand published the *Recueil et parallèle des édifices de tout genres, anciens et modernes: remarquables par leur beauté, par leur grandeur, ou par leur singularité, et dessinés sur une même échelle* (Collection and Parallel of Buildings of every Genre, Ancient and Modern: Remarkable for their Beauty, their Grandeur, or their

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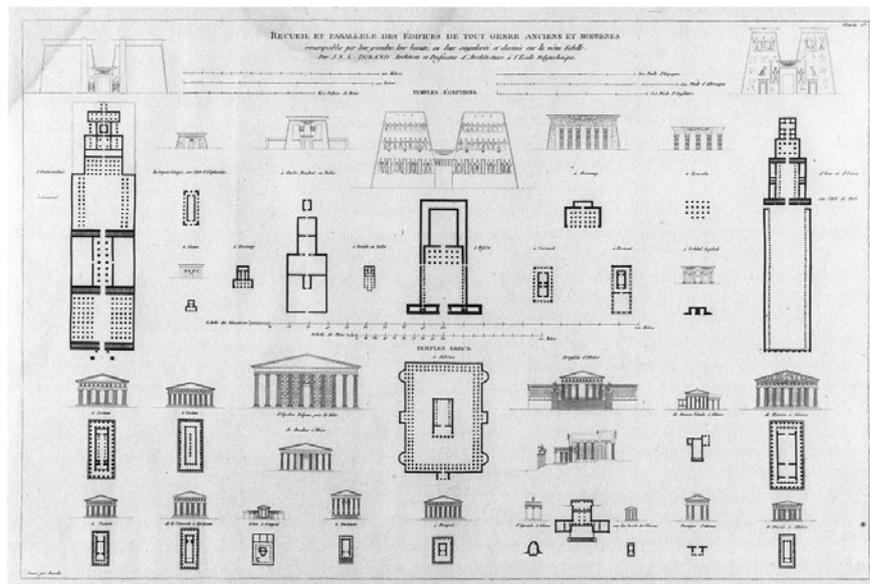
<sup>43</sup> The École Polytechnique was originally established as the École Centrale des Travaux Publics.

<sup>44</sup> Biographies on Durand are by Werner Szambien, *Jean-Nicolas-Louis Durand, 1760–1834: De l'imitation à la norme* (1984); and Sergio Villari, *J.N.L Durand (1760–1834): Art and Science of Architecture* (1990).

<sup>45</sup> Durand's student Antoine Rondelet claimed that his course only represented about 8% of the two-year engineering programme. Teaching predominantly engineers, only few of Durand's students became known architects, including Achille Leclère, François Mazois, Charles Rohault de Fleury, Léonce Reynaud, and Leo von Klenze; see Sergio Villari, *J.N.L Durand (1760–1834): Art and Science of Architecture*, trans. by Eli Gottlieb (New York: Rizzoli, 1990), p. 28.

<sup>46</sup> A description of Durand's course given by Simon-François Gayvernon in *Journal de l'École Polytechnique*, cahier 6 (Thermidor an VII, 1795), p. 256, as quoted by Villari, *J.N.L Durand*, p. 35.

Singularity, all drawn to the same scale, 1799–1801), the ‘Grand Durand’, which in its reissue included the *Essai sur l'histoire générale de l'architecture* by Jacques-Guillaume Legrand, an architectural historian and friend of Quatremère.<sup>47</sup> The *Recueil* was intended as a sourcebook and survey of normative plans, revealing in its conception and graphical understanding the influence of Le Roy’s comparative plates and Monge’s descriptive geometry by emphasising the two-dimensional plane over the three-dimensional body. Even though descriptive geometry was extraneous to Durand’s methodology, he embraced geometry as an abstract and technical means of description without recourse to classical representation. To enforce the technical nature of disposition, Durand prohibited the use of perspective rendering and monochrome ink-wash in his classes, techniques fundamental to the teaching of composition at the École des Beaux-Arts. Ordered according to functional and morphological similarities and indiscriminate, if not eclectic, of architectural styles and periods, the taxonomies of the *Recueil* were more explicit and singular than Le Roy’s typological plates and made comparative diagrams operative to design.<sup>48</sup>



**Fig. 6 Temples égyptiens, temples grecs**

From Jean-Nicolas-Louis Durand, *Recueil et parallèle des édifices de tout genre, anciens et modernes: Remarquables par leur beauté, par leur grandeur, ou par leur singularité, et dessinés sur une même échelle* (Paris: Imp. Gillé fils, 1800)

The plates of the *Recueil* are functionalist in intent and scope. They are analogous to the classification system in anatomy by Georges Cuvier (1769–1832), which advanced Linnaean taxonomy and focussed less on formal grouping than the analysis of

<sup>47</sup> In 1799, Legrand provided Durand with a historical and theoretical text based on a planned work the *Histoire générale de l'architecture*. The *Essai* was included with some first editions and separately published in 1809. For Quatremère’s friendship with Legrand, see Rowlands, ‘The Formative Years’, pp. 43–46.

<sup>48</sup> Antonio Hernandez argues that Durand was not eclectic, whereas others including Henry-Russel Hitchcock and Ignasi de Sola-Morales disagree. Compare Hernandez, ‘J.N.L. Durand's Architectural Theory: A Study in the History of Rational Building Design’, *Perspecta*, 12 (1969), 153–60; Hitchcock’s *Architecture: Nineteenth and Twentieth Centuries* (1958); and Sola-Morales, ‘The Origins of Modern Eclecticism: The Theories of Architecture in Early Nineteenth Century France’, *Perspecta*, 23 (1987), 120–33.

comparative development.<sup>49</sup> This allegiance is declared in Legrand's *Essai*, announcing that by understanding the structural and formal principles of architecture, and by organising the plans of buildings according to their 'species' or genres, a 'natural history of architecture might be created'.<sup>50</sup> Cuvier's taxonomies revealed historical development by comparing formal characteristics and functional structures, which made a correlation of parts and their scientific description possible. Comparison was employed to reconstruct abrupt changes or catastrophic events in natural history and their effect on morphology. The study of natural history however would soon develop into a natural science of biology and anatomy, signifying a further instrumentalisation of history. Likewise, the ambition of the *Recueil* is to transform architectural history into an instrument of scientific analysis. Thus it considers: 'the form of the elements, the quantity of these elements, the manner in which they are distributed in space in relation to each other, and the relative magnitude of each element'.<sup>51</sup> Corresponding to scientific classification, the *Recueil* compares building elements and building genres in their simplified plan, section, and elevation, all drawn to the same scale. Architecture is presented as reducible to a comparison of functional, formal, and structural likeness. In this endeavour of unprecedented extent, drawing becomes the specific disciplinary means to convey the invisible deep structure of architecture, which Durand understands as only an organisational-structural diagram. Defined technical and autonomous from classical imitative representation, diagrammatic drawing is the mechanism to graphically comprehend, compare, and develop morphological differences and typological changes. With history framed through the rational and positivist sciences, the previously defining effects of style and character on buildings become immaterial, as one can only judge them as additional cultural layers to form. Instead, structural, formal, and morphological relations and their increasing complexity are the material verification of a historical progression that is utilisable by disposition.

The formal reduction and genetic logic of the *Recueil* is concluded as a procedural design method in Durand's next textbook, the enormously popular *Précis of the Lectures on Architecture Given at the École Polytechnique* (*Précis des leçons d'architecture données à l'École polytechnique*, 1802–05).<sup>52</sup> The *Précis* devised an effective method of design,

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<sup>49</sup> Cuvier, the author of *Tableau élémentaire de l'histoire naturelle des animaux* (1797–98) and *Leçons d'anatomie comparée* (1800–05), developed a first comparative anatomy and classification system for the animal kingdom. His taxonomical system was developed from Carl Linnaeus' *Systema Naturae* (1735)—which outlined a scientific classification system by differentiating between Kingdoms divided into Classes and subdivided into Orders, which are in turn divided into Genera with their Species and Varieties—and Georges-Louis Leclerc, Comte de Buffon's *Histoire naturelle, générale et particulière* (1749–88).

<sup>50</sup> Jacques-Guillaume Legrand, 'Essai sur l'histoire générale de l'architecture', in Jean-Nicolas-Louis Durand, *Recueil et parallèle des édifices de tout genres, anciens et modernes*, new edn. (Paris, 1809), pp. 21–47, as cited by Vidler in 'The Idea of Type', p. 106–07.

<sup>51</sup> Foucault summarising the four variables of eighteenth-century natural history in *The Order of Things*, p. 134.

<sup>52</sup> The book was widely read by students of architecture in France at the École Polytechnique and École Beaux-Arts throughout the nineteenth century and retained its influence into the twentieth century; see

simple to instruct and follow. Known as the 'Petit Durand', the *Précis* as an extension to the *Recueil* is a didactic course summarising Durand's lectures on architecture. First published in two volumes, the *Précis* was republished with revisions as the *Nouveau précis* (1813) and further enlarged by the *Partie graphique des cours d'architecture faits à l'École royale polytechnique* (1821). With its ambition of supplying a design method reasoned from within the discipline and liberated from the Vitruvian tradition, the *Précis* owed greatly to the eighteenth-century normative French discourse. As anticipated by Perrault, d'Aviler, and Le Roy, Durand's conclusions to a rationalisation of architectural knowledge and design process proposes a seemingly generic method and suggests that architecture obtains formal and historical autonomy by disregarding nature and operating 'scientifically'. This radical proposition dismisses style and history, with classical orders and proportions apparently only recognised as part of the historicity of architectural knowledge. Replacing ancient authority with method, Durand advances the extreme proposition that architecture is not just utilitarian but entirely defined by utility, thus considers: function, fitness, and economy.

With the arrival of modern building types, new commissioning clients, and rising importance of engineering, the rationalisation of construction and decoration in architecture obtained a different meaning. Buildings with new civic programmes and private houses offered, due to their marginal importance to the classical canon, less resistance to Durand's attempt to define formal and typological norms. Typological plan studies of private houses were already known from pattern books by Jacques Androuet du Cerceau's *Livre d'architecture* (1559) and Louis Ambrose Dubut's *Architecture civile* (1803).<sup>53</sup> Du Cerceau and Dubut reduced composition to dispositional arrangement and treated buildings as independent from styles, which suggested that decoration could be applied as an afterthought in the modern sense of personalising a building. This avoided the traditional view of decoration as integral to an *art of architecture* and advanced a generic *art of building*. The typological ordering of the pattern books, with their taxonomical combinations and variations of forms, was comparable to Durand's *Précis*

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Antoine Picon, 'From "Poetry of Art" to Method: The Theory of Jean-Nicolas-Louis Durand', in Durand, *Précis*, pp. 1–68 (pp. 1–3).

<sup>53</sup> Androuet du Cerceau's *Livre d'architecture* was one of the earliest 'pattern book' for the design of private houses. It contained the plans of fifty houses ordered according to size, with details of ornamentation and construction omitted to allow the public to change the patterns according to constraints of site, cost, and taste. Boullée too, interested in the problems of genre and character, studied different types of private residences in his fragmentary collection of designs in the years 1792 and 1796. It was, however, Ledoux's student Dubut in *Architecture civile* (1803), who concluded the first purely formal and distributional logic afforded by type, when he published his plan types for private houses and their possible decorations that could be chosen and combined according to taste and budget, without the assistance of an architect. Compare with Picon, 'From "Poetry of Art" to Method', in Durand, *Précis*, pp. 1–68 (p 21). Pérez-Gómez claims that Dubut adopted Durand's principles of the *Précis*; see *Architecture and Crisis*, p. 312. Dubut is also discussed by Villari in *JNL Durand*, p.21, and Vidler 'The Idea of Type', p. 110.

and his definition of disposition as the correlation of parts.<sup>54</sup> The *Précis* portrayed architecture first as a science necessitating knowledge and only then as an art requiring talent. However, talent to Durand was not a gift bestowed on the genius but a skill of methodical reasoning acquired through repeated practice.<sup>55</sup> For that reason, the *Précis* was conceived as a brief introduction to the rational methods available to architecture and structured as an exercise book. It provided engineers, who increasingly replaced architects in the construction of important buildings, with a basic training in design. Although drawing was essential to the task of architecture, Durand considered it now as representing architecture in purely technical terms assisting its design and construction—with the only permitted ‘artistic’ drawing the perspective. Durand defined drawings strictly as ‘geometrical drawing’ and by its utility to communicate what is ‘economical’ and reducible to the ‘single line’ of figure: drawing was defined as a diagram.<sup>56</sup>

‘Architecture’, writes Durand, ‘has as its object the composition and execution of buildings, both public and private’ and is subdivided into genres in accordance with ‘manners, customs, places, materials, and financial resources’.<sup>57</sup> The generalist intent of the *Précis* is revealed by the assertion that its method applies to the design of *any* building. Uninterested in specific precedents, Durand wants to ‘return to first principles of the art—that is to say, to the pursuit of certain ideas that are few in number but general in application, and from which all the particular ideas would necessarily derive’, establishing a ‘safe and rapid way to compose and execute buildings of all kinds, in all places, and at all times’.<sup>58</sup> The *Précis* therefore rejects the Vitruvian division of architecture into the three independent domains of decoration, distribution, and construction, only upholding construction as the universal reason of architecture applicable to all kind of buildings.<sup>59</sup> Construction, admits Durand, is however subsidiary to a preceding ‘general idea’ from which a rational relationship between the elements of buildings—their general disposition and specific composition—derives, and the ‘general principles’ of architecture are synonymous with disposition.

In the introduction to the *Précis*, Durand refutes the classical tradition that defined the purpose of architecture as eliciting pleasure by imitating nature through the proportions of the orders and decoration. Specifically objecting to Laugier and Vitruvius’s doctrine that architecture imitates nature, Durand aligned with Perrault states that architectural orders lack consistency in proportion and do not resemble the human body. In addition, the

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<sup>54</sup> Around the same time, a typological approach was developed by Louis Bruyère in *Etudes relatives à l’art des constructions* (1823–28) and Jean Charles Krafft, in *Recueil des plus jolies maisons de Paris et de ses environs* (1809); see Picon ‘From “Poetry of Art” to Method’, in Durand, *Précis*, pp. 1–68 (p 48).

<sup>55</sup> Compare ‘Preliminary Discourse’, in Durand, *Précis*, p. 131, n. 33.

<sup>56</sup> Compare with Durand, ‘Preface’, *Précis*, pp. 74–75.

<sup>57</sup> Durand, *Précis*, p. 77.

<sup>58</sup> Durand, *Précis*, p. 77.

<sup>59</sup> Decoration, distribution, and construction represented to Durand a modern version of the Vitruvian triad of *firmitas* (durability), *utilitas* (functionality), and *venustas* (beauty).

timber hut as a first model of architecture is deficient of the utility a 'natural' shelter ought to provide, and orders, columns, entablatures, and pediment could not derive from a translation of timber to stone construction but were determined by the material properties of stone: making the hut a myth of imitation. Discarding symbolic and transcendental arguments, Durand now posits that architecture is unconcerned with beauty—while the *Recueil* still considered beauty as an important category—and serves necessity and need, making utility and function its first principles.<sup>60</sup>

Whether we consult reason or examine the monuments, it is evident that pleasure can never have been the aim of architecture; nor can architectural decoration have been its object. Public and private utility, the happiness and the protection of individuals and of society: such is the aim of architecture.<sup>61</sup>

Despite denouncing the 'accessory' efforts of decoration to create beauty, Durand maintains the principle of pleasure, which he sees caused by the partial beauties that satisfy needs, by the fulfilment of utility and economy: 'one must neither strive to make architecture give pleasure—seeing that it is impossible for it not to give pleasure—nor seek to endow buildings with variety, effect, and character, since these are qualities that they cannot be without'.<sup>62</sup> For architecture to achieve utility, it has to satisfy fitness for purpose and economy of means. Fitness derives from solidity (the right use of materials), salubrity (the right choice of site and building exposure), and commodity (the right disposition of the building), while economy depends on symmetry, regularity, and simplicity. Regularity and symmetry, principles familiar from Boullée, however, are now restricted by simplicity. To Durand, the circle is the most economic and cost-effective form based on its geometric efficiency to enclose a surface area, while to Boullée the sphere was a symbol of equality offering endless spatial and experiential variety.<sup>63</sup> Durand's understanding of economy as a geometric problem equates it to the quantities and qualities of material required, disregarding the true construction costs determined equally by planning and construction methods.<sup>64</sup> While this simplistic concept of economy questions his knowledge of practice, it allows Durand to reframe the challenges and reasons of architecture as a formal problem that can be resolved by disposition.

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<sup>60</sup> Pérez-Gómez, tracing the rise of technology, claims that with Durand the transcendental meaning of architecture is lost; see 'Durand and Functionalism', in *Architecture and Crisis*, pp. 297–326.

<sup>61</sup> Durand, *Précis*, p. 84.

<sup>62</sup> Durand, *Précis*, p. 86.

<sup>63</sup> Durand famously criticised the Panthéon's design, arguing that built as a rotunda with a circular plan could have been much larger and impressive at half the expense. He also claimed that this would have achieved greater beauty, grandeur, and magnificence.

<sup>64</sup> To make a building economical, 'to make it as inexpensive as possible, it must be symmetrical, as regular, and as simple as possible'; Durand, *Précis*, p. 134. Even in a later discussion of building elements and construction materials, Durand lacks sufficient analysis and detail of either construction techniques or cost, in order to provide practical guidance. His summary only states that harder materials are more costly than softer ones, as they are more difficult to obtain and work.

Our sole concern will be with disposition; for when it is fitting, and when it is economical, it will attain the purpose that architecture sets for itself, and will thereby become the source of the pleasurable sensation that buildings convey to us. Disposition must therefore be our sole concern in the remainder of this work; and ought to be so, even if—we repeat—even if architecture were to take pleasure as its principal object.<sup>65</sup>

Before discussing disposition, Durand groups the elements of buildings according to his central principle of construction. He orders building materials by their quality, use, form, proportion, and economy, and lists building elements and their different types, from foundations and walls to roofs and pediments.<sup>66</sup> Concluding, Durand provides three classes of form and proportion in disposition. They are first, 'those that spring from the nature of materials, and from the uses of the things they serve to build'; second, originate from customs and antiquity; and third, 'earn our preference through the ease with which we apprehend them'.<sup>67</sup> Despite opposing imitation, Durand fails to define form and proportion without reference to the architectural orders, their application and modification. While removing the strictures of the Classical and arguing for a rational theory, he can neither relinquish the classical body of disciplinary knowledge nor eliminate the aesthetics deeply imbedded into the eighteenth-century consciousness of architecture that is represented by the proportional system of the orders. The paradox reveals Durand's neoclassical roots, but also a historical context in which proportions are still considered indispensable to architecture, thus are not perceived to contradict scientific rationalism.

Indeed, Durand never questions the purpose of the orders and only objects to their imitation of nature, demanding that they ought to be applied according to fitness, solidity, durability, weathering, and economy. This is illustrated in Plate 4 of the *Précis*, which shows the orders stripped of 'irrational' decoration and reduced to their relative proportion and structural function. Summoning Le Roy, Durand insists that even the Greek orders were only a functional system defining the relations between supports and the supported. 'If our system is neither as complete nor as consistent as might be desired, at least it is preferable in both respects to all systems hitherto devised. It also has the advantage that it rests on a more solid foundation than the imitation of the hut and the human body.'<sup>68</sup>

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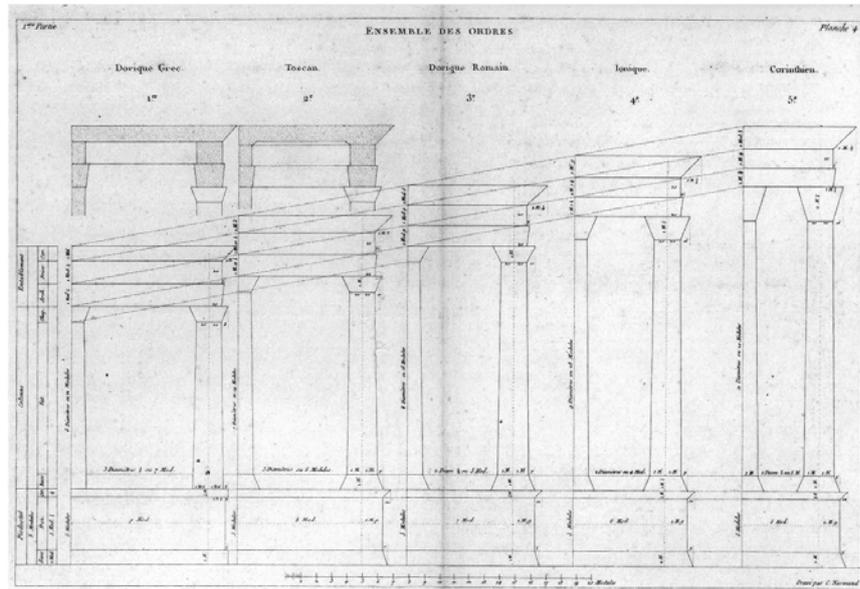
<sup>65</sup> Durand, *Précis*, p. 118.

<sup>66</sup> In 'Part I: Element of Buildings' in the *Précis*, Durand classes building materials into three groups according to their hardness, softness, and joining capacity. He also briefly describes their origins, qualities, behaviours, and properties, as well as their basic application in construction. Durand next discusses the different building elements and their respective types: foundations, walls and partitions, pillars, pilasters, columns, and piers, entablature, openings, niches, chimneys, floorings, roofs, and pediments. He then explains their construction and considers their structural strength and integrity, the economic use of building materials and technical requirements for weathering. Durand in his studies of construction refers for further details to Jean-Baptiste Rondelet, Philibert de l'Orme, and Pierre Patte; compare Durand, *Précis*, pp. 89–108.

<sup>67</sup> Durand, *Précis*, p. 108.

<sup>68</sup> Durand, *Précis*, p. 111.

The proposed solution to the orders is in itself unremarkable and a commonplace reassessment of which proportions and details should be adopted, rejected, or tolerated by contemporary architects. Unsurprisingly then, Durand reminds his students that one should ‘depart as little as possible from received systems [...] depart as little as we can from the orders adopted by the ancients and from the principal systems of ordonnance’.<sup>69</sup>



**Fig. 7 Ensemble des ordres (Part I, Plate 4)**  
 From Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'École Royale Polytechnique* (Paris: the author, 1802–05)

The simplified proportional system advocated by Durand is to provide easily applied and memorable models, echoing Perrault’s ambitions to devise a didactic system of the orders.<sup>70</sup> Durand’s allegiance with Perrault surfaces in further two essential arguments: the consideration of fitness and *convenance* as utility and the statement that ‘the profiles of the various orders owe their value solely to habit’.<sup>71</sup> While Durand maintains that only the first class of form and proportion that are concerned with construction is of real importance, his continuous reliance on the orders undermines the rationality of the separation and exposes his concepts of utility and economy as aesthetic. Similarly, when citing in his support Le Roy’s *Histoire*—how the construction of architecture generates specific surface effect that elicit aesthetic sensations—this only adds to the ambiguity of Durand’s attitude towards classical precepts. By admitting the use of orders to achieve a surface effect, it admits architecture as aesthetically judged and depending on Perrault’s positive and arbitrary beauties.<sup>72</sup>

In the second part of the *Précis*, Durand develops his main theory of disposition as a genetic distribution of parts. He systematically sets out how the horizontal plan informs

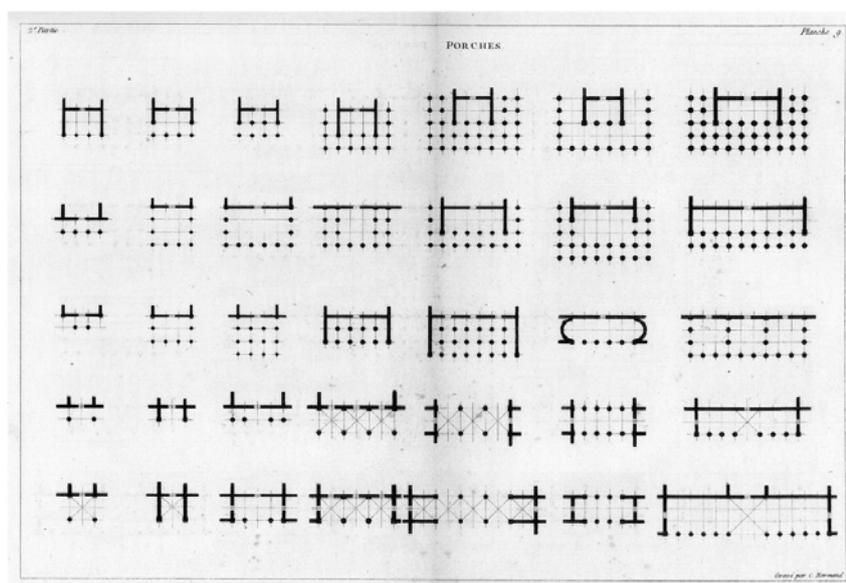
<sup>69</sup> Durand, *Précis*, pp. 110–11.

<sup>70</sup> Durand includes the Doric, Tuscan, Roman Doric, Ionic, and Corinthian, but omits the Composite order.

<sup>71</sup> Durand, *Précis*, p. 112.

<sup>72</sup> In regards to Perrault’s influence on Durand, compare with Picon, ‘From “Poetry of Art” to Method’, in Durand, *Précis*, pp. 1–68.

vertical sections, and plan and section determine the elevation.<sup>73</sup> Presented methodically as generic, the distribution of elements in the building design are regulated and limited by regular grids and principal axes, with the grid formed by parallel inter-axes determined by the possible structural distance between two columns: their fitness for purpose (accommodating the minimum required building elements) and economy (achieving the largest possible span and minimal structural support). The structural elements—structural in a method, technical, and aesthetic sense—are differentiated by subdividing the initial grid and omitting, adding, or offsetting an axis. This enables an endless combination and arrangement of building elements. Durand’s instrumentalisation of the grid to design is original in its profound procedural and technical exploitation and expresses a loss of cosmological connotations of geometry and numbers as first promulgated by Perrault.<sup>74</sup>

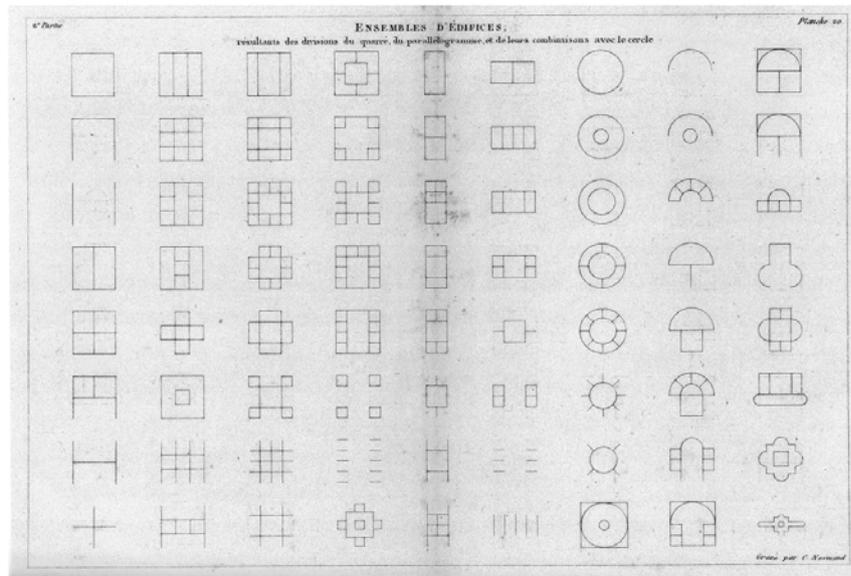


**Fig. 8 Porches (Part II, Plate 9)**  
 From Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture*  
 données à l'École Royale Polytechnique (Paris: Chez, 1802–05)

Continuing the combinatory process, building parts, which are composed of building elements, are initially laid out as simple geometries (square, rectangle, and circle) and subsequently varied by altering their principal axes. The methodical manipulation of grid and axes not just applied to the building elements but also the subdivision of complete geometric figures and building plans that are composed of aggregated building parts. Consequently, the figure of buildings can seamlessly mutate into a vast number of organisational diagrams, as Plate 20 of the *Précis* impressively demonstrates.

<sup>73</sup> Similarly, Quatremère writes: 'Vitruvius lists *disposition* among the five divisions of architecture. But it seems that among the Romans this word corresponded to what we would call today *distribution*, or even to the art of designing architecture; because, he says, there are three parts to disposition: *ichnography*, *orthography*, and *scenography*, that is to say, the plan, the elevation and the perspectival view.' In 'Disposition', in *Quatremère's Historical Dictionary*, pp. 142–43.

<sup>74</sup> The loss of cosmology through the rise of new scientific technology is discussed by Pérez-Gómez. He also identifies the earliest methodical use of the grid in architecture by Cesare Cesariano in his version of Vitruvian man in 1521, when it still embodied cosmology. See Pérez-Gómez, *Architecture and Crisis*, pp. 308 and 311.



**Fig. 9 Ensemble d'édifices résultants des divisions du carré, du parallélogramme, et de leurs combinaisons avec le cercle (Part II, Plate 20)**

From Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'École Royale Polytechnique* (Paris: the author, 1802–05)

The 'mechanical' composition of a building suggested by the method is bottom-up, emulating scientific methodologies by moving from the 'simple to the composite'.<sup>75</sup> The combination of building elements (columns, pilasters, walls, windows and doors) and building parts (porches, vestibules, stairs, rooms, and courtyards) into an ensemble assumes, so Durand, that 'the general principles of architecture require that walls, columns, doors, and windows, whether in the length or breadth of a building, should be placed on a common axes', which means that the rooms formed by them are aligned along principal axes with doors or walls.<sup>76</sup> Despite this disposition being procedural and self-referential, Durand claims that it responds to the different requirements of 'places, persons, sites, costs, and so on'.<sup>77</sup> And although depriving architecture of significance other than functional utility, his concept of utility remains socio-culturally reasoned, insisting on the importance of private and public utility.

Once the plan is determined, the sections are developed from in principle infinite but rational vertical combinations. Following the plan and section, the elevation is similarly 'no more than the result of these two—offer such variety that the same decorative effect is never found twice'.<sup>78</sup> However, the plan-bias is deficient to convincingly determine vertical

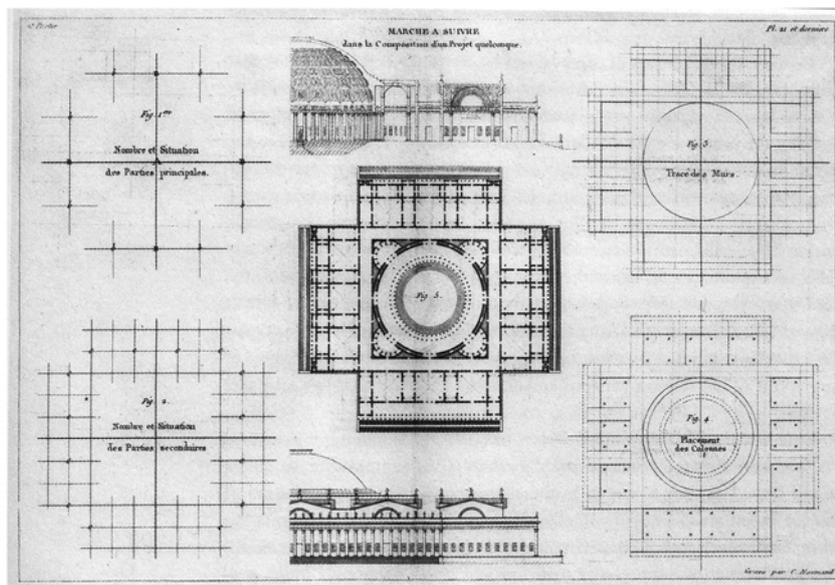
<sup>75</sup> Goethe opposed the mechanical approach in his 'chemical' study of nature: 'Um manches Mißverständnis zu vermeiden, sollte ich freilich vor allen Dingen erklären, daß meine Art, die Gegenstände der Natur anzusehen und zu behandeln, von dem Ganzen zu dem Einzelnen, vom Totaleindruck zum Beobachten der Teile fortschreitet, und daß ich mir dabei wohl bewußt bin, wie diese Art der Naturforschung, so gut als die entgegengesetzte, gewissen Eigenheiten, ja wohl gar gewissen Vorurteilen unterworfen sei. So gestehe ich gern, daß ich da noch oft simultane Wirkungen erblicke, wo andere schon eine successive sehen...' Johann Wolfgang von Goethe in a letter to Carl Cäsar von Leonhard (12.10.1807), as cited by Ernst Jünger in *Typus, Name, Gestalt* (Stuttgart: Klett-Cotta, 1963), p. 31.

<sup>76</sup> Durand, *Précis*, p. 140.

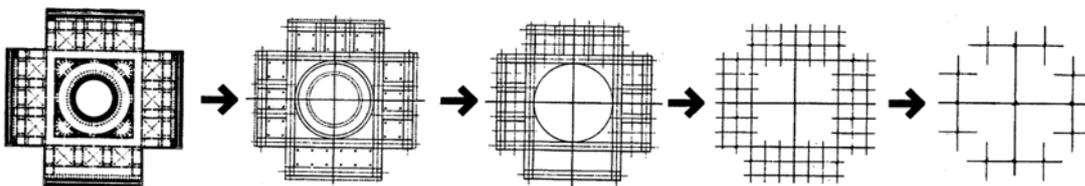
<sup>77</sup> Durand, *Précis*, p. 126.

<sup>78</sup> Durand, *Précis*, p. 121.

sections and elevations without relying on additional conventions indicating scale and mass, and essentially depends on stylistic choices. The exemplary elevations given in the *Précis* are thus *not* the result of procedural differentiation but modifications of precedents, making their selection an essential precondition to design. It reveals the method's limitation to invent, as it is bound to a priori fixed images of the completed building. Consequently, this preselected image and normative model is completed albeit modified by the process of disposition. This is entirely consistent with the aim of the *Précis* to train engineers to be capable of interpreting and perhaps improving works by architects. The impossibility of a grid to rationally generate a complete typological transformation, even in its accumulative differentiation of elements, is exposed by the famous Plate 21, entitled *Marche à suivre dans la composition d'un projet quelconque*, which discloses the incoherence of Durand's method: the suggested sequence of design is only logical in its reversed order.<sup>79</sup>



**Fig. 10 Marche à suivre dans la composition d'un projet quelconque**  
 From Jean-Nicolas-Louis Durand, *Nouveau précis des leçons d'architecture: données à l'Ecole Impériale Polytechnique avec planches* (Paris: Fantin, 1813)

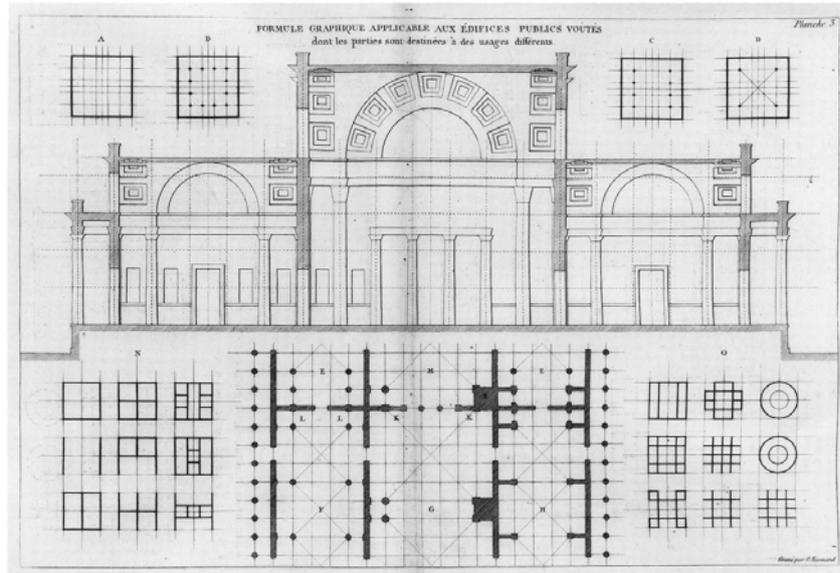


**Fig. 11 Durand's method of composition, reversed**  
 From Leandro Madrazo, 'Durand and the Science of Architecture', *Journal of Architectural Education*, 48.1 (1994)

The procedural limitations are mitigated by Durand in the *Nouveau précis* of 1813, which introduces a vertical system of axes equivalent to that in plan, with a corresponding structural spacing based on the proportional heights of applied orders and their supporting

<sup>79</sup> The plate was added in the 1813 edition of the *Nouveau précis*. The contradiction revealed by the plate is, as pointed out by Madrazo, a 'transformation of geometry into architecture'; see 'Durand and the Science of Architecture' in *Journal of Architectural Education*, 48.1 (1994), 12–24; and 'The Concept of Type in Architecture'.

arches. While this improves the generative logic of vertical plans, it remains incomplete and still relies on proportional orders. Even though proportions are now reasoned as deriving from structure, the plans are subordinated to the elevation, which Durand previously condemned as ‘absurd’ as it means to ‘deduce the cause from the effect’.<sup>80</sup>



**Fig. 12 Formule graphique applicable aux édifices publics voutés (Plate 3)**  
 From Jean-Nicolas-Louis Durand, *Partie graphique des cours d'architecture faits à l'École Royale Polytechnique depuis sa réorganisation* (Paris: the author, 1821)

Surveying the principal kinds of building in the second volume of the *Précis*, Durand expands his criterion of utility to the city and classifies its parts, from the infrastructural elements, city gates, streets, bridges, and public squares, to principal public and private buildings. This is a claim that the dispositional method has no scalar limit and is absolute. The city, like its individual buildings and their parts, is arranged according to a grid and principal axes. The image and idea of the city conjured up by Durand is a utopian and positivist city of reason and hygiene, but also a city of relentless uniformity.<sup>81</sup> However, the suggested standardisation and aesthetic-functional scenography is surprising, as the supposed benefit of the method is endless formal variation and utility, yet anticipates the monotony that modern reasoning of utility would create. Further undermining methodical rigour is Durand's design of public buildings by reducing them to prototypes without providing an analysis of their parts, which would be necessary in order to establish whether criteria of utility are fulfilled. Instead, the prototypes are mostly copied from the *Recueil* and justified by the assumption that they represent the provisional endpoint of a progressive formal sequence. While Durand more successfully demonstrates the compositional

<sup>80</sup> Durand, *Précis*, p. 139.

<sup>81</sup> 'If, to shorten the journey, to avoid congestion and the accidents that frequently result from it, and to promote the renewal of the air, the streets were made to intersect at right angles; if, to spare those who pass along them the inconvenience of mud, rain, and sun, they were lined with porticoes; if those porticoes, being designed for the same purpose, were made uniform in disposition through a given city; and if, finally, those houses to which they give access were disposed in the manner best suited to the fortunate and condition of their occupants, and varied in mass accordingly: then such a city would afford the most delightful and theatrical scene.' Durand, *Précis*, p. 145.

variation of private than public buildings, the illustrated prototypes in the *Précis* confirm disposition as restricted to the modification of precedents.<sup>82</sup> This confirms that Durand maintains a strong historical perspective, and displays a conservatism and lack of invention in comparison to the radical formalism of his teacher Boullée, with whom Durand shares less than with the considered historicism developed by Perrault and Le Roy. In the end, summarising the methodical disposition of any project in the *Précis*, Durand admits to the significance of a pre-established *parti*:

To combine the different elements, then to proceed to the different parts of buildings, and form those parts to the whole: such is the natural sequence that should be observed in learning to compose. By contrast, when you come to compose yourself, you must begin with the whole, proceed to the parts, and finish with the details.<sup>83</sup>

In the concluding page of the *Précis*, the previous critical progression from the simple to the complex is unexpectedly undone. Distinguishing didactic from applied composition, Durand returns to a top-down approach, now more unyielding than before, as an orthogonal grid determines the building's elements and *parti*. Despite Durand's persistent reference to the realities of construction and materials, it confirms his main interest in architecture as a didactic and abstract project, but also questions the usefulness of his method to practice.<sup>84</sup> In the *Graphic Portion of the Lectures on Architecture*, added to the *Précis* in 1821, he explains that the reversal of the traditional design process only applies when teaching architecture, arguing that with a progression from the part to the whole an analysis is possible not available to conventional composition that moves from an ensemble to its components. By examining the components first, the particular case is eliminated and precedents are abstracted to their generic ideas, which permit an analysis of the general principles of disposition.<sup>85</sup> This makes Durand's methodical abstraction an analytical exercise to procedurally transform buildings parts, and accordingly his students had to execute four designs of building elements on gridded paper (the composition of orders, doors and windows, a room, and a staircase).<sup>86</sup>

By breaking down the general idea of the architecture into special ideas, and those into particular ideas, in the graphic portion we have broken down the

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<sup>82</sup> Private buildings, which are 'all simple in the extreme, and yet all quite different' are more comprehensively analysed in their architectural principles and parameters of utility. Durand discusses the possible combinations of the block forming different kinds of town houses, apartments, and tenements, including their adaptation to irregular plot shapes; see *Précis*, p. 180.

<sup>83</sup> Durand, *Précis*, p. 180.

<sup>84</sup> This interest in architecture as a project is what Durand shares with Boullée according to Antoine Picon, 'The Ghost of Architecture: The Project and Its Codification', *Perspecta*, 35 (2004), Building Codes, 8–19.

<sup>85</sup> Durand understands *composition* as an 'analytical method, the set of procedures that makes it possible to decompose objects and to set to their component parts', borrowing from Locke, Condillac, and Condorcet; see Picon, 'From "Poetry of Art" to Method' in Durand, *Précis*, pp. 1–68 (p 36).

<sup>86</sup> Compare Durand, *Précis*, p. 185.

general ideas of buildings into those of their parts, and these in turn into those of their primary elements; then, by working back from the elements to the ensemble of the buildings—that is to say, by analyzing them—we have succeeded in forming a precise idea of them, just as we had first succeeded in forming a precise idea of architecture itself by analyzing the general idea expressed by that word.<sup>87</sup>

A later addition, the *Graphic Portion* rehearses the method of the *Précis* in eight lectures.<sup>88</sup> Especially the last lecture on the ‘Composition of the Ensemble of a Building by Combining its Parts and the Method to be Adopted when Composing or Copying’ explicitly describes syntactic disposition as a thorough method. Durand first distinguishes between the composition of an ensemble by combining irreducible building elements and by developing precedents. The first method is didactic and through procedural manipulation of the grid modifies a figurative diagram. The basic diagram is analysed and differentiated according to the parameters of ‘number, form, situation, and size’, resulting in diverse ensembles. The procedure is additive and creates new figures with increasing complexity, while implying a morphological series. The second method of copying requires firstly a precedent ensemble. Considered by Durand as composition proper, the compositional copying is a differentiation or adaptation of existing models. Durand states, ‘the more you have thought in the past, the more rightly you think; thought costs effort [...] even a first idea could never be conceived without the stimulus of some external cause’, which confirms that even his concept of disposition ultimately relies on received forms and conventions.<sup>89</sup> ‘Applied’ composition abstracts the model into structural diagrams (*croquis*), which become figurative and, similar to the first method, are detailed by articulating a grid and its axes that determine the positions, relations, and scale of the building’s parts and elements.

Though Durand’s method advances Le Roy’s analysis of formal progression in a line of development and makes it relevant to design, his use of precedent is ultimately less concerned with progression than normative form. He concludes the normative discourse by relativising proportions and instrumentalising diagrammatic form. Thus, the ambition of the *Précis* to devise a didactic design method. Although conceived for engineers and inferring that architects are replaceable, the *Précis* was ironically immensely popular amongst them. Consolidating architectural design principles and attempting to modernise the curriculum

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<sup>87</sup> Jean-Nicolas-Louis Durand, *Partie graphique des cours d'architecture faits à l'École Royale Polytechnique depuis sa réorganisation; précédée d'un sommaire des leçons relatives à ce nouveau travail* (Paris: the author, 1821). English translation: *Précis of the Lectures on Architecture with Graphic Portion of the Lecture on Architecture*, trans. by David Britt, with introduction by Antoine Picon (Los Angeles: The Getty Research Institute, 2000), pp. 185–86.

<sup>88</sup> While the lectures repeat the basic structure of Part I and II of the *Précis*, the last three deal with composition. Lecture six covers the ‘General Combination of Elements’, lecture seven the ‘Composition of Parts of Buildings by Combining their Elements’, and lecture eight the ‘Composition of the Ensemble of a Building by Combining its Parts and the Method to be Adopted when Composing or Copying’.

<sup>89</sup> Durand, *Précis*, p. 195.

according to scientific teaching methodologies, Durand challenges the use of models, codified by the pedagogy at the Académie as an imitation of received forms. With his positivism incompatible with copying historical solutions, he generalises them to normative models and eliminates their historical significance.<sup>90</sup> He hereby fundamentally changes a transcendental and mimetic explanation of architecture for a functionalist doctrine, with disposition supposedly the direct outcome of structure and economy. Without contradicting his modern agenda, Durand's relativisation of historical models enables him to accommodate the classical doctrine as contingent to the task of design: 'In the composition of these new ensembles, we have summoned to our aid all that the ancient historians have handed down to us concerning the grandest and noblest achievements of the Egyptians, the Greeks, and the Romans in architecture.'<sup>91</sup> Indeed, his objection to the classical tradition is only partial and the *Précis* surprisingly reveals: a persistent consideration of architecture in terms of symbolic and social character rather than utility (a lighthouse is solid, a hospital salubrious, a prison secure, markets clean, etc.), that decoration is still integral to architecture (once architecture is 'sketched' out, it serves as a blank surface for the decoration that the architect sees 'fit to employ'), and that architecture continues to imitate nature (as the architect is 'imbued with principles derived from nature').<sup>92</sup> Like Quatremère, however, Durand considers the principles of nature abstractly as the forming of an 'uninterrupted' succession of observation and reasoning, and as a historical but increasingly historicised process.<sup>93</sup>

Durand's abstraction of form underlies a positivist belief that a systematic accumulation of intelligence and complexity is possible. Exemplified by the sciences, the attainment of knowledge does not derive from representation but a 'comprehensive, natural, simple, and rational manner', epitomised by the taxonomical ordering and diagrammatic analysis of common structures. This rationality of architecture is closely linked to a social agenda, as striving for utility is what forms society: 'Architecture and architects are made for society.'<sup>94</sup> Architectural knowledge ought to be *general* and accessible as 'an art that brings such great and manifold benefits to humanity and to society when well understood [...] may no longer remain the sole prerogative of those who practice architecture as a profession'.<sup>95</sup> It is this general and social agenda of Durand's theory that establishes a new formal grammar and reasoning, and claims to respond to the functional and utilitarian exigencies of modern society, which anticipates the programme but also failure of the twentieth-century Modern Movement.

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<sup>90</sup> 'We have seen that this method was incomplete; it will be realized that, worse than imperfect, it is disastrous: that it is absurd to profess a knowledge of architecture on the strength of having copied, composed, and elaborated a few designs, since architecture is the art of making all designs.' Durand, *Précis*, p. 200.

<sup>91</sup> Durand, *Précis*, p. 198.

<sup>92</sup> Compare with Durand, *Précis*, pp. 180–81.

<sup>93</sup> Durand, *Précis*, p. 181.

<sup>94</sup> Durand, *Précis*, p. 201.

<sup>95</sup> Durand, *Précis*, p. 200.

The modification of precedents in the *Précis* presents a methodical differentiation of isolated structural and formal elements. More significantly, the method offers an effective diagrammatic process, which according to Durand prevails over typical specificity and function, as his dispositions often completely disregard both.<sup>96</sup> The management of the process nevertheless requires continuous and, more than Durand is willing to admit, acceptance of aesthetic conventions; it presupposes an ideal spatial relation between depth and height that is not justifiable by geometric or structural arguments, and weakens the self-sufficiency of the process. The simple plan geometries of Durand's dispositions always retain symmetry and regularity, and adhere to decorative customs defined by the classical orders. Equally, the customary hierarchy and sequence of spaces prescribed by a doctrine of character are maintained, albeit transferred to a notion of economy in disposition. Despite unceasingly denying the importance of decoration, Durand's method is determined by aesthetic choices, especially an aestheticised functionalism and 'structural honesty', with structure becoming the ultimate expression of reason and utility. Advancing the classification system by d'Aviler and Le Roy's comparative diagrams, Durand's method bestows a new rational meaning to the process of composition and architectural form, and can be considered thorough and acquiring a degree of procedural autonomy. But at the cost of invention, as form is limited by a morphological sequence and predetermined image. Durand completes Le Roy's ambitions to conceive drawing and technique as a diagrammatic practice that no longer conveys a visible but structural representation. This requires a significant epistemological shift that emerges in Durand's work and accords with Foucault's description of knowledge in the modern episteme being less one of identities and differences than of organic 'internal relations between elements whose totality performs a function', and having relations of analogy and succession.<sup>97</sup>

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<sup>96</sup> *The Procedure to be Followed in the Composition of Any Project* is illustrated by a project that Durand adapted from Charles Percier's 'Monument destiné à reassembler les académies' (1786), but without reference to its function. See Werner Szambien, 'Durand and the Continuity of Tradition', in *The Beaux-Arts: And Nineteenth-Century French Architecture*, ed. by Robin Middleton (London: Thames and Hudson, 1982), pp. 21–22.

<sup>97</sup> See Foucault, *The Order of Things*, p. 218.

### 3 QUATREMÈRE'S THEORY OF TYPE

*We believe in distinguishing between the theory of facts and examples, called practical theory; the theory of rules and precepts, called didactic theory; and the theory of principles or reasons upon which rules are based, called metaphysical theory.*<sup>1</sup>

While Durand proclaimed in the *Précis* a new beginning of architecture and the end of history, Quatremère too reconsidered the burden of history. However, he looked at history from a socio-cultural perspective, motivating a reformulation of the historical discussion of the *Mémoire* in *De l'architecture* as an ahistorical concern with origins that relates architectural formation to that of society. Despite outlining a tripartite system of origins with fixed models, like Durand he believed, that form in its typological sense is open-ended and to a degree independent. Quatremère however understood this autonomy as predominantly a methodological and systematic problem, insisting that architecture has a moral and cultural responsibility, which means that autonomy can always only be partial.

Posing the question of what constitutes truth in art, architecture, and history, the problem of imitation became central to Quatremère's epistemology. To destroy the prevalent divisions in the fine arts, he needed to construct a conceptual framework that could enable their comparison, analysis, and synthesis. He achieved this by re-conceptualising imitation and replacing the traditional mimesis of nature with an abstract notion of type. Superseding classical mimetic representation, Quatremère emphasised an always already preceding act of intellection through socialisation and enculturation that the production of any work of art necessitates, defining imitation as a product of socio-cultural appropriation rather than predetermined by nature.<sup>2</sup> Retaining the notion of imitation, in order to remain within the disciplinary discourse defined by classical paradigms, he confronted the established classification of the arts and derived a modern systematisation of theory that could replace the existing schemes by Charles Batteux and Diderot.

Quatremère defined the fine arts as an intellectual and participatory proposition between the artist and the observer, with the productions of art principally explained by their social

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<sup>1</sup> 'Theory', in *Quatremère's Historical Dictionary*, pp. 249–50.

<sup>2</sup> The cultural anthropologist Melville Jean Herskovits describes man as 'uniquely culture-building' and distinguishes in the formation of culture by individuals of a society between *socialisation* (a formal social integration and a process of *education* and *conditioning* through social institutions) and *enculturation* (unconscious, in children, or conscious, in adults, conditioning in accordance with specific customs, providing the knowledge of values, rituals, and behaviours of a culture, establishing cultural stability but also allowing for the possibility to induce cultural change). The cultural change that takes place as a result of exchange between different cultures is defined as *diffusion* (if a cultural transmission has been achieved) or *acculturation* (when a cultural transmission is in process). Compare 'Culture and Society' and 'Acculturation: Cultural Transmission in Process'; in *Man and his Works* (New York: Alfred Knopf, 1948; repr. 1956), pp. 29–42 and 523–41.

function rather than means of representation.<sup>3</sup> Quatremère's efforts were consistent with a conceptual shift of the fine arts towards a new socio-cultural agenda: 'The category of fine arts and its criterion of refined pleasure and informed judgement was neither a purely intellectual construct nor the simple expression of an existing social division but part of an effort to institute a new distinction at once social and cultural.'<sup>4</sup> Despite an unashamed predilection for Classical Antiquity—to Quatremère the 'ideal style'—he thought of his art theory as fundamentally open and 'purely speculative'.<sup>5</sup> 'Such theory reverts back to the principles from which all rules are deduced, it has in it nothing dogmatical. The means it lays open to the artist are rather lights to enlighten him in acting, than instruments to act with.'<sup>6</sup> Therefore, his theoretical speculations and system were in principle indifferent to artistic styles. Based on abstract and general models—or types as he later termed them—his comprehensive theory of imitation in the fine arts was effectively only constrained by the socio-cultural context and cross-disciplinary conventions it produced. His theory of type derived from this enquiry into the formation and knowledge of the arts and was part of an on-going discourse into their systematisation.

### 3.1 ARCHITECTURE, IMITATION, AND THE ARTS

Up to the eighteenth century, architecture principally belonged to the practical or mechanical arts. Originating from a distinction harking back to the Middle Ages, the artisan crafts and mechanical arts were categorised in distinction to the 'intellectual' liberal arts.<sup>7</sup> The division of the arts expressed a social segregation, with the mechanical arts also known as *artes illiberales*, which prolonged their exclusion from the domains of formal knowledge.<sup>8</sup> Unlike the liberal arts, mechanical arts belonged to the practical and material disciplines, owing their forms and processes to a direct imitation of nature, while their skills were imparted informally. Architecture serving utility, like all mechanical arts, therefore was considered lacking intellectual grounds and excluded from the classical canons of philosophy.

However, with the growing importance of sciences, engineering and, especially, mathematics, the mechanical arts began to include the domains of craft, economy, and technology, which challenged the traditional division between arts and sciences. The

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<sup>3</sup> For a survey of the classification of the arts until its eighteenth-century codification by Charles Batteux, see Paul Oskar Kristeller, 'The Modern System of the Arts: A Study in the History of Aesthetics', *Journal of the History of Ideas*, Part I in 12.4 (1951), 496–527 and Part II in 13.1 (1952), 17–46.

<sup>4</sup> Larry Shiner, *The Invention of Art: A Cultural History* (Chicago: University of Chicago Press, 2001) p. 97.

<sup>5</sup> Antoine-Chrysostome Quatremère de Quincy, *Essai sur la nature, le but et les moyens de l'imitation dans les beaux-arts* (Paris: Treuttel et Würtz, 1823), trans. by J. C. Kent in *An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts* (London: Smith, Elder and Co., Cornhill, 1837), p. 421; hereafter cited as Quatremère, *Essay on Imitation*.

<sup>6</sup> Quatremère, *Essay on Imitation*, p. 305.

<sup>7</sup> Whereas the liberal arts, consisting of the trivium (grammar, rhetoric, and dialectic) and the quadrivium (arithmetic, geometry, astronomy, and music), imparting general knowledge and training the intellectual capacities through formal education, the mechanical arts passed on practical skills for manual production.

<sup>8</sup> Hugh of Saint-Victor in *Didascalicon* (late 1120s), succinctly described this division between mechanical and liberal arts.

Renaissance responded to this with educational reforms and introduced the first methodological instruction in all branches of arts and sciences. This required a rationalisation of the means of representation and resulted in its utilisation for analysis, creating first mathematically accurate linear perspectives and a shift towards 'realism' in the visual arts. When classical proportions were rediscovered through archaeological finds, measured drawings allowed their precise comparison and the Renaissance established its continuity with the Classical Antiquity by deducing proportional rules. The new rationalism and methodical approach to study and interpret the physical world, gave the visual arts of drawing, painting, sculpture, and architecture great significance. Architecture, or more precisely its conceptual and material design through *lineamenti* and *disegno*, was now included in the expanded liberal arts under mathematics.<sup>9</sup> This eventually introduced a clearer distinction between arts and crafts, which was until then prevented by a Greek designation of all arts as *techné*—the practical skills and taught rules to execute the mimesis of nature in the making of objects—and prepared a modern definition of the arts and artistic production as independent from utility.

Leon Battista Alberti expressed architecture's new self-confidence in its first modern treatise on theory and practice, in *On the Art of Building* (*De re aedificatoria*, 1485), which claimed that architecture contained a fundamental form of knowledge beyond utility and belonged to both the arts and sciences.<sup>10</sup> Alberti's treatise marked a pivotal change in the legitimacy of the architect, elevating his status to that of an intellectual. Although evident in most Renaissance writing, this attitude was particularly explicit in Federigo Zuccaro's *L'idea de' Pittori, Scultori, ed Architetti* (1608). Zuccaro developed a theory of 'internal design', intended to provide the visual arts with superior authority over the crafts by recognising the intellectual reasoning informing their processes. Debating the age-old dialectic between *idea* and *representation*, he posited that design is the result of an idea, an intellectual 'intention and will', and its exploration through representation and material formation.<sup>11</sup>

The emancipation of the visual arts made a reclassification of the arts necessary. A challenge taken up by Charles Batteux (1713–1780), who in his treatise *Les beaux arts réduits à un même principe* of 1746 codifies the system of the arts by introducing the novel term fine arts (*beaux-arts*).<sup>12</sup> Wanting to unify the fine arts by a 'single principle', Batteux takes recourse to a sophist separation of the arts as either serving utility or pleasure. In addition, he adapts their concept of *imitation* to give authority to his system of the arts, as imitation until the introduction of aesthetics and advent of Romanticism defined all

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<sup>9</sup> See Alberto Pérez-Gómez, 'Introduction', in Perrault, *Ordonnance*, p. 1.

<sup>10</sup> *De re aedificatoria* is purported to be written by 1452 but not published until 1485. Alberti is also the author of a first formal study of perspective in *Della pittura* (1435) that described a new iconic space.

<sup>11</sup> See Federigo Zuccaro, 'The Idea of Painters, Sculptors and Architects' (1608), trans. by Liane Lefaivre and Alexander Tzonis, in *The Emergence of Modern Architecture* (London: Routledge, 2004), p. 168.

<sup>12</sup> The term 'beaux-arts' was initially translated into English as *polite arts* before becoming accepted as the *fine arts*. For a discussion of the emergence of the notion fine arts see Shiner, 'Constructing the Category of Fine Arts', in *The Invention of Art*, pp. 80–88.

production of works of art.<sup>13</sup> In keeping with the classical doctrine of imitation, he characterises the fine arts as imitating *la belle nature* (the beautiful nature), firmly endorsing beauty and aesthetic pleasure as the definitive aim of the arts and basis for their judgement.<sup>14</sup> This once again clearly distinguishes the fine arts from the mechanical arts and sciences, and returns to the traditional view of imitation as inapplicable to the useful arts satisfying utility and necessity. Different in Batteux's system, however, is that rhetoric and architecture as pleasurable and useful arts, complicit with both utility and beauty but deficient of imitation, form a new group of *beautifying arts*.

The classical authority of *imitation theory* exerted a great influence on eighteenth-century aesthetic writing, including those by Batteux, Winckelmann, and Quatremère. The Greek philosophy by Plato and Aristotle conceptualised *imitation* as combining the phenomena of *mimema* (imitation), *eikon* (image), and *homoioima* (likeness). *Mimesis*, denotes a 'theory of pictorial apprehension and representation', and distinguishes between the real thing and its appearance in something else, the *mimema* or 'man-made dreams produced for those who are awake', Plato wrote in the *Sophist* (266c).<sup>15</sup> The *mimema* or *eikon* are reproductions and impressions of something real that is represented in some parts but never all its characteristic and contingent properties, shapes, and qualities. Yet, it suffices for its recognition as a mental image or preformed Idea. This recognition depends on a human mimetic faculty, which allows the artist the production (*poiesis*) and invention of objects prompting a mental image and its apprehension by the observer. Both production and apprehension require a faculty of abstraction, generalisation, translation and, according to Neoplatonism, idealisation. They all become essential to *mimema*, whose efforts, while based on real things, memories, and imaginations, are always to create 'life-likeness' through skill and practice (*techné*). Consequently, creativity is measured as the skilfulness to represent nature—differing notably from its modern conception, which judges the originality and autonomy of the artwork against an imitation of nature.

Whereas Plato saw artistic imitation as by definition incapable of obtaining real knowledge, Aristotle attributed to it a nobler potential to intensify and disclose the abstract and universal relations existing between things and human actions.<sup>16</sup> Batteux in *Les beaux arts* subscribes to an Aristotelian imitation as the principal standard of the fine arts. Concerned

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<sup>13</sup> The term aesthetics was only coined by Alexander Baumgarten in *Meditationes philosophicae de nonnullis ad poema pertinentibus* of 1735 and made popular through his *Aesthetica* of 1750–58.

<sup>14</sup> The Greeks themselves saw the ideas of beauty, art, and poetry as separate. With Plato and Aristotle a differentiation of arts that produce or imitate nature appears, but for both, the arts in the sense of modern fine arts did not seem of particular importance. See W. Tatarkiewicz, 'Classification of Arts in Antiquity', *Journal of the History of Ideas*, 24.2 (1963), 231–40.

<sup>15</sup> A detailed definition of *mimesis* is provided by Göran Sörbom, 'The Classical Concept of Mimesis', in *A Companion to Art Theory*, ed. by Paul Smith and Carolyn Wilde (London: Blackwell Publishers, 2002), pp. 19–28.

<sup>16</sup> The relationship between the Platonic Idea and a work of art is discussed by Erwin Panofsky in *Idea: Ein Beitrag zur Begriffsgeschichte der älteren Kunsttheorie* (Leipzig: Teubner, 1924). English translation: *Idea: A Concept in Art History*, trans. by Joseph Peake (New York: Harper & Row Publishers, 1968).

with the problem of poetry versus prose and continuing a Renaissance debate on the correspondence between poetry and painting, Batteux generalises the theories of Aristotle and Horace. Aristotle in *Poetics* (c. 335 BC) described poetry as a form of imitating human actions through the use of language, based on which Horace in *The Art of Poetry* stated his doctrine 'ut pictura poesis' (as is poetry so is painting), which was seen to justify the characterisation of painting as poetry, significantly influencing the definition of the arts since the mid-sixteenth century and only fading in importance with Gotthold Ephraim Lessing's *Laocoön* (1766) and Romanticism.<sup>17</sup> Equipped with this conceptual framework of imitation and poetry, Batteux in *Les beaux arts* examines the essence of the arts and their means, concluding that all fine arts are unified by their imitative idealisation of *la belle nature*. While the shared principle of the fine arts is 'poetical', to Batteux the arts differ in their available means, and *Les beaux arts* discusses the principle of imitation in relation to the fine arts, literary genres, and eloquence. Applying the Aristotelian doctrine of poetry, that an ideal imitation of nature should not represent her as found but as she 'ought' to be, the intention of the treatise is to furnish proof to Batteux's threefold argument:

First, That Genius, which is the Father of the Arts, ought to imitate Nature. Secondly, That Nature should not be imitated, such as she is. Thirdly, That Taste, for which Arts are made, and which is their Judge, ought to be satisfied, if Nature is well chosen and well imitate by the Arts. Thus all our Rules should tend to establish the Imitation of (what we may call) beautiful Nature. [1. By the very nature of Genius that produces it. 2. By the Taste that judges it.]<sup>18</sup>

Essential to Batteux's concept of the imitative arts are genius and taste, which are natural capacities concerned with nature or its resemblance. Genius serves cognition and realises a reasoned work of art, thus is not a free creative force but constrained by the mere perfection of nature's models through studies and copies that retain the appearances of nature whereas, so Batteux, reason only considers objects in their essence, as to whether they are true or false. In contrast, the principles of (moral) taste contemplate the affect of the object on the subject and are intimately connected to aesthetic sentiment. Taste always 'correctly' judges the good, which is a prerequisite to pursue ideal beauty in the fine arts. However, only genius is capable to unite the contradictory qualities of reason and sentiment in a considered exactitude that respects the limits defined by nature. Conforming to Aristotle's restriction that poetry is *verisimilar* whereas prose reflects on the true (actual),

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<sup>17</sup> Lessing famously contested the analogy between poetry and painting, differentiating between the temporal art of poetry and the spatial art of painting with its aim to represent bodily beauty. See Peter Simpson, 'Aristotle on Poetry and Imitation', *Hermes*, 116.3 (1988), 279–91; Lee, 'Ut Pictura Poesis', pp. 197–269; and Roy Park, "'Ut Pictura Poesis": The Nineteenth-Century Aftermath', *Journal of Aesthetics and Art Criticism*, 28.2 (1969), 155–64.

<sup>18</sup> Charles Batteux, *Les beaux arts réduits à un même principe* (Paris: Chez Durand, 1746). Abridged English trans. in *The Polite Arts, or, a Dissertation on Poetry, Painting, Musick, Architecture and Eloquence* (London: Osborn and Lownds, 1749), p. 9. Addition of omitted original text mine: '1°. Par la nature meme du Génie qui les produit. 2°. Par celle du Goût qui en est l'arbitre.'

Batteux posits that for genius to understand verisimilitude—of how nature *ought to* appear or act—it requires an ‘enthusiastic’ study of nature, which combines imagination with reason and creates an emotional bond between artist and nature. Despite restricting artistic invention to verisimilitude, precisely this limitation allows Batteux to propose a unifying albeit self-referential principle based on the premise that: as nature exclusively provides the models of art, any ‘true’ art cannot but imitate her.

However, Batteux fails to provide a clear definition of *la belle nature*, a critique already levelled against him by his contemporary Diderot, who himself was interested in the problem of imitation. Batteux only characterises the imitation of *la belle nature* through a close collaboration between genius and taste in order to realise a perfection of beauty. Perfection, according to Batteux’s circular argument, is synonymous with *la belle nature* and achieved by idealising a particular nature through verisimilitude, whereby its judge, taste, is assisted by the conventions of unity, diversity, symmetry, regularity, and proportions. The interrelations between genius and taste inform how sentiment arouses aesthetic pleasure, suggesting the possibility for cognition to exist separate from aesthetic feeling, which implies a divorce of knowledge from sensory perception through reason. Yet, Batteux abides to their unification and his innovation is a modern psychological approach to the study of his object.<sup>19</sup>

Batteux’s system of the fine arts was popularised by its incorporation into Diderot and d’Alembert’s *Encyclopédie*. With a specialisation of disciplines, the aim of the *Encyclopédie* was to collate and systematise *all* human knowledge—of all arts reducible to a system of knowledge with positive and invariable rules—and found in Batteux’s classification a useful distinction between the ‘practical’ arts and ‘speculative’ sciences, and between mechanical arts (defined by mechanical, routine operations) and liberal arts (including fine arts and having an intellectual demand and pleasure as its principal aim).<sup>20</sup> However the *Encyclopédie* eliminated shortly before its publication the category of *beautifying arts*, and its famous organising tree-diagram, the *Figurative System of Human Knowledge*, as well as d’Alembert’s *Preliminary Discourse to the Encyclopedia of Diderot* (1751) grouped architecture within the fine arts under the heading of ‘Imagination’, placed alongside music, painting, sculpture, and engraving.<sup>21</sup> Oblivious to this significant classificatory change and its intellectual implication, J. F. Blondel’s entries ‘Civil Architecture’—denoting architecture proper—and ‘Architect’ of 1751 remained technical, defining architecture as a practical art

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<sup>19</sup> Compare Manfred Schenker, ‘Charles Batteux und seine Nachahmungstheorie in Deutschland’, (unpublished doctoral thesis, Universität Bern, 1908), p. 40.

<sup>20</sup> Compare with Jean Le Rond d’Alembert, in *Preliminary Discourse* (1751), trans. by Richard Schwab in *Preliminary Discourse to the Encyclopedia of Diderot*, (Indianapolis: Bobbs-Merrill, 1963), p. 3.

<sup>21</sup> The *Prospectus* of the *Encyclopédie* (1750) still showed ‘civil architecture’ (with naval and military architecture) under the heading of ‘Reason’, grouped with *architecture pratique* under ‘Memory’ that also included *sculpture pratique*, *masson* and *couvreur*, which was closer to Batteux’s classification. Compare with Kevin Harrington, *Changing Ideas on Architecture in the Encyclopédie, 1750–1776* (Ann Arbor: UMI Research Press, 1981), pp. 1–40. The classification of the fine arts in the *Encyclopédie* is generally still in use today.

of necessity and construction, subdivided according to the functions of civil, military, and naval architecture.<sup>22</sup> This is surprising, as his grandfather F. Blondel in the *Cours d'architecture* (1675–83) outlined a modern system of the arts preceding Batteux and Diderot by grouping architecture with sculpture and painting.<sup>23</sup>

A few decades after Batteux, Johann Joachim Winckelmann (1717–1768) re-examined the relationship between nature and the arts. Unconcerned with classification, he read the arts and their history as a cultural discipline dependent on the relative context of society and climate. Credited with founding scientific archaeology, Winckelmann's conclusions, despite important agreements, considerably differed from Batteux's and derived not from a psychological but a historical and empirical attempt to define beauty. Like Batteux, he declared that the Greek style represents an unrivalled achievement of 'ideal beauty' (*idealische Schönheit*), but substantiated his claim through detailed studies of antique monuments in the *History of the Art of Antiquity* of 1764, the first comprehensive written history of art.<sup>24</sup> This history is, comparable to Le Roy's *The Ruins*, a study of historical, climatic, and socio-cultural relative influences and moments. But aiming to clarify criteria of beauty, it relates the work of art to a universal standard of aesthetic judgement. The ambition of the *History* to convey the systematic and scientific nature of art is framed by a new historicist and aesthetic analysis. By distinguishing stylistic features and artistic periods, it develops a periodisation of art history focussed on how styles develop with society.<sup>25</sup> The arts are not reduced to a study of nature—an eighteenth-century commonplace—but emerge as collective socio-cultural phenomena and driven by the creativity of individuals. Unlike Batteux's *la belle nature*, Winckelmann's notion of *ideal beauty* is not limited by verisimilitude but culturally conditioned.

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<sup>22</sup> 'Civil architecture' was defined in comparison to naval or military architecture, which appeared under the subheadings of 'Poetry', 'Profane' and 'Narrative'. Harrington in *Changing Ideas* argues that the choice of J. F. Blondel, who was selected before architecture was reclassified from the categories of 'Reason' to 'Imagination', was motivated by the editors wanting to balance the 'frivolities' of current Rococo thought and acknowledged the authority of the Académie. However, it seems that architecture was not of particular importance and specialisation to the editors in the beginning of the encyclopaedic project, as demonstrated by the choice of the amateur Louis de Jaucourt to write the entries.

<sup>23</sup> This is pointed out by W. Tatarkiewicz, who credits F. Blondel with the first modern system of the arts, 'A Note on the Modern System of the Arts', *Journal of the History of Ideas*, 24.3 (1963), p. 422.

<sup>24</sup> The argument was anticipated in Johann Joachim Winckelmann's first significant work, *Gedanken über die Nachahmung der griechischen Werke in der Malerei und Bildhauerkunst* (1755): 'The only way for us to become great or, if this is possible, inimitable, is to imitate the ancients. What someone once said of Homer—that to understand him well means to admire him—is also true for the art works of the ancients, especially the Greeks.' English translation: *Reflections on the Imitation of Greek Works in Painting and Sculpture*, trans. by Elfriede Heyer and Roger C. Norton (La Salle: Open Court, 1987), p. 5.

<sup>25</sup> Winckelmann was the first to develop a clear distinction between artistic periods and styles in art history, with focus on the classical Greek, Greco-Roman, and Roman periods: 'The history of art should inform us about the origin, growth, change, and fall of art, together with the various styles of peoples, periods, and artists, and should demonstrate this as far as possible by reference to the remaining works of antiquity.' Johann Joachim Winckelmann, 'Vorwort', *Geschichte der Kunst des Alterthums* (Dresden: Waltherische Hof-Buchhandlung, 1764). English translation: *History of the Art of Antiquity*, trans. by Harry Francis Mallgrave (Los Angeles: Getty Publications, 2006), p. 71.

To Winckelmann, beauty is a fabrication of the mind, an immaterial ideal and Platonic Form that, although inspired by nature, surpasses the realm of appearances. Beauty is an artistic perfection accomplished by generalising nature, with actual physical bodies only serving as preliminary subjects of study.<sup>26</sup> While Platonic beauty is an immutable and a priori truth, Winckelmann proposes that a work of art derives beauty from an expressed creative intention shaped by its cultural and historical context. Ideal beauty was achieved by the Greeks, as ‘their concept of beauty was not limited to the individual attributes of a single beauty [...] Rather, these artist sought to combine beauty from many beautiful bodies. They purified their images of all personal inclinations, which distract the mind from true beauty.’<sup>27</sup> However, Greek artists did not literally combine beautiful parts, but by observing and comprehending nature’s principles developed general ideas of beauty that surpassed her, ‘their model was an ideal nature originating in the mind alone’, which invested Greek masterpieces with ‘a noble simplicity and a quiet grandeur, both in posture and expression’.<sup>28</sup> This concept of ideal beauty was formed by individual artists, who contributed to a collective idea that is ‘experienced by the senses, but it is recognized and understood by reason’.<sup>29</sup> Despite partly liberating the arts from nature, Winckelmann maintains that man’s creativity spiritually aspires to become equal to, and is limited by, that of God. Creativity is the skill and sensitivity of the artist to recognise the ‘general idea’ of particular beauties, which individually would have imperfections. By uniting particular beauties in ideal beauties, the artist establishes conventions that imitate but do not copy nature. It is this supernatural and typical, the common-to-all, which was attained in ancient Greece. Imitation, Winckelmann therefore concludes, is tantamount to the imitation of the Greeks, which creates the paradox that their ‘inimitable’ example supposes that any later imitation forfeits its own originality.<sup>30</sup>

When Quatremère published in 1823 *An Essay on the Nature, the End, and the Means of Imitation in the Fine Art* (Essai sur la nature, le but et les moyens de l’imitation dans les beaux-arts), he too questioned the dependence of the arts on nature’s models.<sup>31</sup> With

<sup>26</sup> Similarly, Joshua Reynolds (1723–1792) believed that generalisation, the understanding of ‘abstract ideas’ and the elimination of the individual, would create universal truth and beauty.

<sup>27</sup> Winckelmann, *History of Art*, p. 198.

<sup>28</sup> The English translation is less explicit than the original German in stating the creation of archetypes through reason: ‘ihr Urbild war eine bloß im Verstande entworfene geistige Natur’. Winckelmann, *Reflections*, p. 15 and p. 33 respectively.

<sup>29</sup> Winckelmann, *History of Art*, p. 194.

<sup>30</sup> This is contradicted by Winckelmann’s own examples of Raphael and Michelangelo, who did not imitate the ancients directly and serve as ‘originals worthy of imitation and successful imitators of antecedent originals’, showing how an imitation is possible that is original without recourse to the ancients. Compare Michael Fried, ‘Antiquity Now: Reading Winckelmann on Imitation’, *October*, 37 (1986), 87–97 (p. 92).

<sup>31</sup> The *Essai sur la nature, le but et les moyens de l’imitation dans les beaux-arts* (Paris: Treuttel et Würtz, 1823) was reprinted in 1980 as *De l’imitation* (with an introduction by Léon Krier and Demetri Porphyrios) and trans. by J. C. Kent in *An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts* (London: Smith, Elder and Co., Cornhill, 1837). Kent’s translation was, as John Claudius Loudon claimed, on his request and ‘contains what appears to us by far the most satisfactory theory of the fine arts that has ever been published. [...] We conclude by recommending the *Essay on Imitation* to every architect who has any pretensions to being a thinking man, and to every man of taste who has a library.’ *The Architectural*

eighteenth-century discoveries in the life sciences unearthing ‘hyperreal’ functional structures, and with the arts increasingly interrogated from an empirical point of view, their imitative and metaphysical explanation had to be interrogated. Quatremère in response proposed an abstract imitation at once rational, syntactic, and metaphysical, returning to the arts a meaning lost with their surrender to individualistic and positivistic progress.

Divided into three parts, the *Essay on Imitation* defines a framework of ‘invariable rules’ and ‘fundamental principles’ as the backbone to Quatremère’s system of the arts, which he develops by detailing the ‘nature’, the definition and characteristics of imitation, the ‘ends’, the aims and criteria of imitation, and the ‘means’, the mechanisms to achieve imitation. Influenced by Winckelmann, Quatremère’s examination of the fine arts follows some key arguments but develops important differences. Quatremère shares with Winckelmann that the arts achieved their pinnacle in ancient Greece, especially the periods of Pericles and Alexander. He continues a Winckelmannian scientific art history and aim to understand the relevance of a historical past to the present, although this is perhaps more importantly influenced by Le Roy. He also agrees with Winckelmann’s view that nature only attains perfection in a supernatural ideal, a subordination of beauty to the ideal. The *Essay on Imitation* clarifies that this ideal occurs in universal and general form—a *typical*—, which arises in original inventions by artists and is exemplified by, but not restricted, to, the imitation of the ancients. He terms this imitation preliminarily as ‘ideal’, removing Winckelmann’s addition of ‘beauty’ to signify the ‘highest aim and central focus of art’.<sup>32</sup> Quatremère instead soon introduces the notion of ‘type’ to convey the incompleteness and generality underlying the abstraction in a principled yet open-ended process of invention. Employing the term ‘general’ synonymous to ‘simple’, he correlates it to Winckelmann’s ‘noble simplicity’ that connotes a desire to perfect beauty by purifying it of individuality. According to Quatremère, perfection is attained by a different kind of generalisation, one he believes fundamental to all human interaction and communicated through language. This propounds a concept of beauty severed from the physical reality of nature, whereas Winckelmann proposed a material and plastic concept of *ideal beauty* that still originated in nature.<sup>33</sup> The emphasis on conceptual thinking and generality is further evident in Quatremère’s disinterest in periodisation, the materiality of artifacts or their styles and forms, and prescriptive or proscriptive rules of design. Quatremère instead instrumentalises Winckelmann’s distinction between copying and imitating nature. While nature is to Winckelmann a precondition to imitation, she is still present in Quatremère’s imitative process but also always already deconstructed. To him imitation only exists as imagination

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*Magazine, and Journal of Improvement in Architecture, Building, and Furnishing, and in the Various Arts and Trades Connected Therewith*, vol. iv, (London: Longman, Orme, Brown, Green, & Longmans, 1837), pp. 43–44. Loudon further announced the essay in his *Gardner’s Magazine* and in December 1837 wrote a long review; see *Gardner’s Magazine*, vol. iii, n.s. (London: Longman, Brown, Green, and Longmans, 1837), pp. 597–600.

<sup>32</sup> Winckelmann, *History of Art*, p. 192.

<sup>33</sup> For Winckelmann’s ‘ideal beauty’ as predominantly a plastic idea of beauty, see Manuel Olguin in ‘The Theory of Ideal Beauty in Arteaga and Winckelmann’, *The Journal of Aesthetics and Art Criticism*, 8.1 (1949–50), 12–33.

and aesthetic judgement, with this abstract imitation establishing a general and ahistorical form unavailable to either productions by or copies of nature.<sup>34</sup> This defines the difference between type and model, highlighting the *artificiality* and *abstractness* of any work of art in its conception. Typal consideration expands the artistic scope, while Winckelmann's models of the Greeks establish a limiting norm.

Quatremère explains the differences in style and artistic achievement in relation to varying climates and cultures, but advances Winckelmann's historical and empirical approach, closely resembling Le Roy, into first a historicising and then an ahistorical perspective that understands the historicity and principles of artistic formation without restriction by chronology and style. However, Quatremère revisits the thesis that art is a reflection on social and cultural relative moments in time, adding that the productions of art and especially architecture are not just influenced by external conditions but, comparable to language, form social institutions and a social contract. Based on society's changing relation to art production, he restructures the system of the arts and claims that the artifact cannot be bound to preceding aesthetic categories. Whereas Winckelmann located artistic development in styles, Quatremère defines independent origins and development in *De l'architecture égyptienne*—and substitutes the concept of origins with ideal types.

In both cases a *type* was defined, simultaneously acting as the object of study and its framework for interpretation: for Winckelmann the idea of the sculpture, for Quatremère that of the monument, served as the evidence of intellectual and spiritual processes that, arising from the heart of social and cultural conditions, were to be found embodied, rather than copied or represented, in the work of art.<sup>35</sup>

Although monuments are to Winckelmann inferior to sculpture in their ability to attain the perfection of ideal beauty, he admits that architecture is more 'idealistic', as 'it could not be an imitation of something actual and, by necessity, had to be based on general rules and laws of proportion'.<sup>36</sup> Quatremère develops this argument by judging imitation not aesthetically but 'abstractedly, that is, under a general and theoretical, and not a limited and practical point of view': as a theory that 'generalizes ideas'.<sup>37</sup> By relocating imitation outside a traditional (art) historical debate in methodological and philosophical terms, the

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<sup>34</sup> The relationship between copy and imitation in Quatremère's work is problematic to Timothy Raser, as it seems afforded by a subjective aesthetic judgement based on categories of beauty; see 'The Fallacies of Imitation', *SubStance*, 14.1 (1985), 67–75. However, this ignores that according to Quatremère, imitation as a quality of abstraction and incompleteness is measurable without recourse to beauty.

<sup>35</sup> Vidler, 'The "Art" of History', p. 57.

<sup>36</sup> Winckelmann, *History of Art*, p. 190.

<sup>37</sup> Quatremère, *Essay on Imitation*, p. 172. The relation of Quatremère to Winckelmann is studied by Anthony Vidler in 'The "Art" of History' and his 'The Hut and the Body: The "Nature" of Architecture from Laugier to Quatremère de Quincy', *Lotus International*, 33 (1981), 102–11.

art disciplines with non-mimetic qualities—those based on language like architecture and rhetoric—become exemplary to Quatremère’s following redefinition.

Quatremère’s new concept of imitation in the *Essay on Imitation* develops from his thesis that: ‘To imitate in the fine arts, is to produce the resemblance of a thing, but in some other thing which becomes the image of it.’<sup>38</sup> By *image*, he means the ‘appearance of the object represented’, created by the artist in the sense of *poiesis*, implying a merging of art and technique, but differentiates between two kinds of resemblance.<sup>39</sup> The first is ‘identical resemblance’, a repetition similar to that in nature’s reproductions. Subscribing to the real, the image of *identical resemblance* is constrained by its models in nature and conditioned by a failure—like the classical Greek reproduction and impression of *mimema* or *eikon*—to preserve *all* the relationships of a particular instance. As a copy, it is by definition imperfect in comparison to its model and limited by the means of representation. However, as model and copy are conceptually indistinguishable, the observer experiences them as the same: as an identical repetition. This resemblance is comparable to Batteux’s imitation of *la belle nature* but, Quatremère posits, essentially non-imitative and deficient of the intention and intellection required by an *imitative displacement*, the transposition of a model into new artifacts and representations ‘that become the image of it’.<sup>40</sup> Failing to elicit ‘true’ (intellectual) pleasure it remains sensory.

Even though Quatremère upholds Batteux’s premise of imitation as ‘the bond that connects all the fine arts by one common principle’, he challenges its definition.<sup>41</sup> The ‘mechanical’ copy of *identical resemblance* has no artistic value, as its resemblance cannot capture the essence of Platonic Form, which is necessary to elevate imitation from the remits of *techné* and the deception of a feigned reality that Plato charges the arts with—a restriction of the arts that Quatremère wants to overcome.<sup>42</sup> Using the term *mechanical repetition*, Quatremère refers to the problematic value of technically produced works of art. Lacking an intellectual engagement, mechanical repetition is entirely defined by the processes of production. These artworks therefore experience a loss of ‘aura’ and ‘ritualistic value’, as Walter Benjamin argues in *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (1936). Benjamin however recognises that with waning elitism the possibility of democratic art emerges, with mass-production making a new cultural-political expression available to the work of art. While Quatremère would agree that art has social utility and is egalitarian, he believes that the arts are always already a political and

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<sup>38</sup> Quatremère, *Essay on Imitation*, p. 11.

<sup>39</sup> The importance of *poiesis* to the problem of mimesis in the arts, as taken up by Heidegger and Quatremère, is discussed by Georges Teyssot, ‘The Anxiety of Origin: Notes on Architectural Program’, *Perspecta*, 23 (1987), 92–107 (pp. 94–98).

<sup>40</sup> Quatremère, *Essay on Imitation*, p. 13.

<sup>41</sup> Quatremère, *Essay on Imitation*, p. 176.

<sup>42</sup> Quatremère, *Essay on Imitation*, p. 114.

collective expression.<sup>43</sup> Therefore, they do not have to forfeit their ideal value or elitism as Benjamin claimed, and their appreciation requires a knowledge and consciousness of the arts that is prevented by their politicisation. Therefore in contradistinction to Batteux's mimesis, Quatremère advocates an 'imitative resemblance' with an intellectual basis, a political foundation, and a historical dimension. While Batteux distinguishes between poetry and rhetoric, Quatremère develops an argument of 'poetical' imitation based on the structure of rhetoric. Language and in particular rhetoric represent to Quatremère an exemplary social effort to communicate abstract meaning through a continuously changing process of intellection and socialisation. He declares this process as the unifying *poetical* principle of the arts and elementary to their socio-cultural and political form. Artistic inventions become an authorial deconstruction and reaffirmation of accepted conventions, with *imitative resemblance* grounded in cultural and historical conventions but also containing the possibility to surpass them, when establishing a new basis of intellection. Thus, the work of the individual is important to collective conventions and intellection, and the processes of invention and eventual materialisation are rational. Imitation as a continuous reading, translating, and rewriting of the history of form, endows the arts with the conditional autonomy of rational artificiality and productness.

This reasoning re-appropriates the Platonic doctrine. According to Plato, the mimesis of a work of art is only a secondary representation of the world of appearances, a realm that itself only imitates the world of Ideas. The artwork thus twice removed from reality is never rational and cannot have knowledge of the Form itself but is corrupt and provides a false image of reality.<sup>44</sup> In contrast, *ideal Forms* are the a priori, transcendental, and ultimate reality of an object's (true) beauty and exist beyond the realm of appearances. They are the object of thorough knowledge (*epistémé*) and only attainable through rational reasoning. Quatremère claims however that the arts, epitomised by rhetoric and architecture, can overcome the limited knowledge defined by classical imitation theory. He reads Plato through Cicero, who outlines a compromise between Plato's absolute Idea and its interpretation by Aristotle as a mediating human consciousness, arguing that models are always compared to their common rules and ideal.<sup>45</sup> "Plato", Cicero proceeds, "gives to these primordial types the name of *ideas*. [...] they reside from all time in the reason and the understanding [...] It is, therefore, necessary to have recourse to the primary and original idea of the subject to be treated of."<sup>46</sup> This, Quatremère concludes, means that 'we must generalize' and *imitative resemblance* does not represent appearances but is an intellectual comparison of models in reality to an idea derived through typical reasoning, by which the arts obtain rational knowledge of ideal Form.<sup>47</sup> This Platonic but also Cartesian

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<sup>43</sup> On Quatremère's position on the political in the arts, see Lavin, 'The Institutions of Art', in *Quatremère*, pp. 158–65.

<sup>44</sup> Compare Plato, *The Republic*, trans. by Desmond Lee, 2nd edn (London: Penguin Classics, 2007), Part X (Book X), 601b.

<sup>45</sup> Compare with a survey of the notion of Idea in antiquity by Panofsky, *Idea*, pp. 11–32.

<sup>46</sup> Quatremère, *Essay on Imitation*, p. 278.

<sup>47</sup> Quatremère, *Essay on Imitation*, pp. 278–79.

mode of knowing through comparison is central to Quatremère's thesis of the arts.<sup>48</sup> Referring to Plato's concept of Form in the *Republic* as an Idea (*eidōs*) embodied by type, he transfers typical reasoning to the arts. 'The ideal form that Plato speaks of, is also employed by him as an object of comparison [...] he assures us that he had only portrayed it in idea, to serve as a more sensible *type* with which to confront his system of justice and virtue.'<sup>49</sup> Type represents the paradigm (*paradeigma*), pattern (image or likeness), and absolute standard, signifying the capacity to name and define the otherwise unknown in the world of appearances.<sup>50</sup> This knowledge, so Quatremère, is achieved by *imitative resemblance* as the translation of an idea into an abstract and engaging artifact. It 'compels us to see one object in another' and is always 'necessarily partial', but presents a general model that is 'produced with and by means of elements distinct from the elements of that object'.<sup>51</sup> For that reason imitation can produce abstract forms (of knowledge), while limited to the specific means of each art. Significantly, this production heightens reality by deliberately constructing a 'fictitious' (fictitious) image.<sup>52</sup> The hyper-real image is central to artistic invention, and eventually decoded by the observer. Poetic imitation thus is fictitious and has knowledge of an ideal, in the sense of Platonic *ideal Form*, by understanding form as generalising and generating types.<sup>53</sup>

The imitative process and signification is *poetical*: 'We may premise that poetry is nothing more than the art of transforming all objects by the manner in which they are represented, of transforming the ideas attached to those objects and even the elements of the language which expresses those ideas.'<sup>54</sup> Quatremère's notion of 'fictitious' conceptually differs from Batteux's of 'verisimilitude'.<sup>55</sup> Despite agreement that imitation involves a degree of artifice and signification, Batteux upholds a Platonic 'deception' by mimicking nature, while Quatremère seeks an 'illusion' of nature, recognising that 'the more such illusion deceives, the less it pleases' and 'in fact, the pleasure of illusion arises, more than we allow for, from

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<sup>48</sup> Writing on the importance of comparison, René Descartes states: 'in all reasoning, it is only by means of comparison that we recognize the truth precisely [...] it will be to the reader's advantage if [...] he conceives that all knowledge whatsoever—except for that which is obtained through the simple and pure intuition of a single, solitary thing—is obtained by means of a comparison between two or more things. In fact, the industry of human reason consists almost entirely in preparing this operation.' *Regulae ad directionem ingenii: Rules for the Direction of the Natural Intelligence* (Amsterdam: Rodopi, 1998), p. 179.

<sup>49</sup> Quatremère, *Essay on Imitation*, p. 279 [my italics].

<sup>50</sup> Plato states there is a 'single form for each set of particular things, to which we apply the same name'; in *The Republic*, Part X (Book X), 596a.

<sup>51</sup> Quatremère, *Essay on Imitation*, p. 21.

<sup>52</sup> This transformation of reality could be referred to as idealised and points towards a double signification of the ideal. On the one hand it is individual and formed by the artist, on the other, it is collective, derived from culture and conventions. See Richard Schiff, 'Representation, Copying, and the Technique of Originality', *New Literary History*, 15.2 (1984), 333–63.

<sup>53</sup> Compare with Quatremère, 'The Notion of the Ideal, as Entertained in this Theory, is in Accordance with that of the Writers of Antiquity', in *Essay on Imitation*, pp. 273–81. A reference is also made to this (in Part II, Chapter XII) on p. 351.

<sup>54</sup> Quatremère, *Essay on Imitation*, p. 360.

<sup>55</sup> Quatremère associates the 'identical similarity' of verisimilitude with 'counterfeit, mimicry, or parody', expressing his disapproval.

a sort of working of the mind by which itself finishes the work of art'.<sup>56</sup> In Foucault's terms, Batteux's imitation represents a similitude of 'emulation' and Quatremère one of 'analogy', granting it universality and 'sympathy', a transformation of qualities through signification.<sup>57</sup> Quatremère's fictitious illusion is a conceptual displacement of signification, closer to Winckelmann's notion of imitation, which offered the possibility to create 'another nature' by becoming 'something in its own right'.<sup>58</sup> As Quatremère states, it is not quite autonomous from but also more than just nature: 'there is no art, however inferior in many respects to its model, that is not able to defy, nay, even to surpass it in some one'.<sup>59</sup>

*Imitative resemblance* abstracts beyond the classical means of representation and nature, creating a conceptual ideal and suggesting that true imitation is motivated by a rational originality found in type.<sup>60</sup> 'In speaking of nature, we speak of an universal model; while in speaking of art, we notify only a partial image. In the theory of imitation what is termed a general law is that which results from the will of nature.'<sup>61</sup> This construes the will of nature as a 'mental image' and a typical reasoning.<sup>62</sup> Quatremère overturns the Platonic impossibility of imitation to obtain real knowledge by permitting it a knowing beyond the reimits of appearances and representation. The incompleteness and partiality of representation becomes desirable and the precondition to effectively transpose a typical idea into a typological model. Thus, the work of art is conceptually unconstrained by form, and *imitative resemblance* is incompatible with, and more than, representations of identity and difference. Its imitation is regulated by type as an analogical and 'organic' structure and, as Foucault classifies the emerging modern episteme: 'representation itself was to be paralleled, limited, circumscribed, mocked perhaps, but in any case regulated from the outside, by the enormous thrust of a freedom, a desire, or will, posited as the metaphysical converse of consciousness'.<sup>63</sup>

In accordance with two forms of resemblance, Quatremère discerns two kinds of pleasure: a perceptual pleasure, caused by mechanical repetition and invoking an inferior, instinctive, and limited pleasure, and a superior and inexhaustible moral pleasure, an intellectual

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<sup>56</sup> Quatremère, *Essay on Imitation*, p. 140–41.

<sup>57</sup> Compare with Foucault, 'The Four Similitudes', in *The Order of Things*, pp. 17–25.

<sup>58</sup> Compare with 'Gegen das eigene Denken setze ich das Nachmachen, nicht die Nachahmung. Unter jenem verstehe ich die knechtische Folge, in dieser aber kann das Nachgeahmte, wenn es mit Vernunft geführt wird, gleichsam eine andere Natur annehmen und etwas Eigenes werden.' Johann Joachim Winckelmann, 'Erinnerung über die Betrachtung der Werke der Kunst', in *Winckelmanns Werke: In einen Band*, ed. by Helmut Holtzhauer, 4th edn (Berlin and Weimar: Aufbau-Verlag, 1986), p. 39.

<sup>59</sup> Quatremère, *Essay on Imitation*, p. 113.

<sup>60</sup> The problematic relationship between originality, copy and imitation is examined by Richard Shiff, 'The Original, the Imitation, the Copy, and the Spontaneous Classic: Theory and Painting in Nineteenth-Century France', *Yale French Studies*, 66 (1984), 27–54, and 'Originality', in *Critical Terms for Art History*, ed. by Robert Nelson and Richard Shiff (Chicago: The University of Chicago Press, 2003), pp. 145–59.

<sup>61</sup> Quatremère, *Essay on Imitation*, p. 58.

<sup>62</sup> See David Summers use of 'mental image' as a work of art made by the mind that incorporates the problem of intentions and representation, 'Representation', in *Critical Terms for Art History*, p. 3.

<sup>63</sup> Foucault, *The Order of Things*, p. 209.

comprehension—moral denoting the opposite to ‘physical, material, sensual’.<sup>64</sup> With singular stimulation heightening the experience of pleasure, this is compromised when arts are combined, as one art has to make concessions to the means and effects of another. But all pleasures evoke some intellectual pleasure, as their cognition requires conscious or instinctive intellection through which physical forms are always comprehended as already abstract displacements of ‘moral ideas’, and physical sensations as ‘moral impressions’. From the distance between model and image, created by the artist and recognised by the observer, arises the principal pleasure and aim of imitation, which is gauged by abstraction that appeals to imagination and causes an intellectual comparison based on combination and apposition.<sup>65</sup> With the necessary engagement of the observer in the becoming of a work of art, Quatremère establishes a social relationship that privileges pleasure as a form of social exchange.

Abstraction as a phenomenon of distance is exemplified by poetical imitation. As poetry has no models in nature, it is furthest removed from sensible objects and their representation, instead relying on forms and structures borrowed from abstract ideas, relationships, events, or attributes, and operating at a metaphorical and allegorical level.<sup>66</sup> The poet recreates his subjects through re-composition, the ‘art of transforming or transposing’.<sup>67</sup> Re-composition is fundamental, with the artist’s primary task to ‘withdraw the objects and subjects that imitation has to do with, from the region of vulgar realities, and to elevate them into those of the ideal’.<sup>68</sup> Imitation, consequently, is conceptual and enacted by an exchange between artist and observer. This requires an essentially modern mode of representation through signs, emerging in the early seventeenth century, and can be considered diagrammatic: the ‘discourse represents not the object itself but the distance between the object and the mind *perceiving* and then *conceiving* it’.<sup>69</sup> To Quatremère the poetical process of signification and the dialectical structure of language define an artistic

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<sup>64</sup> Compare Quatremère, *Essay on Imitation*, pp. 183 and 244.

<sup>65</sup> ‘Those two operations which procure to the mind the true pleasure of imitation and also explain the cause of it, consist then on our side, the one in bringing the image to, and setting it by its model, the other in completing or in rendering imperceptible what is wanting to the entireness of the resemblance. Thence we see why the degree of merit of every imitative mode and of the pleasure peculiar to every art, may be estimated by the distance or difference separating its imitative elements from the elements of that portion of nature which constitutes its model.’ Quatremère, *Essay on Imitation*, pp. 159–60.

<sup>66</sup> Quatremère employs allegory as a ‘supplementary’ mechanism to address the lacuna existing through the lack of imitation; see Rodolphe El-Khoury, ‘In Visible Environments: Architecture and the Senses in Eighteenth-Century France’ (unpublished PhD thesis, Princeton University, 1996).

<sup>67</sup> Quatremère, *Essay on Imitation*, p. 366.

<sup>68</sup> Quatremère, *Essay on Imitation*, p. 358. As re-composition is inherent to poetry, it is of the highest rank (with music) in the imitative arts, followed by painting and sculpture, which remain directly imitative of nature through the reproduction of the body, and then by architecture and design and by dance and pantomime.

<sup>69</sup> Compare with Timothy Reiss on Galileo Galileo’s discourse of representation, in *The Discourse of Modernism* (Ithaca: Cornell university Press, 1982), p. 34; and Hyungmin Pai’s discussion of the diagram in *The Portfolio and the Diagram: Architecture, Discourse and Modernity in America* (Cambridge, MA: MIT Press, 2006), p. 163.

consciousness common to all arts.<sup>70</sup> Therefore, poetical abstraction is the unifying principle of the arts.

We see then clearly that the generalizing action is the same in the works of the arts of design, as in those of the arts of poetry. Without question it belongs to the same operation of the understanding to generalize forms as ideas, the images of bodies as the conceptions of the mind, the representation of material objects as the expression of thoughts and the relations of the moral world.<sup>71</sup>

The poetical frees the artist from nature and her representations, and affirms the supereminence of the conceptual over the perceptual, with an underlying typical abstraction making the conventions of language available to the arts. Conventions are another important foundation to Quatremère's system of the arts. They derive in parts from the specific means and ends of each art, but are significantly formed by moral faculty and the negotiations between reason, sentiment, and taste. As collective principles and rules, conventions guarantee a legible meaning of the work of art. Conventions are defined by an imitative unity, according to which the arts function and are measured. It is for the mind to recognise unity, 'but a limit is set to this faculty in the comparative distance or difference of objects; and it is for reason and taste to define that limit, since it is by the abuse of one or other of them, that those errors are committed'.<sup>72</sup> As conventions are established as concessions (normative rules) and licenses (temporary suspensions of these rules) that regulate the comprehension and comparison of the arts, they are indispensable to their pleasurable judgement, and the artist creates the illusion or effect of imitation within their limits. Conventions enable the artist to give 'to every passion its proper language, to every condition, to every age its habits, manners and mode of speech'.<sup>73</sup> Distinguishing between practical and theoretical conventions adjusted to the means and ends of each art, Quatremère introduces 'poetical conventions', which arise from sentiment and imagination.<sup>74</sup> Poetical conventions have the power to suspend customs and social habits and invent through a creative freedom that is undogmatic in either its form or content, instead producing 'another kind of truth'.<sup>75</sup>

As Quatremère posits, the relationship of artistic freedom and creativity to cultural progress is simultaneously independent and participatory, and conditioned by a voluntary social contract. A typical and imitative invention hereby 'increases the scope of our understanding, enriches our minds with new conceptions, and opens to our imaginations vistas without number, revealing prospects without a limit'.<sup>76</sup> This potential of typical abstraction arises also

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<sup>70</sup> Compare Quatremère, *Essay on Imitation*, p. 300.

<sup>71</sup> See Quatremère, *Essay on Imitation*, p. 322.

<sup>72</sup> Quatremère, *Essay on Imitation*, p. 62.

<sup>73</sup> Quatremère, *Essay on Imitation*, pp. 143–44.

<sup>74</sup> Compare Quatremère, *Essay on Imitation*, p. 302.

<sup>75</sup> Compare with Quatremère, *Essay on Imitation*, p. 305.

<sup>76</sup> Quatremère, *Essay on Imitation*, p. 192.

from an understanding of form through its historicity and in context of conventions, which collectively formed is specific to moments in history but also relative and continuously changing. Although a work of art thus could be said to obtain an ahistorical quality, the context remains significant to its value, and the artwork historical.<sup>77</sup> While this ahistorical quality results from a mental comparison of specific and conventional forms, by which typicality is defined, it establishes a connection between the past, present, and future, whereby this typical reasoning reflects on and forms the basis to productions of art and society.

Therefore 'to raise the mind to ideas of immortality by the sight of monuments; to embody and treasure up in expressive language, moral opinions, and religious sentiments: these were indeed true wants among civilized people; and to supply such would prove an end as advantageous to the imitation of the fine arts as to society'.<sup>78</sup> Culture as an interrelation of arts and society is of utmost importance to Quatremère, and the subject of the arts is the *public*. This 'necessity' of the arts, Quatremère already writes in *Destination of Works of Art* (1815), 'imply the natural and occasional connection between the arts and the principal wants of social man, rendering the form of society so dependent on them, that society must cease to exist if deprived of their assistance'.<sup>79</sup> Imitation therefore has a 'moral utility' and is 'not a plaything intended for public amusement, but a means to instruction for society'.<sup>80</sup> The inextricability of society and arts is expressed by collective conventions, whose socio-cultural dimensions make them receptive to change. Thus, when Quatremère speaks of an 'absolute' perfection or beauty in the *Essay on Imitation*, it is not in Winckelmann's terms as something immutable and reproducible but refers to an abstract idea.<sup>81</sup>

Batteux, like Winckelmann, saw perfect beauty as something discovered, however not in the past but in nature. Reason signified to him the elemental principle of imitation, with taste reconciling the subjective aesthetic pleasures of an artifact with the objective model of nature, which genius, a universal faculty of man to combine, *ought to represent*. While to Quatremère taste and its allies are important to imitation too, his use of genius is ambiguous, referring to it at times as a general faculty and at others as an individual artist.

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<sup>77</sup> This view is also evident in Quatremère's attitude to the museum and conservation. In *Lettres au général Miranda sur le préjudice qu'occasionnerait aux arts et à la science le déplacement des monuments de l'art de l'Italie* (1796), he argued against the Napoleonic spoliation of Italy, as the work of art would lose part of its value and meaning outside its original context. See Mari Lending, 'Negotiating Absence: Bernard Tschumi's new Acropolis Museum in Athens', *The Journal of Architecture*, 14.5 (2009), 567–89; and Katie Kirtland, 'A Glass Clouds in Post-Revolutionary France: Shifting Relationships of Art to its Public in the Work of Quatremère de Quincy', in *Culture & The State: Landscape & Ecology*, ed. by James Gifford and Zezulka-Mailloux (Edmonton: University of Alberta, 2003), pp. 209–31.

<sup>78</sup> Quatremère, *Essay on Imitation*, pp. 178–79.

<sup>79</sup> Quatremère, *Destination*, pp. 1–2.

<sup>80</sup> Quatremère *Destination*, pp. 11–12.

<sup>81</sup> Compare Quatremère, *Essay on Imitation*, pp. 279 and 329, with Winckelmann, to whom the Greek style is superior and an absolute convention of beauty: 'only a single concept of beauty that is the highest and always identical could be imagined, and because this concept was constantly present to those artists, their beauties always had to approach this image and become similar to one another and uniform'. In *History of Art*, p. 235.

This latter definition emerged with Diderot's concept of the genius as a gifted individual with supernatural powers of imagination and inventiveness, who through 'enthusiasm' becomes original but 'creates in the manner of nature'.<sup>82</sup> Similarly, Quatremère describes the genius as an artist who through systematic imitation and study of models in nature hones his ability to accomplish perfection through abstraction. However, he also uses genius in the sense of a 'moral faculty of man, whose characteristic is to *produce* and *invent*' an 'ideal reality'.<sup>83</sup> Quatremère's compromise has remarkable parallels with the concept of genius by Immanuel Kant (1724–1804) as an innate and non-transferrable originality that is principled like nature, however, does not follow scientific but artistic rules. Genius creates exemplary models that are metaphysical and beautiful and exhibit a deliberate artificiality that makes a work of art appear like nature without becoming deceitful.<sup>84</sup> This reasoning enables Kant to overcome the quandary that the beautiful art as a *reflective* aesthetic judgement cannot be based on concepts. Instead, he establishes alternative conventions for artistic productions in accordance with rules given by nature, which however 'must be abstracted from the fact, *i.e.* from the product, on which others may try their own talent by using it as a model, not to be *copied* but to be *imitated*'.<sup>85</sup> The required abstraction constitutes an intellectual act and points towards an ideal reality—a proposition reoccurring in Quatremère's theory.<sup>86</sup>

The necessary *re-composition* of reality by the genius, focuses the imitative object or subject according to artistic intentions: 'For the better explaining this re-composition, the operations of genius and understanding that allow of being apprehended, defined, and rendered sensible by theoretical analysis, may be reduced to two principle ones, namely, the *act of generalizing*, and *that of transforming or transposing*.'<sup>87</sup> Although to Quatremère imitation is a metaphysical science transgressing nature, its inventions are obligated to conventions, as 'it is forgotten that imitation is itself but a convention'.<sup>88</sup> Imitative generalisation and transposition is the achievement of the 'poetical genius', but depend on

<sup>82</sup> The concept of genius changed considerably during the eighteenth century in France. Batteux's use of genius as a faculty is aligned with its definition by Claude Adrien Helvétius and Condillac. It is Diderot in *Réfutation suivie de l'ouvrage d'Helvétius intitulé L'homme* (1774), who extends the ideas of Jean-Baptiste Dubos in *Reflexions critiques sur la Poesie et sur la Peinture* (1719) and introduces the genius as a unique individual. Compare Herbert Dieckmann, 'Diderot's Conception of Genius', *Journal of the History of Ideas*, 2.2 (1941), 151–82; and Kineret Jaffe, 'The Concept of Genius: Its Changing Role in Eighteenth-Century French Aesthetics', *Journal of the History of Ideas*, 41.4 (1980), 579–99.

<sup>83</sup> 'Theory', in *Quatremère's Historical Dictionary*, pp. 165–66.

<sup>84</sup> See Immanuel Kant, *Kritik der Urteilskraft* (Berlin: Lagarde & Friederich, 1790). English translation: *Critique of Judgment*, trans. by John Henry Bernard (London: Macmillan, 1914; repr. New York: Cosimo Classics, 2007), §46.

<sup>85</sup> Kant, *Judgment*, §47. Kant's use of the term *imitation* is contradictory, as in the same § he claims that genius is 'entirely opposed to the *spirit of imitation*', which in this instance denotes a quality of copying.

<sup>86</sup> For example: 'It is this imitation, the works of which are not the images of any object that can be called real, since it is formed by the study of the artist, and is manifested in his productions, by the aid of an aggregate of ideas, forms, relations, and perfections, that no reality could furnish united in a single being,—a single subject. Finally, it is this imitation which is conceived only in idea, and which is termed *ideal*.' Quatremère, *Essay on Imitation*, p. 208.

<sup>87</sup> Quatremère, *Essay on Imitation*, p. 306. Quatremère also calls the 'metaphysical science' the 'science of the operations of the mind' taking place within the domains of understanding and generalisation; see p. 321.

<sup>88</sup> Quatremère, *Essay on Imitation*, pp. 291–92.

the historical, allegorical, and symbolical mode of composition, or more precisely re-composition.<sup>89</sup> They are the particular means of style and form a specific artificial language to each art, which define the transformation of reality available to them. The ‘historical style’ of re-composition—with historical defined as opposite to ‘low, homely, or trifling subjects’—is the metaphorical transformation of *some* aspects of reality through reason and imagination.<sup>90</sup> Its minor transformation is ‘eloquent’ rather than poetical.<sup>91</sup> In contrast, the ‘allegorical style’ is a poetical abstraction and its subjects are either totally transformed, in an absolute metamorphosis that transposes the real into the conceptual, or are a partial transformation—overlapping with the historical style—that introduces ‘fictious or allegorical personages and their association with historical or real personages’.<sup>92</sup> Allegorical composition is both a perceptual and conceptual transformation substituting the real with the fictive or vice versa, and in complex subjects employs a hierarchical, systematic reduction to convey collective meaning. Finally, in the ‘symbolical style’, objects or persons are envisioned through conventional signs. The symbol acts as a substitute form of writing for the arts without natural expression or for subjects with limited explanation. Personages are treated like ‘hieroglyphic characters, purporting to speak to the mind through abbreviated signs of the images of objects’.<sup>93</sup> Symbols and hieroglyphs are a form of conventional signs and constitute an invented language and ‘emblematical writing’, which are only abstractly and poetically representational.

The significance of hieroglyphs and signs as primitive forms of writing was widely discussed within eighteenth-century etymology in relationship to philology and linguistics. With the connection of allegory and language a commonplace, the discourse centred on the social roots of languages, as propounded by Jean Jacques Rousseau in *Essai sur l'origine des langues* (1781), and a non-materialist interpretation of emblematic, symbolic, and allegorical expression in the study of history and the arts, as in Étienne Bonnot de Condillac’s *Essai sur l'origine des connaissances humaines* (1746).<sup>94</sup> The primitive expressions of hieroglyphs were associated with allegory by many etymological scholars, including Winckelmann. The sensationalist and mythical explanation, however, is not shared by Quatremère, whose reading of hieroglyphs is closer to Diderot’s by recognising a conventionalised relation between signifier and signified, which as a linguistic instrument codifies the arts and permits a conception of aesthetic norms.<sup>95</sup> *Hiéroglyphes* represented

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<sup>89</sup> Compare Quatremère, *Essay on Imitation*, p. 387.

<sup>90</sup> Compare Quatremère, *Essay on Imitation*, p. 389.

<sup>91</sup> Compare with Part III, Chapter X: ‘Of Transformation in the Historical Style of Composition’, in Quatremère, *Essay on Imitation*, pp. 388–92.

<sup>92</sup> Quatremère, *Essay on Imitation*, p. 398.

<sup>93</sup> Quatremère, *Essay on Imitation*, p. 422.

<sup>94</sup> Condillac owed to William Warburton’s *Divine Legation of Moses demonstrated on the Principles of a Religious Deist* (1737–41). Others preoccupied with the subject included Bernard de Montfaucon (*L’antiquité expliquée et représentée en figures*, 1719–24), Court de Gébelin (*Le Monde primitif, analysé et comparé avec le monde moderne*, 1777–96) and Viel de Saint-Maux (*Lettres*, 1779–87).

<sup>95</sup> Compare Anthony Vidler, ‘Symbolic Architecture: Viel de Saint-Maux and the Decipherment of Antiquity’ and ‘From the Hut to the Temple’, pp. 139–46, and pp. 147–64. Also, compare with Dieckmann, ‘Diderot’s

to Diderot the inventions of the genius as original and creative expressions that synthesise thoughts and images through an emblematic language.<sup>96</sup> Denoting an idealised image and the materialisation of a poetic idea, the hieroglyphic conflated artistic production with poetic writing. In Quatremère's *De l'architecture égyptienne* hieroglyphs are equally described as (a bas-relief) representing a concrete union between language and architecture (in Egypt), and he stresses the secular and social content of hieroglyphic form as a factual reality, opposing their traditional divine connotations and, by extension, that of the arts.<sup>97</sup>

The late eighteenth-century interest in the constitution of languages was closely linked to a search for knowledge formation that could be methodologically applied to analysis in all human sciences, and is evident in Quatremère's adaptation of linguistics and rhetoric to the study of the arts. He argues that the mode of reception and transformation of a work of art equates to language development and structure. The linguistic construction is explicit in *poetical imitation*, when symbolic form and emblematic writing becomes the framework to express abstract ideas through re-composition.<sup>98</sup> Originating from a primitive, natural state, the desire to express an increasingly complex level of abstraction and thought is a driving force of development in the arts and languages, eventually resulting in the abolition of representation and progressing language from onomatopoeic cries and verbal signs to distinct artificial sounds. Representation thus is superseded by conventions and social norms. The social conditioning of language is particularly discernible in the structure of writing and, as Quatremère notes in the *Dictionnaire d'architecture*, adumbrated by the Greeks, when their language and architecture consolidated abstract elements of character and formed an artificial 'alphabet' that retained its reflective properties.<sup>99</sup> This transformation attested to the inferiority of Egyptian hieroglyphic writing, as the Greek alphabetic and emblematic writing embodied and spatialised the essential grammatical functions and rhetorical figures of the arts in non-representational imitation.<sup>100</sup>

Writing therefore is essential to Quatremère's theory of the arts and instrumental to invention and its qualitative differences. Although the limited writing of hieroglyphs and

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Conception of Genius', 151–82 (p. 177). The relationship between etymology and Quatremère is further discussed by Lavin, 'Etymological Science', in *Quatremère*, pp. 76–85.

<sup>96</sup> Diderot in *Lettre sur les sourds et muets* of 1751 posits that representation in the arts is always hieroglyphic. The importance of hieroglyphs to Diderot's aesthetic theory is examined by Kenneth Berri, 'Diderot's Hieroglyphs', *SubStance*, 29.2 (2000), 68–93.

<sup>97</sup> 'With all their surfaces destined to receive inscriptions in symbolic characters, they must be regarded as enormous books always open for the education of the public [...] All [Egyptians] monuments were a form of public library; their ornaments were legends [...] These monuments were—utterly unmetaphorically—the depositories of the rites, dogmas, exploits, glory, in the end, of the philosophical or political history of the nation.' Quatremère, *De l'architecture égyptienne*, p. 59, trans. by Lavin in 'The Transformation of Type', in *Quatremère*, p. 93 [her add.].

<sup>98</sup> Compare Quatremère, *Essay on Imitation*, pp. 429–30.

<sup>99</sup> Compare with Lavin, 'The Characters of Classicism', in *Quatremère*, pp. 126–47 (pp. 146–47).

<sup>100</sup> Foucault argues that symbolic writing through its spatialisation of representation is bound to 'slip out of the forms of reflective thought' in comparison to alphabetical writing. In 'Derivation', in *The Order of Things*, pp. 110–15.

symbols could at first 'be exercised only in representing, by forms of the greatest simplicity, the most abstract and generalized ideas', it soon advanced into an emblematic writing that maintained 'somewhat of the non-imitative character and simplicity of their original type' but achieved an imitative resemblance through 'the principle of an abstract existence, of a nature very far removed from the principle of identity'.<sup>101</sup> Grammatical abstraction and typical reasoning provided to this development not only a general framework but also incorporated the specific situation, history, tradition, and development of sensible objects. Through this interrelation, art became the 'embodiment of man's highest intellectual achievement', and the attainment of knowledge as the intellectual project of the arts was first realised by a high degree of thought and judgement in classical Greece, even though to Quatremère the 'perfect artist was the summation of all the past virtues but modern in his understanding and perceptions'.<sup>102</sup>

With the arts construed as memetic, the social utility of the arts and the limits of their interiority and disciplinary knowledge become defining. Insisting that the autonomy of the arts is confined by a lack of singularity that their productness can achieve, they are constrained by 'the irreconcilable difference' between the model and means of imitation.<sup>103</sup> To negotiate these limitations and contradictions between generality and specificity, Quatremère introduces the structuring function of type.<sup>104</sup> Deconstructing the particularity of models, type operates in the domain of ideas, phenomena, and form, utilising a syntactic structure comparable to a universal grammar. Embodying and enacting the power of human reason, type is the agency replacing the moral and providing the possibility of invention.<sup>105</sup> Constituting a 'standard', a positive quality to be attained, rather than a convention or norm, type presents to the artist an interpretative yet consistent framework of judgement.<sup>106</sup> Demolishing an orthodox notion of imitation, the typical privileging of abstraction anticipates twentieth-century modern art theories.<sup>107</sup> Rooted in Diderot's critique of Batteux's doctrine of *la belle nature* in *Salon de 1767* and inspired by John Locke's conviction that artistic imitation seeks an abstract ideal removed from nature, abstraction is identified as the fundamental principle constituting a creative (artificial and intellectual) achievement. This thesis was shared by François-Jean de Chastellux, who under the rubric 'Ideal' (1778) in the *Encyclopédie* distinguished between 'imitative' and

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<sup>101</sup> Quatremère, *Essay on Imitation*, pp. 257–58.

<sup>102</sup> Joshua Charles Taylor, ed., 'Beauty and the Language of Form', in *Nineteenth-Century Theories of Art* (Berkeley: University of California Press, 1989), p. 84.

<sup>103</sup> Quatremère, *Essay on Imitation*, p. 29.

<sup>104</sup> Distinguishing his hyperreal concept of imitation from previous doctrines of natural representation, Quatremère's reiterative definitions—starting with 'imitative' and 'fictitious' resemblance, which becomes elaborated as 'moral', 'poetical', and 'ideal' imitation—culminate in the notion of *type* as the conceptual and analytical framework of the arts.

<sup>105</sup> On the role of the moral in the arts, compare with Quatremère, *The Destination of Works of Art*, trans. by Mr. Howard, R.A., as cited in the translator's note in Quatremère, *Essay on Imitation*, pp. 184–85.

<sup>106</sup> Compare Quatremère, *Essay on Imitation*, p. 333.

<sup>107</sup> In the reversal of the argument, Garry Hagberg posits that *mimesis* is a unitary concept that can apply to the understanding of modern abstract art; see 'Aristotle's "Mimesis" and Abstract Art', *Philosophy*, 59.229 (1984), 365–71.

'ideal' genres in the works of art, between those that copy nature and those that 'search for abstract and ideal beauty'.<sup>108</sup> Quatremère's own theory of imitation subsumes the aspirations of abstraction and generalisation, leading him to pronounce a 'type of perfection' and mental image against which material objects are judged—or 'primordial types' that embody the original and principal image or idea.<sup>109</sup> Through original types, the artist is able to resolve the dichotomy between an immaterial idea and a material presence.

Despite Quatremère repeatedly stating that 'by referring the individual instance to the original type, the ideal had its birth', acknowledging his appropriation of Platonic Form, a significant conceptual challenge takes place, as Plato and ancient philosophers considered the visual (material) and intelligible realms as incompatible.<sup>110</sup> It is through the diagrammatic, and therefore generalising, abstraction of type that an artist is able to speculate beyond the limitations of the physical world. This mediation amounts to a conflation of the material and conceptual realms represented by model and type and bridges the distance between Platonic Form and its representation as an intelligible knowledge and truth.<sup>111</sup> Type, by embodying the common-to-all, the underlying deep structure and generative principle but also the particularity of its possible forms, synthesises the ideal and the real, reconceptualising and eventually re-materialising the real through the ideal by considering the external *image* of resemblance as an internal *idea* that is imitated.<sup>112</sup> Representation has thus become displaced, as the image or 'the resemblant sign does not merely convey that which it resembles to the mind [...] rather it is that through which a meaning not defined by image relation may be apprehended. In that sense, the resemblant sign itself has become wordlike'.<sup>113</sup>

The synonymy of the terms 'image' and 'idea' (and 'ideal' as an adjective of *idea*) is, as Quatremère points out, apparent from its etymological roots, with *idea* deriving from the Greek *eidos* and *eidolon* denoting respectively a conceptual type or Platonic Form and a physical apparition.<sup>114</sup> The synonymy exists also in biology that refers 'every idea, as well as every particular image, to its generating principle, to its own peculiar type or genus'.<sup>115</sup> Type as a generator incorporates instances and manifold possibilities while maintaining a critical difference between a particular instance (of a species) and its generalised characteristic (of the genus). The variations and changes occurring within taxonomical

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<sup>108</sup> François-Jean de Chastellux, 'Ideal', in the *Encyclopédie*, ed. by Denis Diderot and Jean d'Alembert (Berne: 1778), xvii, pp. 148–58 (p. 149), as cited by Morgan in 'Concepts of Abstraction', p. 674.

<sup>109</sup> Compare Quatremère, *Essay on Imitation*, pp. 277–78.

<sup>110</sup> Quatremère, *Essay on Imitation*, p. 222.

<sup>111</sup> Geoffrey Broadbent derides Quatremère's "notion of 'Type' as 'a rather fuzzy version of Plato's ideal form'; *Emerging Concepts in Urban Space Design* (London: E & FN Spon, 1990), pp. 90–92.

<sup>112</sup> Quatremère, *Essay on Imitation*, p. 308.

<sup>113</sup> See Summers, 'Representation', in *Critical Terms for Art History*, p. 8.

<sup>114</sup> 'The words *idea* and *image* being synonymous, some metaphysicians have proposed to determine their variation, by applying the word *idea* to notions of intellectual objects, and the word *image* to those of corporeal objects.' Quatremère, *Essay on Imitation*, p. 212.

<sup>115</sup> Compare with Quatremère, *Essay on Imitation*, p. 329.

groups, in Quatremère's view, constitute not a reduction of individual cases to norms, as Durand suggests, but the potential of classification to abstract the common, and 'it is frequently necessary to regard the individual in its relation with the species, as the exception which only serves to confirm the rule.'<sup>116</sup> In support of his contention, Quatremère cites a biological analogy by Jean-Baptiste Say, who states: 'As concerns organized bodies [...] nature seems to despise the individual, and to have regard only to the species.'<sup>117</sup> The typological order implied by Say is reiterated in the *Essay on Imitation* and clearly expressed by the distinction of two kinds of imitation, one that considers the 'collective whole' of nature and another concerned with her details.<sup>118</sup> 'It is then a fact, and a philosophically evident one, that the idea of nature, in so far as it embraces generalities, corresponds with the idea attached to the genus, or species, and not with that of the individual. Thus art does not really take nature for its model, except when it considers and imitates it within the sphere of the properties constituting the being viewed generally, or taken collectively.'<sup>119</sup>

The recognition of a typological hierarchy leads Quatremère to reject the popular myth of Zeuxis quasi-empirical method when painting Helen's beauty. Her ideal and divine beauty allegedly derived from a composite of five different life models, however was not their realistic representation but idealisation.<sup>120</sup> This idealisation was a combinatory process, concurring with Aristotle's view of beauty as captured as an amalgamation of beautiful details in nature and united by the aesthetic judgement of the artist. It established perfect beauty as an a posteriori phenomenon and physical pre-selection. The interpretation of the ideal as a form of empirical selection was shared by Toussaint-Bernard Émeric-David (1755–1839) in *Recherches sur l'art statuaire, considéré chez les anciens et les modernes* (1805), who disregarded the fundamental problem how an artist could recognise the beauty of proportion. Quatremère vehemently refutes Émeric-David's position in the *Essai sur l'idéal dans ses applications pratiques aux œuvres de l'imitation propre des arts du dessin* (1837), which was written in 1805: 'We cannot then admit as really applicable to the practice of imitation any actual union of parts taken, that is, copied, from different individuals in order to compose one figure.'<sup>121</sup> Quatremère argues that the conception of a work of art takes place in an a priori ideation, which elevates the individual to a generalised ideal. With a priori ideation, the practical re-composition of individual parts only serves as an intermediary, 'subjected to the action of the understanding far more than to that of the senses and of practical execution', and eventually 'leads from the study of the individual to

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<sup>116</sup> Quatremère, *Essay on Imitation*, p. 228.

<sup>117</sup> Quatremère, *Essay on Imitation*, p. 228. The reference is given as M. Say, *Economie Politique*, vol. II., p. 142, referring to *Traité d'économie politique, ou simple exposition de la manière dont se forment, se distribuent, et se composent les richesses* (1803).

<sup>118</sup> Compare Quatremère, *Essay on Imitation*, pp. 246–47. Similar arguments are made on pp. 333, 351–52, 253, and 356–57.

<sup>119</sup> Quatremère, *Essay on Imitation*, pp. 246–47.

<sup>120</sup> Compare Sörbom, 'The Classical Concept of Mimesis', p. 25.

<sup>121</sup> Quatremère, *Essay on Imitation*, p. 348.

that of the genus, and from the expression of particular to the character of universal beauty'.<sup>122</sup> This universal beauty is a conceptual vision unachievable by procedural and combinatory composition.

The dispute between Émeric-David and Quatremère is evidently epistemological.<sup>123</sup> While Quatremère's argument is rooted in Neoplatonism, it more importantly relates to Kant's aesthetic philosophy—familiar to him from his time in exile in Germany from 1797 to 1799.<sup>124</sup> Kant in the *Critique of Judgment* (1790) articulated a compromise between metaphysical and empirical knowledge that re-emerges in Quatremère's proposition of the ideal as the abstraction of a general idea, which is given material reality by an exchange between the artist and observer. This clarifies the difference between Émeric-David and Quatremère's epistemology as the former seeking the ideal through empirical *selection* and knowledge, and the latter through a process of *generalisation*, an innateist and transcendental knowledge arising from a conceptual and diagrammatic reduction of normative experiences.<sup>125</sup> Quatremère's position is comparable to Kant's view of the ideal, positing that the arts reflect on an irreducible metaphysical and moral idea, which is partly embodied in its content and form, but equally depends on its reception by an audience.<sup>126</sup> To both, aesthetic pleasure is produced by the free stimulation of cognitive faculties, imagination, and understanding.

The similarity between Quatremère and Kant's art theories however goes beyond the concept of the ideal as an idea of autonomy.<sup>127</sup> Kant's aesthetic theory, developed in the

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<sup>122</sup> Quatremère, *Essay on Imitation*, pp. 351–52.

<sup>123</sup> The dispute between Émeric-David and Quatremère is widely discussed; for example by Helen T. Garrett, 'The Imitation of the Ideal: Polemic of a Dying Classicism', *PMLA*, 62.3 (1947), 735–44.

<sup>124</sup> Having been sentenced to death following his participation in the uprising of 13 Vendémiaire (5 October 1795) Quatremère fled to Tremsbüttel in Schleswig-Holstein, Germany. He stayed with the Kantian scholar Friedrich Heinrich Jacobi and became acquainted with German Idealism and aesthetics through the writings of Kant, Lessing, Johann Georg Sulzer and Christian Gottlob Heyne, and befriended Friedrich Leopold Graf zu Stolberg. Quatremère's library lists a French translation of Kant's *Observations on the Sublime and the Beautiful* (1764), and copies of the complete oeuvre by Jacobi and Lessing; see Fournel, *Bibliothèque de M. Quatremère*, p. 46 and pp. 3–4, 30–31, and 202. The influence of Kant and Lessing on Quatremère's theory, especially his concept of the ideal in opposition to Émeric-David, is discussed by James Henry Rubin, 'Allegory versus Narrative in Quatremère de Quincy', *The Journal of Aesthetics and Art Criticism*, 44.4 (1986), 383–92.

<sup>125</sup> Charles Cramer makes the distinction between innateism or empiricism as separating the classical and its means to acquire knowledge of the ideal. He suggests that the mid-eighteenth century produced a new kind of realising the ideal through generalisation or 'formal reduction', which is empirical, thus coined 'empirical Classical theory'. Aligned with Lockean abstraction, the key proponents of this theory are Reynolds, Diderot, Quatremère, and Hegel. See, 'Formal Reduction and the Empirical Ideal, 1750–1940: An Essay in the History of Ideas of Classicism' (unpublished PhD dissertation, The University of Texas at Austin, 1997).

<sup>126</sup> In respect to the fine arts, Kant understands ideality formed by an experience existing in the interplay of an 'aesthetic idea' and 'idea of reason', with its content deriving from: 'either a metaphysical idea or a moral idea or the even more fundamental idea of the ultimate relation between metaphysics and morality, and which might be present either explicitly in particular works of art or in some less direct way in the experience of art, rather than the objects of art themselves'. See Paul Guyer, 'Kant's Conception of Fine Art', *The Journal of Aesthetics and Art Criticism*, 52.3 (1994), 275–85 (p. 284).

<sup>127</sup> Emil Kaufmann in *Von Ledoux bis Le Corbusier* (1933) links Kant's concept of autonomy with Ledoux's architecture in the eighteenth century. Architectural autonomy becomes to him a measure of modernity.

*Critique of Judgment* through a discussion of aesthetic judgement and the analytic of the beautiful and sublime, speculates that judgements act as intermediary between understanding and reason by combining the ‘faculty of knowledge’, the ‘feeling of pleasure and pain’, and the ‘faculty of desire’. ‘Judgment’, containing an a priori principle, ‘in general is the faculty of thinking the particular as contained under the Universal’.<sup>128</sup> Judgement is either ‘determinant’, subsuming particulars under universal transcendental laws already known, or ‘reflective’, when these transcendental principles are internal and yet unknown. Quatremère correspondingly formulates a theory of type capable of containing and reasoning determinant and reflective judgements. The two possible reflective judgements, according to Kant, are teleological or aesthetic, with the latter further divided into judgements of the agreeable, beautiful, and sublime. Kant is particularly interested in reflective and transcendental judgements relating to the ‘purposiveness of nature’, which are not deducible from the object and, unlike the metaphysical non-empirical, only provide conceptually and a priori the conditions for possible empirical cognition. Thus for the understanding to cognise the relationship between genera and species through a reflective judgement based on empirical principles and experiences, it relies on the subjective, contingent, and a priori ‘law of the specification of nature’. At the same time, the homogeneity and harmony of this higher ordering constitutes an aesthetic judgement requiring the interplay of understanding and imagination, which causes the empirical representation of the ‘subjective formal purposiveness of the Object’ to be instantly perceived by the cognitive faculty as a feeling of pleasure.<sup>129</sup> Quatremère reasons for precisely the same requirement of twofold intellection to elicit pleasure. Understanding first results in an ordering and principled cognition through the abstraction of universals by the artist. This occurs as part of a typical reasoning that considers the *will of nature*—as Quatremère terms Kant’s ‘specification of nature’—although its productions are entirely original from models in nature. The typical abstraction then is translated by a secondary process of understanding, a comprehension and mental closure reciprocated by the observer, which results in moral pleasure.

Kant states that the cognition leading to pleasure is independent of any concepts and unmotivated by any desire. Rather conditioned by a judgement of taste, reflective judgements claim a universal validity—are considered valid to everyone—however are not pre-determinable but explored through experiments. Yet, Kant expounds that reflective judgement contains an a priori that is related to the concepts of the beautiful and sublime, and necessary for cognition, while remaining separate from aesthetic judgements based on taste. ‘Thus we can regard natural beauty as the presentation of the concept of the formal

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Thus, he argues that Ledoux was the first modern. Philip Johnson, Colin Rowe, and Aldo Rossi maintained this conceptual relationship between autonomy and modernism through formal abstraction in the mid-twentieth century. See Anthony Vidler, ‘The Ledoux Effect: Emil Kaufmann and the Claims of Kantian Autonomy’, *Perspecta*, 33 (2002), 16–29.

<sup>128</sup> Kant, ‘Introduction: IV. Of Judgment as a Faculty Legislating a Priori’, in *Critique of Judgment*, p. 11.

<sup>129</sup> Compare Kant, ‘Introduction’, in *Critique of Judgment*, pp. 5–26

(merely subjective) purposiveness', which is aesthetically judged by taste in respect to the feeling of pleasure.<sup>130</sup> The contradiction in Kant's aesthetic judgement of pleasure as a general and transcendental deduction results in vagueness and fails to justify the universality of aesthetic claims. Quatremère attempts to resolve this quandary by providing a specific process of metaphysical deduction that permits a conceptual and measureable reason for pleasure: abstraction and its (re)cognition.

The initial considerations of the *Critique of Judgment* are developed as four Moments in the 'Analytic of the Beautiful', and in the following 'Analytic of the Sublime' Kant discusses the aesthetic judgement in the arts by applying the principles of the Moments.<sup>131</sup> Art but not science can be considered beautiful, as it causes a *reflective* judgement rather than evoking sensations or empirical knowledge. However, it requires 'to determine exactly the difference between natural beauty, the judging of which requires only Taste, and artificial beauty, whose possibility (to which reference must be made in judging such an object) requires Genius'.<sup>132</sup> In the process of clarification, object representation functions as a conceptual representation and universal communication, with artistic representation emerging as a negotiation between artistic interpretation and a 'painful process of improvement' that seeks to retain conceptual coherence.<sup>133</sup> While the faculty of genius is central to Kant's notion of fine arts, it is closely related to an aesthetic idea:

In a word the aesthetical Idea is a representation of the Imagination associated with a given concept, which is bound up with such a multiplicity of partial representations in its free employment, that for it no expression marking a definite concept can be found; and such a representation, therefore, adds to a concept much ineffable thought, the feeling of which quickens the cognitive faculties, and with language, which is mere letter, binds up spirit also.<sup>134</sup>

Quatremère agrees with Kant's purposiveness of nature, the concept of an aesthetical object, and the centrality of a reflective judgement. He also shares a belief in the social agenda and communicability of the arts, based on which a claim to universal validity is possible. Quatremère's notion of *type* thus resembles Kant's *aesthetical Idea*, which he correspondingly defines by its incompleteness. But whereas the Kantian transcendental field only partially denies representation its transparency by initiating its displacement,

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<sup>130</sup> Kant, 'Introduction: VIII. Of the Logical Representation of the Purposiveness of Nature, in *Critique of Judgment*, p. 22. Aesthetic judgement is distinguished by Kant from a teleological judgement, which looks at 'Nature in its Technic (as organised bodies)' and whose natural purposes are the 'presentation of the concepts of a real (objective) purposiveness', that is according to concepts of understanding and reason.

<sup>131</sup> The four 'Moments' elaborate the judgement of beauty, aesthetic judgements and judgements of taste, the beautiful as purposive, and judgements of beauty as being of necessity. Compare Kant, 'Analytic of the Beautiful', in *Critique of Judgment*, pp. 27–60.

<sup>132</sup> Kant, *Critique of Judgment*, §48.

<sup>133</sup> Kant, *Critique of Judgment*, §48.

<sup>134</sup> Kant, *Critique of Judgment*, §49.

Quatremère's art theory provides a higher order and is concerned with a posteriori syntheses, whereby the conflation of the metaphysics of the object and positive knowledge provides a necessary structure for emerging empirical fields in which an internal analysis no longer suffices.<sup>135</sup> Establishing a metaphysical and empirical compromise through typical reasoning, Quatremère defines a different conceptual basis to reflective aesthetical judgements that obtain a motivation and criteria impossible in Kant's system. Yet, this does not contradict Kant's premise of aesthetics, but only resolves a paradox in Kant's antinomy of taste which, on the one hand, is free of concepts and undeterminable by proofs but, on the other, reliant on agreements established by taste that ultimately refer back to common concepts.<sup>136</sup> Quatremère's solution to the problem is to preserve the indeterminacy constitutive to an aesthetical object, while providing a basis of knowing and a specific disciplinary knowledge through typical imitation that transcends the limitations defined by the means and ends of the arts. The necessary removal of the 'natural' in Quatremère's reasoning, replaces *natura naturata* (nature as already created), which Kant partially upholds, with *natura naturans* (nature being created).

Imitation is a metaphysical invention that produces mental images of the whole according to the will of nature, but is completely abstract and principled.<sup>137</sup> The artist in this way realises the 'idea of the true, the beautiful, the befitting, and the perfect'.<sup>138</sup> The removal of nature marks a critical shift in the history of ideas towards a modern understanding of the capacity and content of the arts. Freed from the strictures of nature, man's creative powers are limitless, based on 'a type formed not on this or that isolated work of nature, but on the generality of the laws and motives manifested in the universal whole of her works'.<sup>139</sup> This instrumentality of generalisation was to Quatremère manifest in biology, which was of interest to him for its exemplary analytical method and its implied value for an

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<sup>135</sup> Foucault, discussing Kant's 'transcendental field' in comparison to 'transcendentals' (labour, life, and language), which 'totalize phenomena and express the *a priori* coherence of empirical multiplicities' and 'concern the domain of *a posteriori* truths and the principles of their synthesis', states that 'on the basis of criticism—or rather on the basis of this displacement of being in relation to representation, of which Kantian doctrine is the first philosophical statement—a fundamental correlation is established', the 'metaphysics of that never objectifiable depth from which objects rise up towards our superficial knowledge' and the 'observation of precisely that which is given to positive knowledge. [...] The criticism-positivism-metaphysics triangle of the object was constitutive of European thought from the beginning of the nineteenth century to Bergson. Such a structure is linked, in its archaeological possibility, to the emergence of those empirical fields of which mere internal analysis of representation can now no longer provide an account. It is thus correlative with a certain number of arrangements proper to the modern *episteme*.' In 'Objective Synthesis, in *The Order of Things*, pp. 244–45.

<sup>136</sup> Aware of the conflict in his system of aesthetics, Kant posits that 'the judgment of taste is based on a concept (viz. the concept of the general ground of the subjective purposiveness of nature of the Judgment); from which, however, nothing can be known and proved in respect of the Object, because it is in itself undeterminable and useless for knowledge. Yet at the same time and on that very account the judgment has validity for everyone (though of course for each only as a singular judgment immediately accompanying his intuition); because its determining ground lies perhaps in the concept of that which may be regarded as the supersensible substrate of humanity.' *Judgment*, §57.

<sup>137</sup> Quatremère, *Essay on Imitation*, p. 239.

<sup>138</sup> Quatremère, *Essay on Imitation*, p. 207.

<sup>139</sup> Quatremère, *Essay on Imitation*, p. 223.

understanding of social history. In the early nineteenth-century, the debate on evolution in natural history was seen as providing methodological clues to the study of the historical development of contemporary society. Accordingly, the famous dispute between the zoologists Cuvier and Étienne Geoffroy Saint-Hilaire in 1830 was not just of interest to a scientific audience.<sup>140</sup> Quatremère was aware of their debates and its social and cultural implications, the possibility of a non-aesthetic 'Darwinian' evolution in the arts caused by contextual differentiation and selection—a political and cultural selection—which is asserted by him in the concept of type.<sup>141</sup> As Quatremère incessantly repeats, type subsumes particulars under the general in a process that eventually materialises an originally immaterial idea. Through the internal order of type, the artist is able to recognise, understand, and complete its abstract form.<sup>142</sup> Type is therefore not natural but artificial, not visual but conceptual, not mimetic but memetic.

The *Essay on Imitation* was by some seen to add little to previous doctrines of imitation, as it maintained a close relationship of imitation to the concepts of ideal and beauty, and by forming arguments that were self-referential. However, employing traditional art terminology, Quatremère, unlike Batteux and Winckelmann, is not simply taking recourse to classical authority but fundamentally deconstructs and reconstructs the basis of the terms in order to redefine the meaning of disciplinary knowledge. By working within an established field of knowledge and with its existing terminology, Quatremère is able to define specialised knowledge and free the arts from a previously limiting literal imitation of nature. The arts, Quatremère insists, then are only constrained by their social utility. This significantly alters their historical dependence on identical representation and (ideal) beauty as the standard to judge aesthetics. Examining the role of the model and its represented image, Quatremère recognises that both are only intermediary to conceptual enquiries and result in a distinction between natural and personal expressions in a work of art.<sup>143</sup> Hereby,

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<sup>140</sup> Cuvier espoused that natural development is driven by function and takes place within four separate organisational 'plans', while Geoffroy insisted that it is morphological and all organisms share one single 'plan' and structure, exemplified in homology tracing a single, abstracted, and generalised organisation and ideal that is manifested in connections of parts rather than explained through their function. Quatremère's position seems somewhat ambiguous, as on the one hand he shares with Cuvier a strict typological separation and functionalism, with his three origins of architecture (tent, cave, and hut) similar to Cuvier's four *embranchements* (the vertebrate, articulate, mollusc, and radiate). On the other, he seems to agree with Geoffroy's transcendental philosophical approach. For details on the debate see Paula Young Lee, 'The meaning of Molluscs: Leonce Reynaud and the Cuvier-Geoffroy Debate of 1830, Paris', *The Journal of Architecture*, 3:3 (1998), 211–40. A copy of Cuvier's *Recherches sur les ossements fossiles de quadrupèdes* (1812) was listed in his library; see Fournel, *Bibliothèque de M. Quatremère*, p.19.

<sup>141</sup> Even though Darwin only published *On the Origin of Species* in 1859, the concept of evolution was already formulated by Jean-Baptiste Lamarck in the early nineteenth century and published in *Recherches sur l'organisation des corps vivants* (1802) and *Philosophie Zoologique* (1809). Darwin's influence on a non-aesthetic imitation in the arts is discussed by Margot Norris, 'Darwin, Nietzsche, Kafka, and the Problem of Mimesis', *Modern Language Notes*, 95.5, (1980), 1232–53.

<sup>142</sup> Quatremère, *Essay on Imitation*, p. 230.

<sup>143</sup> The modern distinctions between *natural* expression, *personal* expression and *pictorial* expression, is prepared by Quatremère, who envisioned a use of the model in the arts that goes beyond that of nature, entitling the artist to a free creativity in the production of a work of art. For a distinction of expressions see Richard Shiff, 'Expression: Natural, Personal, Pictorial', in *A Companion to Art Theory*, p. 170.

Quatremère suggests, intellectual pleasure emerges as the aim of the arts and provides new means to judge a work of art. A judgement partially speculative and based on abstract concepts of reality and truth, an artistic judgement that is taken for granted by twentieth-century art theory, as art remains no longer just within a domain to which a philosophical line of enquiry is applied to but inflects philosophy and its discourses.

Concerned with the relevance of criticism and aesthetics, Quatremère unexpectedly combines in his art theory a Neoclassical desire for universal reason and rules with a Romantic expressionism.<sup>144</sup> While his theory seems focussed on abstraction and systematisation, he is aware that artistic imitation and invention requires not just reason but must equally serve sentiment.

United in a due proportion with another faculty called *sentiment*, (organ more adapted for production and examination,) reasoning rectifies and corrects the operations of the mind, but is incapable of imparting to it either action or a creative virtue. The reasoning faculty is in its nature unproductive. Applied exclusively or without limitation to the direction of Art, reasoning destroys but does not rebuild; invents systems without regard to the consequences; discovers faults but does not point out beauties—it is the torch which illuminates, not the flame which vivifies.<sup>145</sup>

This aligns him, if cautiously, with a Romantic doctrine. And already in the *Destination of Works of Art* (1815) Quatremère states that the arts are neither uniform nor absolute in their effect but produced by imaginations, associations, recollections, and emotions: ‘For my part, I think, the more we accustom ourselves to appeal to sentiment in our enjoyment of Art, the more also we are sensible of the charm of all those appearances which cold reasoning scorns because it has no hold upon them.’<sup>146</sup> While these arguments for expression are suppressed in the *Essay on Imitation*, as Quatremère sees sentiment as exempt from rational analysis and associated with taste, thus distracting to the aim of the essay to construct a rational art system, he acknowledges that the ultimate purpose of imitation has to be ‘the system of the ideal. This system, which sentiment had employed long before reason had essayed to analyse it.’<sup>147</sup>

Quatremère in the *Essay on Imitation* propounds that the arts have clearly defined limits and standards but also a responsibility to transform norms. Questioning the classical claim to the absolute, he argues for ‘total’ artistic freedom. Not in a modern sense, which equates

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<sup>144</sup> Despite this anti-Romantic stance, Quatremère proposes that imitation is rationally expressive, with the necessity to artistically express and ‘generalize forms as ideas’ being analogous to the expressive function of language; see Quatremère, *Essay on Imitation*, p. 323 and compare to p. 217.

<sup>145</sup> Quatremère, *Destination*, pp. 45–46.

<sup>146</sup> Quatremère, *Destination*, pp. 108–09.

<sup>147</sup> Quatremère, *Essay on Imitation*, p. 254.

artistic authenticity with an individual and autonomous self-expression as affirming originality, but in the sense that artistic invention is autonomous in expression, as long as it provides social utility.<sup>148</sup> Like a universal grammar, typical imitation is syntactic and changes, which Quatremère does not understand as positivist progression but constituting a critical form of engagement that in a Kantian sense defines the limits of knowledge, its finitude, yet also is the condition of, and possibility to, obtain new knowledge. Type and its reasoning neither promises progress nor regress to past solutions, but offer differential change: a change that is socially, culturally, and historically motivated and specific.

### 3.2 THE ARCHITECTURAL SYSTEM

The systematising of the arts in the *Essay on Imitation* was closely linked to Quatremère's aim to formulate a comprehensive architectural theory in the *Encyclopédie méthodique: Architecture*. With the system of the arts and sciences still in a continuous process of transformation, the publisher Charles-Joseph Panckoucke obtained in 1780 a license to republish Diderot and d'Alembert's *Encyclopédie*. His ambitious plan was to 'methodically' reorganise the *Encyclopédie* by subject matter and improve its usefulness to readers. The renamed *Encyclopédie méthodique ou par ordre de matières* (1782–1832) thus separated different disciplines into individual dictionaries, whereas the *Encyclopédie* contained all entries under one single alphabetical order. This required the rearrangement of existing material and an extensive compilation of new dictionaries for disciplines that were not sufficiently considered previously.<sup>149</sup> Panckoucke, impressed by Quatremère's rising public profile after winning the Prix Caylus and an appeal to retain the Fontaine des Innocents, despite his limited academic and professional credentials appointed him in 1787 as the editor of a new architectural dictionary.<sup>150</sup> The dictionary was to satisfy Panckoucke's grand aspirations but also serve a fast growing market of architectural publications increasingly read by the public.<sup>151</sup>

The publication history of the *Encyclopédie méthodique* was greatly complicated by the ongoing restructuring of academic and scientific disciplines and delayed by the events of the

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<sup>148</sup> The problem of originality is examined by Shiff, 'Originality', in *Critical Terms for Art History*, pp. 145–59; 'The Original, the Imitation, the Copy, and the Spontaneous Classic', pp. 27–54; and 'Representation, Copying, and the Technique of Originality', pp. 333–63.

<sup>149</sup> Instead of reordering and subdividing the existing thirty-five volumes of the *Encyclopédie* into respective dictionaries, Panckoucke commissioned numerous new ones, resulting in an encyclopaedic project with 26 individual dictionaries and 166 volumes published over a period of fifty years from 1782 to 1832.

<sup>150</sup> The connection between the Prix Caylus and the commission is commonly made by Quatremère's biographers, including Lavin in *Quatremère*, p. 6. Rowlands in 'The Formative Years' adds that the letter in the *Journal de Paris* in 1787 increased his reputation as a writer and made him known as a political activist in support of the arts. Panckoucke also commissioned Jacques Lacombe to write the volumes for the section on the *Arts et métiers mécaniques*.

<sup>151</sup> In the 1780s in France, nearly 160 publications on architecture appeared, indicating an expanding interest in the subject of architecture by academics, man of letter, amateurs, and especially the public; see Bilodeau, 'Precedents and Design Thinking', p. 65.

French Revolution.<sup>152</sup> Quatremère's *Encyclopédie méthodique: Architecture*, commonly referred to as *Dictionnaire d'architecture*, suffered the same fate. The first volume was published in 1788, the second volume after the French Revolution in two parts in 1801 and 1820, and the third volume only printed in 1825.<sup>153</sup> During the thirty-seven years of gestation, a significant shift in Quatremère architectural theory occurred, particularly apparent when comparing the early entry 'Character' (1788, I) with the late rubric 'Type' (1825, III). This maturing of his theory began with the reversal of the conclusions of the *Mémoire* (1785) in *De l'architecture égyptienne* (1803), but did not come to full fruition until the *Essay on Imitation* of 1823, shortly published before the third volume of the *Dictionnaire d'architecture* in 1825.<sup>154</sup> In the *Essay on Imitation* Quatremère completed his system of the arts and for the first time posited type as central to a defining abstraction in the arts. He subsequently introduced his argument to architecture and clarified the complementarity of history and theory, which he considered embodied in the functions of type.<sup>155</sup> His thoughts culminated two years later in the entry of 'Type' in the *Dictionnaire d'architecture* and led to a revision of his former architectural theory. Assisted by Jean-Baptiste Rondelet (1743–1829), his first architectural dictionary was 'corrected' in the concise *Historical Dictionary of Architecture, containing in its Outline Notions of Historical, Descriptive, Archaeological, Biographical, Theoretical, and Practical Teaching of this Art* (*Dictionnaire historique d'architecture, contenant dans son plan les notions historiques, descriptives, archéologiques, biographiques, théoriques, didactiques et pratiques de cet art*) of 1832, which largely eliminated references to the problem of origins and underscored type as an abstraction that could be appropriated by practice.

The *Historical Dictionary* conveys Quatremère's advanced architectural theory, which developed during the critical period of change at the turn of the nineteenth century. The involvement of Rondelet, a widely respected engineer and expert in matters of construction is revealing, and the changes to the *Historical Dictionary* suggests a shift of Quatremère's architectural theory from a predominantly metaphysical to a comprehensive theory encompassing metaphysical, didactic, and practical concerns and diminishing the differences between didactic and aesthetic reasoning.<sup>156</sup> Quatremère in his entry 'Theory'

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<sup>152</sup> The historical publication circumstances of the *Encyclopédie méthodique* are recounted by George B. Watts, 'The Encyclopedie Methodique', *PMLA*, 73.4 (1958), 348–66.

<sup>153</sup> The first volume of the *Dictionnaire d'Architecture* covered the articles 'Abajour' to 'Coloris de Fleurs', the second volume published in two parts included "Colossal" to 'Escalier' and 'Escalier' to 'Mutules', and the third volume the entries 'Nacelle' to 'Zotheca'. Jean-Baptiste Rondelet, who acted as the Inspecteur de construction during the conversion of the Panthéon, but also others including Jean-Nicolas Huyot and Antoine Laurent Castellan, wrote the technical and specialised entries in the dictionary.

<sup>154</sup> Quatremère's mature architectural theory was influenced by his teachings at the Académie des Beaux-Arts, with a collection of his lectures published in the *Essai sur l'idéal* (1837) and *Essay on Imitation* (1823).

<sup>155</sup> The relationship between the arts and architecture and a distinction between history and theory motivated Quatremère to reform the École des Beaux-Arts. He merged the departments of architecture with sculpture and painting, introducing the first organised and formal system of an architectural education with separate studies in history and theory in 1818.

<sup>156</sup> The view that Quatremère was no longer satisfied with his earlier theory of the first dictionary is supported by Rowlands, 'The Formative Years', p. 58.

in fact distinguishes between three general kinds of theory and different forms of teaching. First, a 'practical theory' of instruction for the practice and execution of architecture, based on learning by copying conventional, precedent models. This he associates with the art of building and construction. Second, a 'didactic theory' formally taught through schools or by masters, which reassesses precedent models and systematises architecture by establishing laws, rules, and precepts.<sup>157</sup> And third, a 'metaphysical theory' of principles comprising a 'rational system of architecture' that underlies didactic theory, with its spiritual, intellectual, and reasoned nature constituting a 'higher learning' and architecture's imitative system of abstraction, which provides the grounds for invention.<sup>158</sup>

Unity and variety, propounds Quatremère, are essential for architecture as an imitative art. Through unity, architecture emulates the process of intellection and the relationship between different elements of a building are clarified and made legible.<sup>159</sup> Unity authorises a clear distinction between systems, principles, conceptions, compositions, plans, decorations, tastes, and styles, while maintaining their coherence and permitting their judgement. Subservient to unity, variety prevents uniformity or a violation of unity and 'produces an infinity of dissimilarities based on the same type'.<sup>160</sup> Unity and variety are universal principles of architecture's metaphysical theory and articulated within culturally, climatically, and constructional specific systems of architecture.<sup>161</sup> These systems unite the part with the whole in accordance with the principles of imitation, operating 'by way of analogy rather than similitude' and forming a 'general and fundamental truth'.<sup>162</sup> Hereby, architectural principles combine the useful with the agreeable and pleasurable, and become conventionalised rules of an emerging system of architecture. Rules are informed by few immutable principles 'grounded in unity and universality', but create innumerable variations and particularity in application.<sup>163</sup> 'Depending on time, place and circumstance, necessity and propriety require many modifications, which one calls exceptions or licenses', and result in a continuously adapting set of rules.<sup>164</sup> Rules subdivide architecture into four classes according to principles of reason, sensations, precedents, custom and example, and habit and routine.<sup>165</sup> Nevertheless, Quatremère cautions, rules are only variables of principles that are not to be copied unchallenged. They are commonly produced by conventions and collectively accepted 'adjustments' that mediate between the intention of the artist, the work of art, its precedent models, and finally the observer and society. As art is necessarily incomplete—with the *Essay on Imitation* arguing that this is

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<sup>157</sup> 'Theory', in *Quatremère's Historical Dictionary*, pp. 249–50 (p. 250).

<sup>158</sup> 'Theory', in *Quatremère's Historical Dictionary*, p. 250.

<sup>159</sup> 'Unity', in *Quatremère's Historical Dictionary*, pp. 259–66 (p. 259).

<sup>160</sup> 'Variety', in *Quatremère's Historical Dictionary*, pp. 266–68 (p. 267).

<sup>161</sup> An early and 'original' example of a system of architecture, according to Quatremère, is Vitruvius's *Ten Books on Architecture*.

<sup>162</sup> Compare 'Principle' and 'System', in *Quatremère's Historical Dictionary*, pp. 208–09 and 246–47.

<sup>163</sup> 'Rule', in *Quatremère's Historical Dictionary*, pp. 222–27 (p. 222).

<sup>164</sup> 'Rule', in *Quatremère's Historical Dictionary*, p. 223.

<sup>165</sup> Compare with 'Rule', in *Quatremère's Historical Dictionary*, p. 227.

the precondition of aesthetic pleasure—conventions are shared artistic and cultural values, ensuring the communicability of art. Conventions are concerned with both judgement and taste, and above all preserve propriety according to the means of the arts. They prescribe rules of order, harmony, and proportion, as well as of construction, composition, representation, and ornamentation. If conventions become dogmatic, when the conventional is abused and excessively applied, they however solidify into a dead ‘style of *convention*, or a form of *convention*’.<sup>166</sup>

Quatremère’s art theory is general, an all-encompassing metaphysical theory, and specific, detailing an instructive theory, especially for architecture in the dictionaries.<sup>167</sup> The theory reframes epistemological problems of invention by defining an alternative methodology of imitation and by challenging representation. Based on this metaphysical theory, didactic rules and conventions can confront the existing disciplinary boundaries of architecture. Refuting the *philosophes*, Quatremère maintains the neoplatonic view that true knowledge is non-material, abstract, and universal but not absolute—and independent from and above sensory knowledge. Echoing the *Essay on Imitation*, Quatremère’s entry ‘Imitation’ in the *Historical Dictionary* restates his doctrine that ‘one imitates nature by making as she makes, that is, not by repeating her work properly speaking, but by appropriating the principles that served as a rule for this work, in other words, her spirit, her intentions and her laws’.<sup>168</sup> The architect, for example, employs a system of proportions to establish a correlation between the parts and the whole through either physical or visual means. This is expressed as *symetria*, the singularity and coherence of the general motif informing a building through its character.<sup>169</sup> The essential process of abstraction constitutes the imitative and pleasurable potential of architecture and the so gained imitative qualities of architecture in turn form the basis to Quatremère’s ‘metaphysical theory’. Establishing architecture as an art of imitation is fundamental to his theory. While an imitative architecture, despite its rejection by Batteux, was as such unexceptional and familiar since Alberti, Quatremère succeeds in integrating architecture permanently with the liberal arts by rethinking imitation as abstraction.<sup>170</sup> An imitative architecture permits Quatremère to

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<sup>166</sup> Compare ‘Convention’ and ‘Conventional’, in *Quatremère’s Historical Dictionary*, pp. 122–25.

<sup>167</sup> Even though architecture is only fleetingly dealt with in the *Essay on Imitation*, its theory was at the same time developed by Quatremère in other writings such as the dictionary.

<sup>168</sup> ‘Imitation’, in *Quatremère’s Historical Dictionary*, pp. 175–78 (p. 176). Similarly Quatremère writes: ‘Architecture imitated nature not by doing what she does, but as she does.’ In ‘Antique’, in *Quatremère’s Historical Dictionary*, pp. 62–70 (p. 67).

<sup>169</sup> Compare with ‘Harmony’ and ‘Proportion’, in *Quatremère’s Historical Dictionary*, pp. 168–71 and 209–14.

<sup>170</sup> The principle of architecture’s imitation of nature is acknowledged by Leon Battista Alberti: ‘All that has been said our ancestors learned through observation [imitation] of Nature herself [...] Following Nature’s own example, they also invented three different ways of ornamenting a house, their names taken from the nations who favored one above the others, or even invented each, as it is said. One kind was fuller, more practical and enduring: this they called Doric. Another was slender and full of charm: this they named Corinthian. The one that lay in between, as though composed of both, they called the Ionic.’ In *De re aedificatoria* (Florence: Nicolaus Laurentii, 1485). English translation: *On the Art of Building in Ten Books*, trans. by Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge, MA: The MIT Press, 1988), ‘Book Nine: Ornament to Private Buildings’, chapter 5, p. 303

apply the syntactic analysis available to the fine arts and establish architecture as a discipline of 'intellectual or a spiritual activity which reasons and combines'.<sup>171</sup> Therefore the problem of a single origin is superseded by multiple and independent origins, and the commonalities and differences in development or imitation are conceptualised through the filiation of a universal grammar.

To consider nature in the universality of her laws suggests that her *imitation* belongs to all the arts. Consequently, there are rules for imitation to which each art is subject, if not in the same manner, then at least to the same degree. Similarly, there is a universal grammar common to all languages, and a grammar which is particular to every dialect.<sup>172</sup>

The aim of the *Dictionnaire d'architecture* is to define an 'architectural system' and, at its publication, it was the most exhaustive and systematic dictionary, if not theory of architecture, in French.<sup>173</sup> The format of the dictionary suits Quatremère for several reasons. He shares an encyclopaedic interest in social sciences and belief that the encyclopaedia empowered the public to gain knowledge of specialised fields. The public is his ultimate target audience, with the intentions of the *Dictionnaire d'architecture* expressly stated to 'satisfy all classes of readers by embracing the universality of knowledge comprised by the subject'.<sup>174</sup> This is consistent with Quatremère's political activism to democratise the arts and reform their institutions, an ambition he outlined in the *Considérations sur les arts du dessin en France, suivies d'un plan d'Académie ou d'Ecole Publique et d'un système d'encouragement* (1791).<sup>175</sup> In addition, a treatise in the form of a

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<sup>171</sup> 'Theory', in *Quatremère's Historical Dictionary*, p. 249.

<sup>172</sup> 'Imitation', in *Quatremère's Historical Dictionary*, p. 175. This confirms the didactic intent of the *Historical Dictionary*, as in the corresponding entry in the preceding *Dictionnaire d'architecture*, Quatremère more explicitly emphasises the relationship between social conditions and architectural differentiation that emerges from the analogy of universal grammar; compare with 'Imitation' in Hinchcliffe, 'Extracts from the Encyclopédie', p. 37.

<sup>173</sup> Before the *Dictionnaire d'architecture*, a number of French writings included architectural dictionaries, but none with the same rigour and extent. These included André Félibien's *Des principes de l'architecture, de la sculpture, de la peinture et des autres arts qui en dependent. Avec un dictionnaire des termes propres à chacun de ces arts* (1676), Charles d'Aviler's *Cours d'architecture* (1691), Thomas Corneille's *Dictionnaire des arts et des sciences* (1694), Jean-Louis de Cordemoy's *Nouveau traité de toute architecture with the Dictionnaire de tous les termes d'architecture dont on s'est servi dans ce traité* (1714), Amédée-François Frézier's *La théorie et la pratique de la coupe des pierres et des bois pour la construction des voûtes* (1737–39), Jacques-François Blondel's entries on architecture in Diderot's *Encyclopédie* (1751–80), and Charles-François Roland de Virlois' *Dictionnaire d'architecture civile, militaire et navale, antique, ancienne et moderne* (1770). See Younés, 'Introduction', *Quatremère's Historical Dictionary*, pp. 10–11.

<sup>174</sup> Quatremère in the introduction to the first volume of the *Dictionnaire d'architecture*, as quoted by Anthony Vidler in 'Quatremère de Quincy: Type', *Oppositions*, 8 (1977), Paris under the Academy: City and Ideology, 148–50.

<sup>175</sup> Quatremère's political lobbying since 1789 and the *Considérations sur les arts* greatly influenced the constitution of new art institutions in France. He supported the reform of the Académie royale de peinture et de sculpture in order to change the honorary society into a learned society with the task of public instruction and education. He also proposed a reform of the biennial Salon and the competition system, providing egalitarian and competitive access. His efforts coincided with those by his friend Jacques-Louis David, who initiated the *Commune des arts* with the aim to republicanise the Académie. Quatremère in the

dictionary also stresses Quatremère's conviction that systems of knowledge ought to be rational and unambiguous and contribute to disciplinary clarification. And, the encyclopaedia conveys the importance given to language in the formation of ideas and the systematisation of knowledge through acts of naming, defining, and comparing. These encyclopaedic associations with rigorous classification and systematisation according to the order and public nature of language, greatly influence Quatremère's architectural theory but also the *Essay on Imitation*.<sup>176</sup> His structural conflation of language and architecture formalise a late eighteenth-century idea of architecture as a social expression and consolidate architecture's existing forms of knowledge by schematising a metaphysical and didactic theory that dominated the Académie in the early nineteenth century.<sup>177</sup>

'Architecture', writes Quatremère, 'is a language whose signs are either natural and tangible, or conventional; but these signs lose their proper meaning as soon as practice not only permits but also operates and thus mandates their confusion'.<sup>178</sup> Conventions are, for that reason, intimately related to the Vitruvian notion of *decorum*, denoting that which is convenient—might become a convention—and require that a work be fit for purpose. Conventions describe the limits that are simultaneously confirmed and challenged by a work of art. Yet, Quatremère does not use *decorum* but distinguishes between 'aptness', which implies moral and social observance, and 'propriety', the observance of an inherited practice of architecture within customs and manners. Together they express *convenance*, the suitability and appropriateness according to an established practice conventionalised in

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*Considérations sur les arts* proposed a new educational system for artist that would foster the communication between the arts and integrate their theory (study of history, ancient culture, optics and perspective, anatomy, mathematics and geometry) and practice (study of nature, the antique, ornament, architecture and construction). However, Quatremère himself did not always adhere to his own demands. As the Commissaire of the Panthéon, he not only planned the conversion and designed the sculptural programme, but also commissioned a small coterie of artists. This caused a controversy, as it contradicted the public accountability and involvement described in the *Considérations sur les arts*. See Rowlands, 'The Formative Years', in particular pp. 60–137; Luke, 'The Politics of Participation', pp. 15–43; and Lavin's 'The Institutions of Art', in *Quatremère*, pp. 158–65.

<sup>176</sup> For the influence of the dictionary on the development of the idea of the public sphere in architectural theory in general and the *Dictionnaire d'architecture* especially, see Sylvia Lavin, 'Re Reading the Encyclopedia: Architectural Theory and the Formation of the Public in Late-Eighteenth-Century France', *The Journal of the Society of Architectural Historians*, 53.2 (1994), 184–92. Also compare with Jürgen Habermas, *Strukturwandel der Öffentlichkeit: Untersuchungen zu einer Kategorie der bürgerlichen Gesellschaft* (Neuwied: Luchterhand, 1962).

<sup>177</sup> Quatremère's influence through the French Académie only began to wane by the mid-nineteenth century: 'This author is, in effect, one of the most ingenious writers who have ever concerned themselves with architecture: but the philosophical doctrines of Mr. Quatremère faithfully recall the tendencies of the century of his birth, and his theories of art derive very logically from his philosophical ideas. Neither the former nor the latter are therefore complete. They sin by insufficiency and sometimes out of ignorance. They alone cannot respond to the needs of these times. We are now deep in the middle of the nineteenth century and Quatremère's works have their roots of the most part in the eighteenth century. Other times, other doctrines.' César-Denis Daly, *Revue générale d'architecture*, 7 (1847–48), as quoted by Lavin, *Quatremère*, pp. 435–36.

<sup>178</sup> 'Public Edifices', in *Quatremère's Historical Dictionary*, pp. 215–17 (p. 217).

prescription, usage, or nature, and ‘grounded in reason or in considerations of utility’ but also linked to the notion of character.<sup>179</sup>

The aspiration of the arts to realise a conceptual ideal, emerges with and is perfected by the Greek proportional system of architecture. Therefore Quatremère agrees with the Ancients that the original principles, rules, and conventions of architecture derive from the Greeks, but also accommodates the proposition of the Moderns that knowledge and ideas are formed by experience and the material world, which privileges the understanding of reality through sight.<sup>180</sup> Yet, he refutes the Moderns’s presumption that arts and sciences share an aim of infinite discovery—of that which already exists as material facts as he quips. In the *Destination*, Quatremère states that science is an important means of the arts, but so is sentiment and feeling, and ‘we should not forget that science addresses itself to the understanding, and that sentiment appeals to the heart. Now, as our sensitive faculties are more active than our reasoning faculties, the artist who only aims at being thought scientific fails to please us in proportion as he seems to tell us that he has no intention to do so.’<sup>181</sup>

The arts, Quatremère later explicates in his dictionary, unlike the sciences are neither positivist nor linear, are not a progressive discovery but invent infinite variations. The art’s pursuit is a process of perfection, a form of encounter within the ‘ideal world’ depending on intelligence and moral sentiment.<sup>182</sup> Encounters as conceptual transpositions, require genius that, paraphrasing Winckelmann, is exemplified in the works of ancient Greece and their ‘character of grandeur and simplicity’.<sup>183</sup> However, overturning Winckelmann’s restrictive preservation of Greek principles, Quatremère liberates the potential of invention:

It is therefore indubitable that there should be no succession of facts or truths from one generation to the next in the domain of works of genius, nor as a consequence, a progression of experimental knowledge by virtue of which the last to come, being the heir of the knowledge of his predecessors, will further expand the facility to acquire new knowledge for his successors.<sup>184</sup>

The transfer of knowledge is not through a continuous development but is contextual and depends on historicity, ‘one who is schooled, not in the letter, but rather in the spirit of

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<sup>179</sup> See ‘Aptness’ and ‘Propriety’, in *Quatremère’s Historical Dictionary*, pp. 70–71 and 214–15. *Convenance* in Jacques-Francois Blondel’s *Cours d’architecture* (1771–1777) had been transformed into the notion of *caractère*; compare Grignon and Maxim, ‘Convenance, Caractere, and the Public Sphere’, 29–37.

<sup>180</sup> See for example Dubos (*Réflexions critiques sur la poésie et sur la peinture*, 1719) or Condillac (*Traité des sensations*, 1754). Quatremère’s relationship to these authors is discussed by Younés, ‘Quatremère de Quincy’s Theory’, in *Quatremère’s Historical Dictionary*, pp. 17–18.

<sup>181</sup> Quatremère, *Destination*, pp. 33–34.

<sup>182</sup> Compare ‘Antique’, in *Quatremère’s Historical Dictionary*, pp. 62–70.

<sup>183</sup> ‘Antique’, in *Quatremère’s Historical Dictionary*, p. 65.

<sup>184</sup> ‘Antique’, in *Quatremère’s Historical Dictionary*, p. 63.

these teachings, knows that imitating the antique is not repeating what the ancients built, but rather as the ancients themselves would have built, were they to answer to the same exigencies of other needs and new conditions'.<sup>185</sup> Imitation and precedents only have a conceptual but not formal relation, and the artistic achievements of all periods must be judged on their own merits.<sup>186</sup> Artistic development, unlike a scientific one, is essentially non-sequential, non-progressive, and non-positivistic, affirming the possible independence of a work of art from preceding or successive artifacts and historical time. This explains how origins emerge as parallel, independent evolutions of 'the ideas, the moral impressions, the abstract qualities of their model, the expression of the sensations that they produce'.<sup>187</sup> Architecture, answering to the material conditions of need and utility, is within the arts of design the most indebted to this non-material causality in order to become imitative. Through architecture's necessary proclivity to abstraction, nature's 'laws of solidity, equilibrium, and balance' are conventionalised as the 'laws of ratio, symmetry, proportions, and number'.<sup>188</sup>

Although Quatremère's focus on theory professes his principal interest in the *art of architecture*, the practices of construction are essential to how he understands the development of architecture into an art of imitation. Only once the needs of society are satisfied by the *art of construction*, can society reach a 'certain wealth of moral culture', with architecture elevated from a craft serving utility to an intellectual art.<sup>189</sup> Thus, 'luxury' is a prerequisite to imitation by introducing the principles of aesthetics, taste, and style.<sup>190</sup> With growing cultural desires, in combination with climatic effects and restricted by the availability of building materials, new practices with specific architectural systems and rules are formed.

Already Vitruvius recognised the first principles of architecture as closely connected to the formation of languages. In 'The Origin of the Dwelling House', he narrated that savage men developed a common language to socially interact and began to build primitive huts for shelter while gathering around fires.<sup>191</sup> With time, they developed building skills, which evolved into the craft of carpentry and the construction of solid dwellings. Then, by imitating nature, they started to decorate their houses in first expressions of luxury and culture.

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<sup>185</sup> 'Antique', in *Quatremère's Historical Dictionary*, p. 69.

<sup>186</sup> Also compare with 'Simple, Simplicity', in *Quatremère's Historical Dictionary*, p. 232.

<sup>187</sup> 'Antique', in *Quatremère's Historical Dictionary*, p. 64.

<sup>188</sup> 'Antique', in *Quatremère's Historical Dictionary*, p. 67.

<sup>189</sup> 'Architecture', in *Quatremère's Historical Dictionary*, p. 75.

<sup>190</sup> Luxury was a new eighteenth-century phenomenon and the production of luxury consumer goods became affordable to a rising middle-class with innovations in manufacture and growing international trade. Maxine Berg traces the history of material imitation and invention in 'From Imitation to Invention: Creating Commodities in Eighteenth-Century Britain', *The Economic History Review*, n.s., 55.1 (2002), 1–30.

<sup>191</sup> Compare Vitruvius, *De architectura* (ca. 15 BC). English translation: *Ten Books on Architecture*, trans. by Morris Hicky Morgan (Cambridge, MA: Harvard University Press, 1914), pp. 23–24. The importance of Vitruvius to the long debate on the primitive hut and first principles of architecture is, amongst others, rehearsed by Joseph Rykwert, 'Reason and Grace', in *On Adam's House in Paradise: The Idea of the Primitive Hut in Architectural Theory* (New York: Museum of Modern Art, 1972), pp. 105–40.

Vitruvius described architecture as originating from a common condition of primitive society and as an almost coincidental, if not instinctive, development that eventually formed habits and agreed conventions in a system of construction and proportional orders. The importance given by Vitruvius to the formation of language as the precondition to a development of society and the arts and architecture, resonated in an eighteenth-century interest in origins and languages, which exerted a great influence on Quatremère's early theories. Like Vitruvius, he argues that architecture as an imitative art had its principled origins in carpentry, as adumbrated by Greek architecture and the primitive construction of the hut. This constituted however not an instinctive, as Vitruvius suggested, but conscious and deliberate act to abstractly imitate nature. Even if early Greek timber constructions are explainable by a local abundance of wood and geographical and climatic specificity, Quatremère insists that it was carefully chosen with artistic intentions, as wood is easily workable to achieve unity and variety.<sup>192</sup> He therefore calls the hut the origin of a Greek *system of architecture*, a 'symbolic' model and 'a whole that was already united by necessary relations; an ensemble composed of parts subordinated to the principle of necessity; a model capable of lending itself in the art of building'; the hut as an archetype is therefore generic, 'at once fictitious and real, whose necessary or probable cause can be always varied by introducing all the intended modifications to inherited forms or new proposed uses'.<sup>193</sup> The hut as a 'primitive type', so Quatremère, implies differentiation over time and specific responses to context, but is only realised when man consciously shapes nature after his will through the means of culture, signified by carpentry.

Seminal to the obsession with primitive origins is Laugier's *An Essay on Architecture* of 1753. He sees the architectural origins in the 'rustic hut' or 'rough sketch' created by a 'natural instinct' of the savage. Laugier's hut is mimetic of nature, as it is 'by imitating the natural process, that art was born', and while architecture is a cultural achievement, simple nature lends its rules.<sup>194</sup> Laugier implies, in contradistinction to Quatremère, that architecture is reproducible through the mimetic principle of the primitive hut. In fact, architecture as an imitative art is aesthetically and not socially motivated, and conditional to it remaining in a primitive state: 'Let us never lose sight of our little rustic hut.'<sup>195</sup> Contradicting the 'natural' state of architecture, however, is Laugier's own description of the hut's first construction by primitive man: 'Some fallen branches in the forest are the right material for his purpose; he chooses four of the strongest, raises them upright and arranges them in a square; across their top he lays four other branches which, inclining

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<sup>192</sup> Compare 'Architecture', in *Quatremère's Historical Dictionary*, pp. 74–86.

<sup>193</sup> 'Hut', in *Quatremère's Historical Dictionary*, pp. 171–72.

<sup>194</sup> Marc-Antoine Laugier, *Essai sur l'Architecture* (Paris: Duchesne, 1753). English translation: *An Essay on Architecture*, trans. by Wolfgang and Anni Herrmann (Los Angeles: Hennessy & Ingalls, 1977), p. 12.

<sup>195</sup> Laugier, *An Essay on Architecture*, p. 12. Vidler points out that Laugier's 'single principle' of architecture in the hut leaves out the development of architecture into an art and the influence of the social, focussing instead on the aesthetic origins based on customs and mores; compare 'Rebuilding the Primitive Hut: The Return to Origins From Lafitau to Laugier', in *Writings on the Walls*, pp. 7–21.

<sup>195</sup> Laugier, *An Essay on Architecture*, p. 12.

towards each other, meet at their highest point.’<sup>196</sup> This building process presupposes a formal and aesthetic intention unexplained by an imitation of nature. Laugier acknowledges this when presenting the ‘little rustic hut’ as the archetype of architectural orders, with its adumbrated columns, entablature, and pediment, which supposedly derive from structural ‘necessity’, eventually developing into the basic elements of the classical temple.<sup>197</sup> To Laugier, the hut signifies the origin of a reasoned theory of construction. Yet, the perfection of architecture he strives for relies on two conflicting definitions of nature. He explains the mimesis of nature as possible by architecture retaining a primitive and ‘natural’ state, whereas the determination of firm principles and rules for a material and ‘natural’ grammar of construction presupposes a cultural abstraction of nature. Laugier attempts to resolve this conflict by defining the primitive state of architecture as metaphorical, allowing nature and culture to merge in mimetic and material principles.<sup>198</sup>

While Laugier generally proposes a structural idea of the primitive hut, to Quatremère it has no real material value and signifies a cultural achievement.<sup>199</sup> By suggesting that carpentry represents a consolidation of skill and knowledge, it reflects on the cultural state of society, and Quatremère therefore calls carpentry a ‘type’—universal principle—from which architecture as an art originates. The cultural concept of carpentry implies architecture as more than a material practice, as a social institution with moral utility.<sup>200</sup> Having defined architecture in social terms, Quatremère challenges Vitruvius and Laugier’s claim that nature is imitated by the architectural orders through the proportions of the human body, and advances a sophisticated counter-argument. The hut as a technical-material product of carpentry gives a rational explanation for the development of design according to requirements of construction, which is unexplained by an analogy with the body. Architectural details are refined by carpentry in response to the material qualities of wood, technical limitation of its shaping and assembly, and consideration of utility—are driven by technical advances and not iconography. By ‘crafting’ nature materially and imitating her conceptually—as, for example, in the analogical imitation of the human body through the

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<sup>196</sup> Laugier, *An Essay on Architecture*, pp. 11–12.

<sup>197</sup> To Laugier the tree-columns signified a primitive structural condition that preceded decoration, however, Le Roy disagreed and posited that the early Greek temples were first utilitarian structures and the significance of the column only emerged later with a row of columns supporting a roof structure and providing an experiential spectacle. Compare Armstrong, *Julien-David Leroy*, pp. 123–24.

<sup>198</sup> Vidler argues that Laugier’s hut is a materialist argument, understanding the hut as the ‘true and scientific origin of shelter’ in opposition to the symbolic meaning given to the temple by the Freemasons. However, this contradicts Laugier’s thesis that the hut is the origin of the temple and orders, and therefore symbolic, as well as Vidler’s own acknowledgement that Laugier’s hut is metaphorical. Compare ‘The Idea of Type’, pp. 95–97 and ‘The Hut and the Body’, 102–11.

<sup>199</sup> John Summerson believes that this reduction to a rational and primitive structural principle by Laugier is still evident in modern architecture; see *The Classical Language of Architecture* (London: Thames & Hudson, 1980), pp. 106–07.

<sup>200</sup> This importance of socio-cultural content in Quatremère’s theory is even more explicit in the tone and elaborations of the original entry on ‘Architecture’ in the *Dictionnaire d’architecture*, but is diluted in the *Historical Dictionary*. Compare ‘Architecture’, in *Quatremère’s Historical Dictionary*, pp. 74–86, with ‘Architecture’ in Hinchcliffe ‘Extracts from the Encyclopédie’, pp. 27–33.

abstraction of proportion—architecture obtains ‘rational forms that animate nature as well as her properties and character’.<sup>201</sup>

The problem to unite the aims of imitation with practical requirements of construction, were frequently discussed in treatises as early as Palladio’s *Four Books of Architecture* (1570).<sup>202</sup> And like Palladio, Quatremère argues that building techniques and skills in ancient Greece were first perfected in wood construction before its knowledge was transferred to stone construction.<sup>203</sup> Even though architecture emulates nature, she does not provide models for either wood or stone construction, and the Greeks devised their own models based on a system of proportions, which demonstrates their advanced cultural consciousness. These proportional models were ‘always constant as to their principle, and always variable as to their applications’, depending on a building’s purpose and context.<sup>204</sup> Therefore Quatremère claims, the ‘fictitious model of the hut exists no less in the moral order of the matter, as a fortunate element of propriety, order, symmetry and other qualities of which it became the allegorical prototype for architecture’—allegorical here indicating poetical and conventional qualities of imitation.<sup>205</sup>

Whereas *De l’architecture égyptienne* was concerned with an independent development of Greek architecture and claimed its autochthonous origin, by the mid-1820s while working on the last volume of the *Dictionnaire d’architecture*, the issue of origins seemed less important and was superseded by the problem of historicity.<sup>206</sup> Quatremère now distinguishes between the *art of building* and the *art of architecture* by extracting not just a different chronology but establishing an ahistorical basis for an independent kind of knowing. This line of enquiry presumes the analogous structure of architecture and language, and the shift in his theory meant, as Foucault states: ‘It is no longer origin that gives rise to historicity; it is historicity that, in its very fabric, makes possible the necessity of

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<sup>201</sup> ‘Architecture’, in *Quatremère’s Historical Dictionary*, pp. 74–86 (p. 81). The primitive origins of architecture as debated by Quatremère and Laugier are compared by Rykwert in ‘Necessity and Convention’ and ‘Positive and Arbitrary’, in *On Adam’s House in Paradise*, pp. 29–74.

<sup>202</sup> ‘I say therefore, that architecture, as well as all other arts, being an imitator of nature, can suffer nothing that either alienates or deviates from that which is agreeable to nature; from whence we see that the ancient architects, who made their edifices of wood, when they began to make them of stone, instituted that the columns should be left thicker at the top than at the bottom, taking example from the trees, all which are thinner at the top than in the trunk, or near the root.’ Andrea Palladio, *The Four Books of Architecture* (1570), Book I, Chapter XX, trans. by Lefaivre and Tzonis, *The Emergence of Modern Architecture*, pp. 152–53.

<sup>203</sup> Construction in wood was ‘the type or the more or less material or more or less fictive model upon which the art of more advanced societies based and regulated the characteristic forms, the elementary combinations, the general proportions, and the disposition of members in stone architecture’. ‘Tree’, in *Quatremère’s Historical Dictionary*, p. 251.

<sup>204</sup> ‘Principle’ by Quatremère’s as cited by Younés in *Quatremère’s Historical Dictionary*, p. 21.

<sup>205</sup> ‘Architecture’, in *Quatremère’s Historical Dictionary*, p. 78. Compare with ‘Architecture’ in Hinchcliffe ‘Extracts from the Encyclopédie’, pp. 27–33.

<sup>206</sup> Neither the *Dictionnaire d’architecture* nor the *Historical Dictionary* include an entry on origins. The entry ‘Hut’ in the *Historical Dictionary* also makes no mention of either the cave or the tent. The only discussion of origins in form of the cave, tent, and hut appears under the rubric of ‘Architecture’.

an origin which must be both internal and foreign to it.<sup>207</sup> Two entries in the *Dictionnaire d'architecture* disclose this fundamental theoretical repositioning: 'Character' (1788, I) and 'Type' (1825, III).<sup>208</sup> Under these two rubrics, a change from classical characterisation to modern type-definition is apparent. Beginning with a theory of *character*, indebted to the eighteenth-century exploration of expression in architecture, Quatremère restructures the classical tradition by developing a linguistic and social theory centred on his concept of *type*. While character anticipates an imitative substitution of nature through conventions, it perpetuates culture's subservience to nature and reinforces the classical episteme of representation as a tabulation of expressions and taxonomies of genres. The relationship between nature and culture only becomes inverted with a conceptual definition of type that exists beyond the remit of representation, constituting in Foucault's terms a modern and 'organic structure' of knowledge.<sup>209</sup>

The first methodical use of 'character' in *Livre d'architecture* (1745) by Boffrand, posited that architecture is capable of poetical and dramatic expression. Recognising the difficulty to characterise literary expressions in architecture, Le Roy in *Histoire* (1764) proposed that architecture instead seeks sublime sensations and impressions similar to those experienced in nature. Quatremère's notion of character is indebted to Le Roy's expression of the sublime, but enlarges the range of naturalistic and artistic expressions by relating them to social conventions.<sup>210</sup>

The art of characterization, that is to make evident by material forms the intellectual qualities and the moral ideas which can express themselves in buildings, to make known, by the agreement and the fitness of all the constitutive parts of buildings, its nature, its propriety, its use, its intention; this art, I say, is perhaps, of all the secrets of architecture, the most fine and the most difficult to develop as it is to grasp.<sup>211</sup>

The Greeks were skilled in characterisation and able to abstract from nature their own model as well as its imitation.<sup>212</sup> They demonstrated that imitation is a knowing of nature but that its artistic judgement is independent and abstract.<sup>213</sup> Based on the premise that 'character is nothing but the sign by which Nature inscribes its essence on objects',

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<sup>207</sup> Foucault, *The Order of Things*, p. 329.

<sup>208</sup> The entries 'Character' and 'Type' are compared by Vidler in 'From the Hut to the Temple', pp. 147–64 (pp. 154–59) and 'The Idea of Type', 95–115 (pp. 99–105).

<sup>209</sup> According to Foucault in *The Order of Things*, 'representation' defines the classical and the 'organic structures' a modern episteme.

<sup>210</sup> Quatremère's notion of character is widely discussed. By Forty, 'Character' in *Words and Buildings*, pp. 120–30; Di Palma, 'Architecture, Environment and Emotion', pp. 45–56; Lavin, 'The Character of Classicism, in *Quatremère*, pp. 137–47; and Vidler, 'From the Hut to the Temple', pp. 147–64 and 'The Idea of Type', 95–115.

<sup>211</sup> Quatremère, 'Character', trans. in Hinchcliffe 'Extracts from the Encyclopédie', p. 34.

<sup>212</sup> Compare Quatremère, 'Character', trans. in Hinchcliffe 'Extracts from the Encyclopédie', p. 35.

<sup>213</sup> Compare Quatremère, 'Character', trans. by Di Palma in 'Architecture, Environment and Emotion', 45–56.

Quatremère differentiates between a ‘physical’ (visible) and ‘moral’ (intellectual) character, which are further subcategorised into ‘essential’, ‘distinctive’ (accidental) and ‘relative’ character.<sup>214</sup> The latter three kinds of character are denoted in language if something *has* character, is a character, or is referred to by *its* character.<sup>215</sup> *Essential character* being permanent, guarantees the consistency of general habits and the typicality of natural object, however, remains primitive and experienced by sensations rather than reason. *Distinctive character* is a particular articulation of essential character found, for example, in different physiognomies. In comparison, *relative character* indicates propriety and functional qualities that a particular example should demonstrate according to social and cultural conventions. Relative character is either concerned with an ideal character, the communication of an idea, or with imitative character, the communication of *convenance* of buildings types according to function. Commenting on the interrelationships between architecture, context, and society implied by character, Quatremère concludes: ‘the architectural character of different people consists *in a way of being, in a conformation necessitated by physical needs and moral habits. In this conformation are painted the climate, the ideas, the mores, the taste, the pleasure, and the very character of each people.*’<sup>216</sup> Therefore, the architect is not entirely free and has to obey the propriety demanded by public opinion, ‘before undertaking any construction, the architect will consult the relations between the people’s ideas and the monument with which he is entrusted’.<sup>217</sup>

The greatly abridged entry of ‘Character’ in the *Historical Dictionary* (1832) indicates its diminished importance to Quatremère. Character is now almost exclusively defined as a means to classify didactic prescriptions and descriptions of functional building types, implying its usefulness to design. It presents character as a formal language to communicate appropriate functions by distinguishing traits and features of a ‘material object’ or ‘moral quality’.<sup>218</sup> Character is the sign denoting a ‘supereminent distinction’ with its three principal applications and qualities deriving from a comparable use in language. A building or monument *has* character when its concept and realisation rests on principles of unity and simplicity, expressed by material and structural scale, strength, and mass. This primitive quality of character is only of historical significance, as the required simplicity of society and unity of means is no longer attainable and indicative of early civilisations, such as the Egyptian, when architecture’s efforts concentrated on a small number of large-scale public structures. Character then was a collective manifestation and represented society through a natural language and form.<sup>219</sup> In contrast, architecture and its works have a character when they are original and conform to the conventions proper to imitation. To have a character, it is necessary for original invention to create something not previously

<sup>214</sup> Quatremère, ‘Character’, trans. in Hinchcliffe ‘Extracts from the Encyclopédie’, p. 34.

<sup>215</sup> Compare Quatremère, ‘Character’, p. 490, trans. by Vidler in ‘From the Hut to the Temple’, p. 156.

<sup>216</sup> Quatremère, ‘Character’, p. 492, trans. by Lavin in *Quatremère*, pp. 139–40.

<sup>217</sup> Quatremère, ‘Character’, trans. in Hinchcliffe ‘Extracts from the Encyclopédie’, p. 35.

<sup>218</sup> Compare ‘Character’, in *Quatremère’s Historical Dictionary*, pp. 103–04.

<sup>219</sup> Compare with ‘Character’, in *Quatremère’s Historical Dictionary*, pp. 105–07.

existing. Finally, a work of architecture can be referred to by *its* character, when the design is fit for purpose and fulfils the requirements of a functional building type. These common characteristics of building types are, as Alberti already stated, conveyed as lineaments and form and figure, which represent the structural essence of the thing signified, and ‘we may recognize the same lineaments in several different buildings that share one and the same form’ as lineaments are ‘the precise and correct outline, conceived in the mind, made up of lines and angles, and perfected in the learned intellect and imagination’.<sup>220</sup> Alberti’s lineaments equate to Quatremère’s terms ‘conception’, ‘parti’, and ‘esquisse’, which are to him the ‘abbreviated formation of a plan or a drawing’.<sup>221</sup> They signify an architectural idea and make its transposition into a design operative by utilising a diagrammatic function. Character thus shares with typology a diagrammatic reduction and derives from an abstracted historical and formal knowing of architecture.

Quatremère further understands character from an anthropological point of view as representing customs absorbed by the means of architecture. The ‘indicative property’ of a building, *its* character and physiognomy, utilises a method of figuring to manifest an appropriate form according to function, which observes the available means to architecture throughout its different scales, from the whole to its parts. Hereby character relies on building types as intermediaries between universal Gestalt and individuated figures. Through *its* character, the purpose of a building is both typified in its function and differentiated in particular instances. The figures appropriate to character, in the sense of a formal diagram, is first developed in plan and then informs the elevation, while permitting the necessary formal and decorative variations demanded by context, scale, social importance, and function.<sup>222</sup> Despite possible endless variation, the plans of each building type are restricted by customs, which ‘produce a certain uniformity of distribution [...] and this effect must be correlated with the elevation, whose simplicity of line will become the obligatory *character*’.<sup>223</sup> Quatremère addresses the problem familiar from Durand’s *Précis* to translate plans and judge composition by revealing what was concealed by Durand’s method: cultural and social conventions.

Some functional types are in fact morphological and have a ‘characteristic motif of plan and elevation’, such as the circular plan representing, according to Quatremère, the appropriate form of a theatre. The design is therefore here a variation of a morphological type, implying the subservience of morphology to function. While massing derives from the plan and elevations, their adequate articulation, hierarchical order, and proportionality of embellishment is independent from function and even customs, but determined by taste

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<sup>220</sup> Alberti, *On the Art of Building*, ‘Book 1: Lineaments’, chapter 1, p. 7.

<sup>221</sup> Quatremère, ‘Conception’ in *Historical Dictionary*, p. 117.

<sup>222</sup> The differentiation follows a design sequence that Quatremère describes as: ‘1st by the forms of the plan and of the elevation; 2nd by the choice, the measure or manner of ornament and decoration; 3rd through the massing and the kind of construction and materials.’ See ‘Character’, in *Quatremère’s Historical Dictionary*, p. 107.

<sup>223</sup> ‘Character’, in *Quatremère’s Historical Dictionary*, p. 108.

and the building's proper character. By observing *its* character according to the means of construction, the choice and type of materials, their size, colour, visual, and textural qualities strengthen a building's character and ensure its 'aptness' and 'propriety'. A building in this way always maintains its particular character and a common intelligible language. Propriety also applies to the decoration of buildings by providing a 'characteristic genre'. The language of decoration—painting and sculptural ornament—ought to clearly communicate the purpose of a building through suitable allegorical signs, making allegory important to *relative* character and constituting a formal writing through functional signs with ahistorical and atemporal signification. The legibility of applied allegorical symbols, however, partially derives from customs, historical precedents, and cultural awareness, but ultimately is self-sufficient, as it is part of an indicative character of a building.<sup>224</sup>

While Quatremère's early entry of 'Character' in 1788 clearly owes to the concepts of decorum, fitness, and *convenance*, by the early nineteenth century the terms had become largely obsolete, as evident by the revisions to the *Historical Dictionary*. Whereas traditionally character was defined by its complementarity to the classical orders and a physiognomic analogy, Quatremère questions its limitation by introducing general categories of purpose that allow a new expressive plurality.<sup>225</sup> Character becomes thus predominantly an instrument of practice to classify building types and to regulate architectural form through conventions, but also considers social and political aspects of architecture through affectivity and association.<sup>226</sup> Defining character as a natural language, type is introduced as a complementary artificial language. Type embodies the fundamental essence of architecture and a conceptual analysis and understanding of the deeper structures of form, which enable an invention unrestricted by received characters or form. With a distinction between a functional classification of received form through character and the fundamental ideas of form in type, Quatremère explicates the linguistic functions of architecture: type is architecture's syntax, while character permits the filiation of architectural systems into different dialects. The restructuring of architectural form by typal reasoning further points to its social importance, as the syntactic depth structure of form is as much formal and material as it is cultural and social. Therefore, the deep structure of type is simultaneously a formal and social diagram.

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<sup>224</sup> Compare 'Character', in *Quatremère's Historical Dictionary*, pp. 109–10. When Quatremère used allegory in the decoration of the Panthéon, he however had to explain his allegorical references, he also realised after a failed attempt to use allegory in the *Fête de la Loi* (1792) that this cultural awareness or legibility is not guaranteed and requires special knowledge. For the use of allegory in Quatremère's projects, see Kirtland, 'A Glass Clouds', pp. 209–31; and Rowlands, 'The Formative Years', pp. 258–302.

<sup>225</sup> For a discussion of Quatremère's concept of character as a response to architectural plurality, see Sola-Morales, 'The Origins of Modern Eclecticism'.

<sup>226</sup> While character was still indebted to a decorous and physiognomic idea in J.-F. Blondel's *Cours d'architecture* (1771), already with Germain Boffrand's *Livre d'architecture* (1745) or Thomas Whately's *Observations on Modern Gardening* (1770) an expanded notion of character emerged that included the ideas of centrality, affectivity, and association; see John Archer, 'Character in English Architectural Design', *Eighteenth-Century Studies*, 12.3 (1979), 339–71.

The entry of 'Type' in the *Dictionnaire d'architecture* in comparison to that of 'Character' is short and was retained unchanged in the *Historical Dictionary*.<sup>227</sup> 'Type' concludes Quatremère's architectural theory and integrates it with his system of the arts developed in the *Essay on Imitation*. Like all rubrics in the dictionaries, 'Type' is subdivided into the word's etymology, its general historical usage and conceptualisation, and its specific function and didactic application in architecture. Quatremère however radically departs from the prevalent notion of type, which until the eighteenth century meant a pre-figuring of later events in the scripture and was connected to Christian religious symbolism. This archaic definition was still maintained by Diderot and d'Alembert's *Encyclopédie*: 'it is necessary for God to have had the particular intention to make a *type*, and he must have expressly stated that the analogy is a *type*'.<sup>228</sup> Quatremère formulates a secular definition in which the metaphysical vagueness of type converges with the questions of origins, imitation, and character, with divine intention and type-creation replaced by human invention and type-definition. As Quatremère's notion of type arises from an art historical systematisation, it has affinity with the late eighteenth-century aesthetic and antiquarian categories of type as applied to painting and sculpture, and relates to etymological studies of emblematic writing, linked initially to hieroglyphs and later allegory.<sup>229</sup> Quatremère further subsumes under type his concept of abstract imitation and the interrelationship between *idea* and *image*, positing type as a systematic knowing and memetic development analogous to language and its syntax. He however interprets the taxonomy implied by type less in functional and morphological terms than as clarifying the historical and conceptual differences in the common-to-all depth structures of form.

With the etymological roots of *type* stemming from the Greek word *typos*, its meaning is synonymous with '*model, matrix, impression, mould, figure in relief* or in *bas-relief*', frequently applied to sculpture.<sup>230</sup> Type relates to the idea of character, whose Greek roots denote an 'impressed mark, distinctive form' and 'to engrave or imprint', signifying 'a mark or figure traced on stone, metal, paper, or other material, with a chisel, a burin, a brush, a pen, or other instrument, so as to be the distinctive sign of something'.<sup>231</sup> Both type and character are further related to the diagram, which in its Greek etymological meaning is 'that which is marked out by lines, a geometrical figure, written list, register'.<sup>232</sup> *Type*,

<sup>227</sup> The entry 'Character' was shortened from the *Dictionnaire d'architecture* (I, pp. 477–518), which also included a separate entry on 'character' in gardening (I, pp. 518–21) to the *Historical Dictionary* (I, pp. 302–08) from 42 to 7 pages. Type was unedited from its entry in the *Dictionnaire d'architecture* (III, pp. 543–45) to the *Historical Dictionary* (II, pp. 629–30).

<sup>228</sup> 'Type', in *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, 16:778–80 (Paris, 1765), trans. by Kathleen Hardesty Doig, in *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project* <<http://hdl.handle.net/2027/spo.did2222.0000.210>> [accessed 2 September 2010].

<sup>229</sup> Compare Vidler, 'From the Hut to the Temple', pp. 147–49.

<sup>230</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 254. Its use in sculpture goes back to early descriptions by the Greek geographer Pausanias.

<sup>231</sup> Compare with Quatremère, 'Character', in *Dictionnaire d'architecture*, trans. by Vidler in 'From the Hut to the Temple', pp. 154–55.

<sup>232</sup> 'Diagram, n.' in *Oxford English Dictionary*, 2nd edn (1989).

Quatremère states, is commonly used in a metaphorical sense and especially as a synonym for the *model*. However, making a critical distinction he clarifies: ‘The word *type* presents less the image of the thing to copy or imitate completely, than the idea of an element which must itself serve as a rule for the model.’<sup>233</sup> This distinction in parts critiques the use of the model in the Académie, where it is taken to justify invention as a copying of received form and confuses ‘the model for nature itself’, but also derives from Quatremère’s system of imitation.<sup>234</sup> With all arts unified by their abstract imitation of nature, he differentiates between those with obvious models in nature and those, like architecture, that only imitate her poetically: analogically, metaphorically, and intellectually. As the synthesising function of imitation, *type* reveals the laws of nature as applicable principles, manifested as varied models and materialised in the artifact. While models have apparent rules, *type* represents a non-prescriptive higher ‘idea’, ‘motif’, and ‘intention’. This dialectic between *type* and *model* highlights an important shift in signification. In the *Essay on Imitation*, resemblance is a distinct and separate intermediary, marking one idea onto another and acting between signified and signifying. In the dictionary, the function of resemblance is compressed into the model itself. *Type* is the idea signified, the sign, and the model the signifying, incorporating the representation of the sign, its sign-ness, and becoming in imitative terms its ‘image’ or duplicated representation.<sup>235</sup> In other words, *type* is organisational and strategic, the model structural and tactical. Principled inventions thus rely on *typal* reasoning, with *typological* models representing the implementation and formal articulation of the speculative potential embodied in *type*:

The model, understood in the sense of practical execution, is an object that should be repeated as it is; contrariwise, the *type* is an object after which each artist can conceive works that bear no resemblance to each other. All is precise and given when it comes to the model, while all is more or less vague when it comes to the *type*.<sup>236</sup>

This ‘vagueness’ is foremost formal and material, but *type* despite its generality can only operate when understood in culturally specific terms. Vagueness or incompleteness allows (artistic) interpretation and thus invention is indebted to *typal* contemplation, which defines its content, technique, measure, and potential. When inventions merely strive for originality and novelty, they become ‘innovation’, which Quatremère denounces as positivist discoveries only appropriate for the sciences. True invention requires constraint by ‘certain number of types, characters, combinations’, and conventions, without which they are arbitrary.<sup>237</sup> *Type* simultaneously affirms and challenges conventions, instituting a relative

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<sup>233</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 254.

<sup>234</sup> Rowlands, ‘The Formative Years’, p. 106.

<sup>235</sup> ‘Duplicated representation’ characterises to Foucault the classical episteme and is entirely transparent within its relationship between sign and signified; compare Foucault, *The Order of Things*, p. 63–67.

<sup>236</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 255.

<sup>237</sup> ‘Invention’, in *Quatremère’s Historical Dictionary*, pp. 179–83 (p. 181).

autonomy of invention, which consists of a conceptually 'new combination of pre-existing elements'.<sup>238</sup> Synonymous with creation, invention in the imitative process realises the objective of the arts: pleasurable knowing. Further contemplating the problem of invention, Quatremère concludes in 'Type' that 'the orderly art of building was born from a pre-existing seed. Everything must have an antecedent; nothing whatsoever comes from nothing, and this cannot but apply to all human inventions.'<sup>239</sup> These seeds are both formal precedents and elementary principles, which are 'always evident to feeling and reason', and as principled human inventions obligated to sentiment and taste.<sup>240</sup> Type is 'like a sort of nucleus around which are assembled, and with which are consequently coordinated, all the developments and the variations of form to which the object was susceptible'.<sup>241</sup> Although classifiable and analysable in their history, types are ahistorical until realised. And the reasoning and search for first principles, propounds Quatremère, 'ought to be called *type* in architecture as in every other area of human invention and institution'.<sup>242</sup>

Type implies development that is common in its idea but independent of historical time, and is less defined by progress than difference. 'There is more than one path that leads back to the original principle and to the formative *type* in the architecture of different countries. [...] Thus, in going back to the origins of societies which had a beginning of civilisation, one sees the art of building emerging from causes and with means which are sufficiently uniform everywhere.'<sup>243</sup> Conditioned by its specific context, type reflects on the social state and gives rise to diverse architectural systems, but the *art of architecture* only emerged with a cultural effort and perfection, signified by carpentry.<sup>244</sup> The perfection of the arts requires a synthesis of theory and practice, and Quatremère equates this to an increasing abstraction in imitation.

The difference between type and model mirrors the hierarchical order of imitation and its two basic forms of *identical repetition* and *imitative resemblance* established in the *Essay on Imitation*. The first is a mechanical doubling of an object, while the second is the 'repetition of an object by and with another object, which becomes its image', creating an abstract and generative work.<sup>245</sup> Although the copy is not imitative, Quatremère concedes that it has artistic value, if the copy is not just a reproduction but reinterpretation, as through it the model can be understood. Copying, or learning from precedents, is a minor form of imitation and invention.<sup>246</sup> Precedents, to which types refer to, assist in understanding the

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<sup>238</sup> 'Invention', in *Quatremère's Historical Dictionary*, p. 179.

<sup>239</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>240</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>241</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>242</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>243</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>244</sup> Wood construction is eventually 'perpetuated by custom, perfected by taste and accredited by immemorial usage', forming the 'principle after which an art that is perfected in its rules and in its practices, was modelled'. See 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>245</sup> 'Copy', in *Quatremère's Historical Dictionary*, pp. 125–27 (p. 125).

<sup>246</sup> Compare 'Copy', in *Quatremère's Historical Dictionary*, p. 125.

laws of nature and are a source of imitative production when abstracted, and contribute to the scope of type.<sup>247</sup> Yet architecture bemoans Quatremère, suffers from a confusion of *imitative resemblance* with the *identical copy*, which perverts the imitative quality of architecture: ‘confounding the idea of *type*, the imaginative model, with the material idea of a positive model, which will deprive the *type* of all its value’, either all rules of architecture are rejected or nature is simply copied’.<sup>248</sup> The ambiguity of invention therefore arises from mistaking the ‘idea of *type* (the originating reason of a thing), which cannot command nor furnish the motif or the means of an exact similitude, with the idea of model (the complete thing), which compels a formal resemblance’.<sup>249</sup> However, to truly invent, material models (actual nature) or their representation are insufficient and requires a typical reasoning, the organisational formation (conceptual nature) of architecture. This reasoning is neither prescriptive nor proscriptive but diagrammatic, as ‘metaphysical’ imitation is realised ‘by analogy, by intellectual relationships, by application of principles, by the appropriation of manners, combinations, reasons, systems, etc.’, thus type considers not the ‘materially necessary’ but non-functional and non-formal.<sup>250</sup>

Quatremère concludes his entry ‘Type’ by referring to the comparable meaning of type to character. In the formal, functional, and morphological sense, types as building types are ‘general forms which are characteristic of the building that receives them’.<sup>251</sup> This overlap seems to contradict the distinction between character and type, but Quatremère reiterates that character is part of a didactic theory, the material means, and type of a metaphysical theory, the conceptual means on which the didactic is based. This difference between character and type is clarified by their relation to appearance, whose category of identity constitutes an imitation attainable through characterisation while its criteria of difference materialises the typical or ‘intellectual qualities and moral ideas which can express themselves in buildings’.<sup>252</sup> Similarly, in the essential division between type and model, the model retains a transparent representational relationship through imitative duplication, while these relations are severed by type through a conceptual reasoning and comparison without recourse to identity. This indicates that typical hierarchy is less taxonomic than syntactic or synthesising.

The distinction between type and model further represents a separation of the particular-perceptual and universal-conceptual in Quatremère’s system of architecture. By subsuming metaphysics, a modern epistemology and ontology emerges with type that overcomes the limitations of representation. Relating the question of knowing to history, the conditions for a possible criticism are given.<sup>253</sup> This reflection on historicity and its Kantian compromise

<sup>247</sup> Compare ‘Copy’, in *Quatremère’s Historical Dictionary*, p. 126.

<sup>248</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 256.

<sup>249</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, pp. 255–56.

<sup>250</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 255.

<sup>251</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 256.

<sup>252</sup> Quatremère, ‘Character’, trans. in Hinchcliffe ‘Extracts from the Encyclopédie’, p. 34.

<sup>253</sup> Compare with ‘The Age of History’, in Foucault, *The Order of Things*, pp. 217–21.

between a metaphysical and empirical knowledge is essential to Quatremère's theory. It enables an ahistorical condition of type, which although resisting chronology is concerned with the historical modalities of formation and the exemplarity of ideas, their limitation and possibility. Quatremère is, despite the didactic implications of his theory, disinterested in form and its solution or style. Therefore, his concern with origins reveals itself as an interest in the history of ideas. Therefore, the Greek antiquity represents to him an intellectual achievement and a first exemplary architectural system adumbrating a socio-cultural and political theory of architecture. Their effort, he insists, must be sustained *and* challenged, with typal reasoning replacing a classical for a modern system of architecture.

Despite Quatremère's distinction between type and model, they are inseparable. Typal reasoning denotes an original and conceptual thinking without which the typological reasoning of models, which is always material and dependent on precedents, remains either arbitrary or formally identical. Their hierarchical separation, allows the *ideal* to be recognised in the process of translation from type to model. Conscious of the fact that the ideal was by the early nineteenth century becoming conceptually obsolete, Quatremère transposes the metaphysical qualities of the ideal to the rational structure of type and its system of architecture.<sup>254</sup> 'The result of this system, for example is known as the *ideal* of such a subject, of such a nature, or such a composition, etc., that is to say, the characteristic type, the generic principle of such and such a subject of imitation.'<sup>255</sup> The proximity of the *ideal* to an *idea* reveals the importance of generalisation and abstraction, which rely in their realisation on typal and typological conventions. As the source of transformation, the historical and post-historical condition of type allows otherwise static models to transcend their historical burden and in the process subsumes the ideal under the 'internal vision' of the artist, who attempts to overcome the past and invent for the present and future. As James Henry Rubin claims: 'By positing this internal rather than an external ideal, Quatremère's doctrine made individuality and subjectivity in artistic process the apparent conditions for ideal vision; he showed the futility and shallowness of following the academic traditions based on "dramatic illusionism," as he was wont to say, and on a materialist imitation of external nature, in particular, of the live model.'<sup>256</sup> The internalisation of the ideal in type reinforces the displacement of nature and its models, while responding to the crisis of the perceptual that Quatremère saw unavoidable with the rise of Romanticism. To reconcile expressionist and realist tendencies with reason, he proposed an individuality and subjectivity that is rational by being deduced from abstraction.

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<sup>254</sup> That the 'ideal' became irrelevant by the mid-nineteenth century, is argued by Anthony Vidler in 'Architectural Cryptograms: Style and Type in Romantic Historiography', *Perspecta*, 22, Paradigms of Architecture (1986), 136–41.

<sup>255</sup> 'Idea, Ideal', in *Quatremère's Historical Dictionary*, p. 174. Here Quatremère explains the importance given to the ideal in architecture: 'when one recognizes that every system that derives from the general laws of nature belongs to the *ideal* order of thing, then perhaps one is permitted to propose that no art more than architecture rests on the principle known as the *ideal*'.

<sup>256</sup> Rubin, 'Allegory versus Narrative', p. 383.

Type can be said to offer a simultaneous conceptual and formal framework challenging linear causality and providing an operative system in which architecture is continuously reconceptualised. Type engenders speculative thought that is first concerned with organisational and then with structural formation, both constituting its deep structure: with its diagrammatic possibilities.<sup>257</sup> With architecture's memetic development and its necessary abstraction through intellection subject to socialisation and enculturation, architecture is free to express, define, and develop ideas within the boundaries of reason and contingent conventions that guarantee its communicability. Architecture's formation is therefore syntactic and an expression of culture, with Quatremère's thesis stating that the formation of a shared artificial language between architecture and society is the basis of a social obligation to which artistic creativity is bound. Type is the means to enact and ensure architecture as a social institution.

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<sup>257</sup> Lavin for example states: 'Type was entirely speculative—he offers no historical or archaeological proof for his assertions—and was universal.' See *Quatremère*, p. 88. She however seems to disregard the differentiation that occurs in Quatremère's later definition of type.

## 4 TYPE AND THE BEGINNING OF THE MODERN

The meaning of the *classical* was a central subject of eighteenth-century speculations in architecture, which finally rejected or reconceptualised the classical through an empirical reduction. The resulting compromise between the real and ideal differed categorically from the innateist and transcendental idea associated with the Classical Antiquity and Renaissance.<sup>1</sup> A similar transformation in other fields, according to Foucault, can be understood through epistemological shifts. The Renaissance episteme of ‘resemblance’ and ‘signature’ was in the mid-seventeenth century replaced by the classical episteme, which itself lasted until the turn of the nineteenth century. This classical age was defined by a taxonomic ordering of ‘identities’ and ‘differences’ and their transparency to representation.<sup>2</sup> With the subsequent modern episteme, the ‘mode of being of representation’ and its sequentiality was however permanently modified, with ‘knowledge itself as an anterior and indivisible mode of being between the knowing subject and the object of knowledge’ revealing ‘how things in general can be given to representation, in what conditions, upon what ground, with what limits they can appear in a positivity more profound than the various modes of perception’.<sup>3</sup>

A ‘modern’ epistemology in architecture was first formulated in the theories of Quatremère and articulated by a challenge of origins and representation through a new mode of knowledge and understanding of history. Based on abstraction, his architectural system enabled a new concept of type that displaced a conventional idea of imitation.<sup>4</sup> However, the same challenge of classical thought was also evident in Durand’s theories, in his denial of representation and the structural, diagrammatic reduction of his dispositional method. Both Quatremère and Durand can be considered at the threshold of the modern according to Foucault’s definition, as their representation is no longer entirely transparent and their theories start to define ‘organic’ and ‘invisible structures’, social and functional organisations that enable different relations between interior and exterior form. With a consciousness of the limitation of representation, a finitude emerges. This finitude with ‘the limits of knowledge provide a positive foundation for the possibility of knowing’ as an interrelationship between classical identity and difference in the ‘figure of the *Same*’, which occur in philosophical investigations and the ‘analysis of finitude, of

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<sup>1</sup> Compare with Cramer, ‘Formal Reduction and the Empirical Ideal’.

<sup>2</sup> ‘In the Classical period, the field of knowledge, from the project of an analysis of representation to the theme of the *mathesis universalis*, was perfectly homogeneous: all knowledge, of whatever kind, proceeded to the ordering of its material by the establishment of differences and defined those differences by the establishment of an order.’ Foucault, *The Order of Things*, p. 346.

<sup>3</sup> Foucault, *The Order of Things*, pp. 252 and 337.

<sup>4</sup> The nineteenth century saw a shift from an indirect imitation to a representational mode of abstraction, as evident in Quatremère’s writings. Victor Cousin, who understood beauty and imitation as a compromise between an empirical reality to be imitated and a Platonic idea not empirically realisable, adopted his idealist theory. See Barbara Whitney Keyser, ‘Ornament as Idea: Indirect Imitation of Nature in the Design Reform Movement’, *Journal of Design History*, 11.2 (1998), pp. 130–31.

empirico-transcendental repetition, of the unthought, and of origin'.<sup>5</sup> Nevertheless, the measure of modernity by finitude and representation is complicated by the fact that it only applies to empirical sciences, as Foucault recognises. In human sciences, which he considers intermediaries in the 'space of knowledge', representation retains its primary importance, and its challenge remains partial.<sup>6</sup>

But representation is not simply an object for the human sciences; it is [...] the very field upon which the human sciences occur, and to their fullest extent; it is the general pedestal of that form of knowledge, the basis that makes it possible. Two consequences emerge from this. One is of a historical order: it is the fact that the human sciences unlike the empirical sciences since the nineteenth century, and unlike modern thought, have been unable to find a way around the primacy of representation; like the whole Classical knowledge, they reside within it; but they are in no way its heirs or its continuation, for the whole configuration of knowledge has been modified and they came into being only to the degree to which they appeared, with man, a being who did not exist before in the field of the *episteme*. [...] The other consequence is that the human sciences, when dealing with what is representation (in either conscious or unconscious form), find themselves treating as their object what is in fact their condition of possibility.<sup>7</sup>

Therefore, so Foucault, for human sciences to be able to represent man's conditions to himself, two conditions have to be met. Empirical sciences have to become connected to the *analytic of finitude* through three model pairs of function and norm, conflict and rule, and signification and system, and human sciences need to be rooted in classical thought in order to constitute a 'positive domain of *knowledge*' rather than an 'object of *science*'.<sup>8</sup> Following from this shift in the meaning of classical representation and the classical per se—the emergence of a modern episteme according to Foucault—Peter Eisenman distinguishes in 'The End of the Classical: The End of the Beginning, the End of the End' (1984) between 'Classicism' (a style), the 'classical' (an episteme), and the 'classic' (the timeless that is of first rank). Eisenman then develops three 'fictions' of the classical aspiring to the classic, or the simulations of 'representation', 'reason', and 'history' and their doublets, the 'meaningful', 'true', and 'timeless'.<sup>9</sup> These three simulations originate in the fifteenth century Renaissance but, partially contradicting Foucault, persist until the twentieth century as a 'classical' mode of thinking.<sup>10</sup>

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<sup>5</sup> Foucault, 'Man and his Double', in *The Order of Things*, pp. 303–43.

<sup>6</sup> Human sciences act, according to Foucault, as intermediaries to the mathematical and physical sciences, the sciences, and philosophical reflection.

<sup>7</sup> Foucault, *The Order of Things*, pp. 363–64.

<sup>8</sup> Compare Foucault, 'The Three Models', in *The Order of Things*, pp. 355–67.

<sup>9</sup> Peter Eisenman, 'The End of the Classical: The End of the Beginning, the End of the End', *Perspecta*, 21 (1984), 155–73.

<sup>10</sup> Compare Eisenman, *The End*, pp. 155–64.

The first fiction of *representation* emerged when in the Renaissance meaning could no longer be represented by language and became verified by being a simulacrum of ancient buildings. At the end of the eighteenth century, the separation between language and representation was exacerbated when the historical relativity of historicism acknowledged the reduction of past meaning into a 'message', a simulation continuing throughout the Modern Movement. In the second fiction of *reason*, the simulation of truth was equated with origins that, no longer self-evident in the Renaissance, required verification. This verification was provided by ideal origins and destinations of divine, cosmological, or anthropomorphic orders. The Enlightenment, objecting to the Renaissance cosmology, developed with Durand a rational and scientific process of reasoning that persisted in the Modern Movement. This reasoning, however, was self-conscious and questioned its mode of knowing and therefore relied on an act of faith in order to construct an illusion of verification, as reason could not sufficiently explain its origins or justify its claim to truth. Therefore, truth was simulated as a scientific 'message'. The third fiction of *history* in turn simulated the timeless lost with history becoming dialectic by the nineteenth century and an emergence of temporal origins. The universal idea of history became one of presentness, which nonetheless could only be defined in relation to the past, as a continuity of its simulation and an illusion of timelessness.

Despite obvious differences, Eisenman agrees in principle with Foucault's distinction between the classical and modern episteme, but provides an overlapping chronology of change specific to his three fictions. Even his contention that Classicism and Modernism are historically continuous by upholding the 'classical', does not contradict Foucault's argument. Both understand architecture as a human science, which to Foucault means retaining aspects of classical representation but Eisenman only implicitly acknowledges, as architecture has to feign being empirical by simulating a scientific message. Their critical difference is, however, revealed by Eisenman understanding the classical in architecture as fundamentally flawed and remaining a fiction unaware of its fictive condition, whereas Foucault envisions the collapse of the classical episteme through the analytic of finitude and the impossibility to resolve the contradiction that the historically limited empirical must be the origins of representation while offering the conditions and possibility of knowing. Eisenman resolves this conflict by rejecting verification and proposing an independent syntax. His pseudo-dialectic approach is essentially anti-representation, anti-reason, and anti-history, declaring a 'non-classical' and fictional architecture. It is 'an expansion beyond the limitations presented by the classical model to the realization of *architecture as an independent discourse*, free of external values'.<sup>11</sup>

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<sup>11</sup> Eisenman, *The End*, p. 166. As Diane Ghirardo points out, Eisenman's position only appropriates an earlier critique by Manfredo Tafuri in *Modern Architecture*: 'In 1976, Tafuri described the "exasperated formalism" of Eisenman as producing "sadistic" spaces precisely because "only by ruling out all reasons and demands having nothing directly to do with architecture can Eisenman keep his architectural language intact.' See 'Manfredo Tafuri and Architecture Theory in the U.S., 1970–2000', *Perspecta*, 33 (2002), 38–47 (p. 43).

The non-classical, asserts Eisenman, overcomes the destructive influence of the classical, as conscious of its simulated conditions, it 'dissimulates' and is internally motivated. This 'leaves untouched the difference between reality and illusion' and is a 'representation of itself, of its own values and internal experience'.<sup>12</sup> Being syntactic, architecture becomes an act of unintentional 'writing' instead of purposeful image production, and is read as 'traces' that signify their internal motivation of directionless becoming. This definition of the non-classical, although similar to Foucault terms of *human sciences* or *counter-sciences*, denies the analytical function and epistemological dimension these contain. Driven by a threefold denial of representation, reason, and history, Eisenman misconstrues the classical in architecture as modern, in order to announce that Modernism failed its claim to modernity by prescribing to the classic.<sup>13</sup>

Eisenman omits that at the turn of the nineteenth century with the theories by Quatremère and Durand a shift in the meaning of the classical occurred, which differed from the classical episteme and Renaissance doctrine, despite retaining elements of classical meaning as codified by the eighteenth-century normative discourse in France. Based on precisely the same terms advanced by Eisenman—representation, reason, and history—their theories argued for a syntactic structure and artificial language of architecture, and already introduced a diagrammatic typal and typological idea, which redefined the internal motivation of architecture. Quatremère compared this motivation of architecture to universal grammar, fictive writing, and poetical invention, avoiding a re-inscription in and formalisation of modes of representation—and Eisenman employs the same concept of fictional writing in his definition of the non-classical.

Perhaps more accurately, the confrontation of the classical at the turn of the nineteenth century did not result in a complete epistemological rupture but a significant alteration of the classical towards the modern. Quatremère's concept of type, and Durand's morphological typology to a lesser degree, resist representational verification in a classical sense and are principally independent from representation by deploying abstraction as a means to construct analytical and epistemological structures of thought. Even Durand, by borrowing from Monge's descriptive geometry and Cuvier's diagrammatic method, disassociated description from visual perception and representation of identity. He therefore rejected 'artistic' representation and claimed that disposition conceptualises *any* building at once. Often misunderstood, the *Précis* had no representational but only methodological value. Similarly, Quatremère's notion of type did not signify anything material but an ideated essence and didactic potential. This epistemological slippage rather than rupture was conditioned by a new historicity and

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<sup>12</sup> Eisenman, *The End*, p. 167.

<sup>13</sup> Eisenman claims that in architecture, what is thought modern in Foucault's terms is classical, and the classical in turn modern. He seems to disregard that Foucault recognises a continuation of the classical in the human sciences, which however differs from the classical of the previous episteme and acknowledges its fiction, which Foucault terms finitude. Compare Eisenman, *The End*, p. 155, n. 3.

empiricism that saw the fragmentation of the epistemological field and a discontinuity of chronology.<sup>14</sup>

The problem of historicity was essential to Quatremère and Durand's clarification of the origins of *meaning*, *truth*, and *continuity*, and in the inevitable process of historicisation and relativisation, history had to be framed in rational terms. Comparable to the methodological change from description to comparison in natural history, architecture shifted from an ideal, transcendental, and cosmological enquiry to a rational and abstract comparison. In an age of reason, abstraction signified an empirical, analytical function, believed capable of reclaiming a truth lost by the crisis of representation and providing a new epistemology. To resolve this crisis, architecture had to instrumentalise history in the production of new meanings, based on which theory and practice could be consolidated once again. The means adopted by architecture to converge history with form and aesthetics was initially seen in scientific classification of tabulated order.<sup>15</sup> The term *genus*, first vaguely used by Vitruvius and Alberti to connote different kinds of buildings, was clarified by Francesco Milizia in *Principii di architettura civile* (1781) and Laugier in an *Essay on Architecture* (1753), which made a normative and comprehensive ordering of building types in the eighteenth century possible.<sup>16</sup> The subsequent methodological advances in the typal and typological reasoning by Quatremère and Durand, led to a displacement of the *classical* through the abstract modus of representation inherent to diagrams. It initiated a restructuring of history, less concerned with ordering or reviving tradition than with relating architecture to its exteriority and thereby defining a new interiority and disciplinary knowledge. A knowledge that is analytical of the past and projective towards the present. History in Quatremère's terms is general, ahistorical, and contingent, but culturally specific, as can be seen in his argument for the independent development of architectural systems. Durand by comparison, understood history syntactically underlying the process of design through received forms and specific proportional or functional conventions of order. To him the knowledge and inventions of architecture derived from a historicising and entirely material process bound to the methods available to architecture. Thus, his morphological reading restricted invention to differentiation. In contrast, to Quatremère invention and knowledge were primarily metaphysical and internal to architecture, with the transposition from type to material models allowing speculative and authorial invention. Durand sought the formal deep

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<sup>14</sup> Compare with Foucault, who identifies Ricardo, Cuvier, and Bopp as marking the threshold to a modern episteme and the decline of representation. Foucault, 'Labour, Life, Language', in *The Order of Things*, pp. 250–302.

<sup>15</sup> Classification exemplifies the classical episteme and its relationship between representation and sign by incorporating *mathesis*, a 'calculable order', *taxonomia*, a representational 'system of signs', and *genesis*, an 'analysis of the constitution of orders on the basis of empirical series', relating continuity, chronology, and change through the discursive formations of origins, natural history, and general grammar. Compare with Foucault, *The Order of Things*, p. 53.

<sup>16</sup> Compare with Westfall, 'Building Types', in *Architectural Principles*, pp. 138–67.

structure of architecture and Quatremère the socio-cultural depth structure of type that could regulate architecture's material organisation and structure.

Typological ordering in architecture, although anticipated by d'Aviler in the seventeenth century, did not become instrumental for another century until Le Roy. His separation of history and theory acknowledged the irreversible conflict between representation and reason, requiring a rethinking of the historical framework. His attempt to reformulate the basis of architecture and its disciplinary instruments through history and theory was continued by Quatremère and Durand. Their search for the reasons of architecture shared important points: that architecture is ahistorical, yet its knowledge can be historicised; that architecture is abstract and conceptual (no longer natural); and that architecture can be considered a form of writing and a syntactic and socio-cultural production. This distinguished their theories from existing 'classical' thought and introduced the beginnings of a modern theory. They however disagreed on the impact of this epistemological shift on the theory and practice of architecture. Durand rejected any symbolic, metaphorical, or transcendental content of knowledge, turning to scientific positivism and functionalism. To him architecture is a formal system of abstract relations that can be reduced to operative diagrams, with their meaning rationally deducible from the comparison of similar morphological examples, therefore is entirely definable in structural terms. Comparison in Quatremère's theory was an analogous analysis, measured by the abstraction of types in a conceptual process of intellection. 'In this way', as Foucault writes about the function of comparison in the process of ordering, 'we establish series in which the first term comparison of measurement is a nature that we may intuit independently of any other nature; and in which the other terms comparison of order are established according to increasing difference.'<sup>17</sup>

Durand was possibly the first to unashamedly favour form over content. His meaning of architecture derived from form and its linear differentiation. Structural organisation, the rational requirement of architecture, became a justification for an intrinsically arbitrary selection process in support of formal complexification. History in this progression was ahistorical, an unspecific condition that could be adapted and utilised for new disciplinary knowledge as a taxonomy of form. This knowledge represented to Durand the universal principles of function and utility that could be systematised in methodical disposition and formalised through diagrams. Architecture was meaningful as long as it served utility. However, architecture was not just a representation of function but rather considered as the condition of function itself. Durand's normative disposition so implied a preoccupation with construction. Agreeing with the important role of construction in architecture, Quatremère though recognised that it could only 'relate to the building's genre', its general style.<sup>18</sup> While Durand was committed to the art of building and disputing that

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<sup>17</sup> Foucault, *The Order of Things*, p. 53.

<sup>18</sup> See 'Construction', in *Quatremère's Historical Dictionary*, pp. 118–19.

architecture was imitative—as he understood imitation only in terms of identity—Quatremère was preoccupied with the art of architecture as an abstract system. Distinguishing between *composition* and *conception*—‘the principal motif of an idea, its general correlations, and a vague idea of its disposition’—Quatremère saw another dimension in architecture that could not be explicated by utility or composition.<sup>19</sup> Defining composition, Quatremère expressed a devastating critique of Durand’s compositional methods: ‘one observes projects and vast *compositions* on paper assume a peculiar increase, wasting talents that are no longer required by the needs of society’.<sup>20</sup>

Architecture, so Quatremère believed, foremost serves society morally before attending to physical needs and technical innovations. Understanding architecture like Durand as a natural science, by only indirectly considering it in social terms was unsatisfactory. While Durand saw the efficacy of typology in its utopian completeness and reductive reasoning, allowing for great variety and combinations of forms, to Quatremère type was indivisible from social utility. Type as an instrument of socio-cultural intellection, consequently, had to exist prior to form and remain incomplete and abstract, as incompleteness enabled a different knowledge and conceptual speculation that emerges from within the interiority of architecture. With the productions of type depending on syntactic differentiation, the judgement of architecture could not just be predicated on formal representation but made possible by the metaphysical processes of architecture: typal reading and writing. This syntactic process grants architecture a partial autonomy from formal constraints and the specificity of its language, deflected by the socio-cultural context.

With the emergence of type in architecture in the early nineteenth century, its predicament arises twofold. Owing to its etymological roots and Aristotelian logic, it establishes a clear category and classification of knowledge. Type in this sense is the classification, instrumentalisation, systematisation, and abstraction of (historical) knowledge in architecture. The predicament of type then stems from the complication that its conceptualisation and appropriation, on the one hand, has a distinct metaphysical meaning and cultural form, and on the other, a distinct formal content and physical meaning. Underlying both is a method of comparison (conceptual, visual, and formal) that initiates a specific mode of knowing. This internal and disciplinary knowledge of architecture is made explicit by its syntactic and artificial language, which is operative at different levels of inventions, either formal or conceptual. Type as an epistemological category, establishes an ahistorical and self-determining territory that is abstract and general in its structure and inventions, while typology offers the conditional autonomy of the generic by diagrammatically relating a specific form to a comparative context and history of forms. The tension between content and form in the transpositions of type and

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<sup>19</sup> ‘Composition’, in *Quatremère’s Historical Dictionary*, p. 116. By opposing composition to conception, with his description of *motif* and *idea* synonymously applied to *type* in the *Dictionnaire d’architecture*, Quatremère equated them in respect to their conceptual qualities.

<sup>20</sup> ‘Composition’, in *Quatremère’s Historical Dictionary*, p. 117.

typology lastingly restructured the knowledge and practices of architecture, and provided the basis for a modern discipline.



## **PART II: SEMPER'S LIFE OF ART-FORMS AND TYPE**

*Art has a special language of its own, consisting of formal types and symbols that have changed in a variety of ways over the course of cultural history. They offer as many ways of making oneself understood as language itself.*

Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* (1860)

*Form may, it is true, become formula and canon; in other words, it may be abruptly frozen into a normative type. But form is primarily a mobile life in a changing world. Its metamorphoses endlessly begin anew, and it is by the principle of style that they are above all coordinated and stabilized.*

Henri Focillon, *The Life of Forms in Art* (1934)

# 1 TYPE AS MOTIVE

*Once the artist has realized his own modest position, he can without arrogance choose as his objective in the work in hand the process of becoming or, quite generally, the becoming of art, and set himself the following task:*

To comprehend in detail the law-like character [*Gesetzlichkeit*] that becomes apparent in art phenomena during the process of becoming, to deduce generally valid principles from what one has found, and in accordance with them to establish the basic features of an empirical theory of building. [...]

*The theory of building will lead to the realization that in the same way that nature, for all her abundance, is thrifty in her motifs, in the same way that she modifies the few basic forms or principles a thousandfold according to the evolutionary stage [...] in the same way architecture too is based on a few standard forms and principles, which through constant reappearance make possible infinite variations that are conditioned by the particular need of each case as well as by many other circumstances.<sup>1</sup>*

Gottfried Semper (1803–1879) was one of the most influential German architects of the nineteenth century. Unlike Quatremère and Durand, he was both an educator and a successful practising architect. His theories were not just didactic, but also concerned with its relevance to practice. Semper recognised a problematic nature of design research and was conscious that questions of history, theory, representation, and modalities of practice increasingly corresponded. In his intellectual effort to define an ‘empirical theory’ of building that is practical and material, as well as symbolic and cultural, he returned once again to the question of origins. He located architecture’s origin in the less exhausted styles of ancient cultures, which disclosed to him the fundamental and, as he believed, authentic conditions of invention unadulterated by subsequent advances in technology and its material transformations. Semper hoped that knowledge of these principles could provide the grounds for a reinvigorated methodical invention and overcome the cultural crisis and eclectic state of the arts in the mid-nineteenth century.

Interested in ethnography, Semper’s historic-cultural reading posited that the arts were initially driven by a need for protection from nature, religious cult, and an instinctive desire for adornment, expressed in abstract ornamentation and decoration of bodies, objects, and buildings. When these first general artistic motivations evolved into culturally specific ideas, the principles of architecture emerged as original formations deriving from elementary and

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<sup>1</sup> Gottfried Semper, ‘Vorwort’, *Theorie des Formell-Schönen* (ca. 1856–59), trans. by Wolfgang Herrmann as ‘A Critical Analysis and Prognosis of Present-Day Artistic Production’ in *Gottfried Semper: In Search of Architecture* (Cambridge: MIT Press, 1984), p. 259; hereafter cited as ‘Preface’, *Theory of Formal Beauty*.

persistent types, or 'motives'.<sup>2</sup> Semper identified these motives as the: hearth, roof, enclosure, and substructure.<sup>3</sup> Importantly, he recognised a developmental link between typical motives and the industrial arts, their technical processes, material conditions, and limitations, and corresponding to the four elements of architecture, he studied the technical arts of ceramics, carpentry, textiles, and masonry. Based on this thesis, Semper argued that the emergence of architecture and the fine arts could only be explained by a preceding development of functional forms and artistic traditions in the technical arts as first distinct cultural productions.<sup>4</sup> This argument destabilised the conventional separation between fine arts and crafts, and abandoned the Vitruvian precepts of *firmitas*, *utilitas*, and *venustas*.<sup>5</sup> It suggested artistic synthesis as depending on shared origins in minor and essentially non-imitative art-forms. With this radical challenge of academic consensus, Semper became interested in the 'variable coefficients' of artistic formations and, like Quatremère, took recourse to studies of archaeology, philology, and art history in order to re-contextualise and clarify the productions of architecture through universal ideas embodied in type and typicality. The early development of the arts and their primitive state became the key to explicate artistic invention: 'Do not believe that my concern for development at the beginning of art is superfluous. On it is based the idea that I propose to carry through the entire work, the red thread that binds it together.'<sup>6</sup>

Drawing from a pervasive nineteenth-century scientific method of comparison, especially its application in the analysis and ordering of paleontological 'evolution' by Cuvier but also its use in comparative grammar by linguists such as Franz Bopp, Friedrich Schlegel, and Jacob Grimm, Semper's ambition was to establish architecture as an equivalent comparing 'science' that could consider natural laws by systematically studying functional rather than formal relations.<sup>7</sup> However, function meant to Semper not just technical utility or structural rationalism, as to Durand or Eugène Emmanuel Viollet-le-Duc, but had cultural and symbolic connotations. Applying the comparative method to the proto-functional analysis of

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<sup>2</sup> Semper uses 'motif' and 'motive' interchangeably. Whereas *motif* denotes an artistic theme, emblem, pattern, or compositional idea, the etymologically related *motive* also points to an underlying inner but also external motivation to act in general. Throughout his writings, he is interested in both, an artistic but also a cultural motivation and I therefore use 'motive' in the following.

<sup>3</sup> Semper uses 'substructure' synonymous with *mound*, *terrace*, or *basement*.

<sup>4</sup> As Joseph Rykwert points out, in the year of his death in 1879, Semper's assumption was contradicted by the 'discovery' of figurative paintings dating back to the Stone Age in the Altamira cave in Spain. It was taken as evidence that an 'art' of painting existed prior to the development of technical arts. See, 'Semper and the Conception of Style', in *Gottfried Semper und die Mitte des 19. Jahrhunderts* (Basel: Birkhäuser Verlag, 1976), pp. 67–82.

<sup>5</sup> Kenneth Frampton discusses Semper's rejection of Vitruvian tradition in 'Rappel à l'ordre, the Case for the Tectonic', *Architectural Design*, 60.3–4 (1990), 19–25.

<sup>6</sup> Gottfried Semper in a letter to Eduard Vieweg (24 February 1850), publisher of *Vergleichende Baulehre* (a progenitor to *Der Stil in den technischen und tektonischen Künsten*), as cited by Harry Francis Mallgrave in *Gottfried Semper: Architect of the Nineteenth Century* (New Haven: Yale University Press, 1996), p. 164.

<sup>7</sup> Cuvier in fact opposed the evolutionary theories by Jean-Baptiste Lamarck and Étienne Geoffroy Saint-Hilaire, supporting catastrophism and abrupt revolution. However, Darwin's theory of evolution was influenced by Cuvier's morphological concept of 'correlation of the parts', providing a mechanism to explain heredity by comparing function to form, and his improved system of classification based on phyla.

buildings according to historical, formal, and structural taxonomies, Semper therefore turned to a classification of synthesising interactions between artistic motives and cultural factors.<sup>8</sup> The research into the nature of art-forms was aimed at the comparison of qualitative different stages in the development of the arts by relating their formal change and *material transformation (Stoffwechsel)*, which, only at times historically connected, constructed a non-linear typological order.

The suggested way through the field of tectonics will meet with the greatest of difficulties and will, at best, result in lacunae, blank stretches, and errors; but the abundance of the material will make it necessary to follow a set plan and put it into some order, to group what is related into families, and reduce what is derivative and complex to its original and simple state—a regulating and comparative procedure that will at least make it easier to obtain an overall view of the vast field of tectonics, which alone will yield some practical benefit.<sup>9</sup>

Semper's utilisation of empirical comparison to methodical invention considerably differed from Durand's, whose method reduced formal elements diagrammatically and reassembled them into complex geometric dispositions. In fact, Semper blamed Durand's formulaic doctrine for the loss of invention in architecture.<sup>10</sup> Contrary to Durand, Semper subordinated structure, form, and material to a higher artistic idea, defining a syntactic method in which form and material are only one organic part of artistic motives. In order to extract constant types and comprehend their cultural variation and relevance to practice, the question of style, carefully eschewed by Durand, was central to Semper, as style represents the specific expressions of type, the merging of collectivity and individuality.<sup>11</sup> Style, not in its metaphorical synonymy with taste, manner, or form as J-F Blondel defined it but in its denotation of internal consistency, was instrumental to understand the function of type and to appreciate its realised forms as specific yet temporary.<sup>12</sup> Through style as an intermediary, models as representation of a formative type could be defined without reducing type to models. This offered a methodological compromise between Quatremère's metaphysical and cultural idealism, and Durand's deterministic and utilitarian materialism.

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<sup>8</sup> Semper perhaps strove for a compromise between Durand's proto-functional and comparative method and the counter-positions found in largely speculative and pictorial approaches to comparison. For example Joseph Gandy in his 1830s manuscript *The Art, Philosophy, and Science of Architecture* and its illustrations for the *Comparative Architecture* series, conflated architecture with language and myth through visual taxonomies. For Gandy's pictorial strategy, see Brian Lukacher, 'Joseph Gandy and the Mythography of Architecture', *Journal of the Society of Architectural Historians*, 53.3 (1994), 280–99.

<sup>9</sup> Semper, 'Preface', *Theory of Formal Beauty*, pp. 259–60.

<sup>10</sup> Even though Semper rejected Durand's method at the École Polytechnique, its curriculum was widely adopted in other nineteenth-century polytechnics, and their practical agenda was his preferred model for teaching architecture.

<sup>11</sup> A historiography of the notion of style in architecture is provided by Harry Francis Mallgrave's 'The Idea of Style in Rhetoric and Architecture', in 'The Idea of Style: Gottfried Semper in London' (unpublished PhD thesis, University of Pennsylvania, 1983), pp. 2–63.

<sup>12</sup> For Blondel see Werner Szambien, 'The Meaning of Style', in *Companion to Architectural Thought*, ed. by Ben Farmer and Hentie Louw (London: Routledge, 1993), pp. 444–48 (p. 444).

To Semper form was a structural-symbolic representation comprehended from within its own immanent material-symbolic formation and reality, as well as from without as a cultural-symbolic abstraction. Accordingly, Semper's theory of type was a doctrine of style that understood the development of typical motives and their transformation in art-forms in relation to cultural and material influences. The examination of art-forms was no longer solely premised on aesthetic judgement but, comparable to Karl Bötticher's (1806–1899) concept of tectonics and distinction between core-form and art-form in *Die Tektonik der Hellenen* (1844–52), interpreted artistic development as the transformation of symbolic ornamental motives, as the material expression of mechanical forces, and as formed by technical processes of production. Yet, in distinction to Bötticher, Semper added that mechanically necessary form is only the beginning for a *becoming* of 'dynamic organic form', which subsumes the reality of material under a higher artistic idea.<sup>13</sup> In his 'practical aesthetics', Semper thus interpreted formal beauty as an immanent and purposive configuration of ideal types that internalise but never imitate the 'laws of nature', which concurred with Quatremère's concept of abstract imitation, but was a position elaborated in many nineteenth-century design doctrines.<sup>14</sup> With typical configuration subject to the 'coefficients' of style, a work of art is individual and experimental, but also deeply rooted in cultural practices, expressing a common psychology and demeanour of the people.

Like Quatremère, Semper employed etymology to elucidate the shared structure of architecture and language as cultural conventions. Discussing the formal attributes of textiles in the *Style in the Technical and Tectonic Arts; or, Practical Aesthetics: A Handbook for Technicians, Artists, and Patrons of Art* (*Der Stil in den technischen und tektonischen Künsten; oder Praktische Ästhetik: Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 1860–63), he noted that the arts and language owed their idea of protecting, covering, and enclosing to ancient concepts familiar from textiles.<sup>15</sup> The synonymity between dressing the body and spatial enclosures in architecture, for example, was confirmed by their etymology: 'In all Germanic languages the word *Wand* [wall], which has the same root and basic meaning as *Gewand* [garment], directly alludes to the ancient

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<sup>13</sup> The concepts of 'organism' and 'organic form' have a long intellectual history that was significantly transformed by Cuvier and then became absorbed in the architectural theories by Semper and Eugene-Emmanuel Viollet-le-Duc; see Joseph Rykwert, 'Organic and Mechanical', *RES: Anthropology and Aesthetics*, 22 (1992), 11–18.

<sup>14</sup> The appropriation of 'laws of nature' for design was prolific in the nineteenth century. It informed the doctrine of the Department of Science and Art in London, where Semper taught in the mid-1850s. David Brett identifies three distinct approaches to absorb an 'art-botany': empiricism based on 'natural facts' (John Ruskin), a natural philosophy based on 'conventional drawing' (Christopher Dresser), and an evolutionary theory based on 'design by process' (Arthur Mackmurdo); see 'Design Reform and the Laws of Nature', *Design Issues*, 11.3 (1995), 37–49. The relationship of Victorian theories to natural philosophy is also discussed by Keyser, 'Ornament as Idea', pp. 127–44.

<sup>15</sup> Compare Gottfried Semper, *Der Stil in den technischen und tektonischen Künsten oder praktische Ästhetik: Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 2 vols (Frankfurt and Munich: Bruckmann, 1860–63). English translation: *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*, trans. by Harry Francis Mallgrave and Michael Robinson, with introduction by Harry Francis Mallgrave (Los Angeles: Getty Publications, 2004), I, p. 113.

origin and type of the *visible* spatial enclosure.<sup>16</sup> Semper therefore argued for the socio-cultural roots of types and symbolism in the arts, explicated by their use in language, and formulated his main thesis of ‘dressing’ (*Bekleidung*) in architecture. *Dressing* explained the technical process of *material transformation*, when, for example, the spatial covering and enclosure of wall and ceiling—with the German word *Decke* denoting both ‘cover’ and ‘ceiling’—evolved from temporary textile screens into permanent and solid stone walls.<sup>17</sup> Throughout these stylistic transformations, the motive of textile decoration was maintained not in resemblance but in idea.<sup>18</sup> While the textile arts furnished Semper with exemplars of material transformation and typal persistence, the transposition of characteristics—for example, when movable implements become translated into the static qualities of architecture—was also evident in the other technical arts (i.e. ceramics, metalwork, carpentry, and stereotomy).

An innate instinct of building (*Bauinstinkt*) and persistent pre-architectural motives, so Semper, were the precondition for architecture to become monumental and achieve a *Gesamtkunstwerk*, which he like his friend Richard Wagner (1813–1883) understood as a union of the arts with life. Monumental art was formed by the processes of becoming in art-forms, however, less through an abstract imitation of nature than a ritualistic and symbolic abstraction of nature through technics and an architectural system of construction. This differed from Quatremère’s first explanation of architectural origins as preformed types (hut, cave, and tent) by presuming complete models, but concurred with his mature type-theory based on memetic architectural systems. Both saw abstraction as enabling the necessary de-contextualisation and conditional autonomy of architecture from pure materialism. In morphological studies, Semper consequently investigated the symbolic and typological conflation of internal material conditions with external factors arising from geographic, socio-cultural, historical, and personal influences, and their relation to higher typal motives. The recurrence of historical traditions hereby formed an analytical matrix, even though Semper insisted that artistic progress and ultimately its validity, while evolved from past traditions only is possible once traditions are disintegrated by contemporary culture, when styles are renewed by taking recourse to type. Defined by these collective limits, this process did not imply reductive determinism but affirmed artistic authorship, with artistic production only limited by the conceptual boundaries of persistent types.

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<sup>16</sup> Semper, *Style*, I, p. 248. Similarly, the importance of seams in textiles was retained in architectural tectonic junctions and their ornamental treatment, which are related in idea, as the German words *Naht* (seam, joint) and *Niehte* (rivet), or *Noht*, denote a ‘necessity’ (*Nothwendigkeit*). *Noht* also relates to *Knoten* (knot), which besides weaving is an important technical symbol essential to the textile arts and their derivative ornaments that occur both in architectural symbols and ornaments; compare with ‘The Structural Significance of the Seam’ and ‘The Seam as Artistic Symbol’, in *Style*, I, pp. 153–59.

<sup>17</sup> Compare Semper, *Style*, I, p. 248.

<sup>18</sup> This intrinsic relation between material *dressing* and architecture is still evident in the contemporary terms of ‘cladding system’ and ‘curtain walling’, as Rosemarie Haag Bletter points out in ‘On Martin Fröhlich’s Gottfried Semper’, *Oppositions*, 4 (1974), 146–53 (pp. 150–51). This argument is repeated, for example, by Joanna Merwood, ‘The Mechanization of Cladding: The Reliance Building and Narratives of Modern Architecture’, *Grey Room*, 4 (2001), 52–69.

## 1.1 THE SEARCH FOR ORIGINS IN SYMBOLIC DRESSING

Intending to become an engineer, Semper first studied mathematics at the University of Göttingen (1823), but soon converted to architecture and finally enrolled with Franz Christian Gau (1790–1853) in his private architectural school in Paris, where he trained for two years in the late 1820s.<sup>19</sup> Gau followed in his teaching a popular ‘Durandesque’ pedagogy and, having published his own studies on Egyptian architecture in *Antiquités de la Nubie* (1821–27), introduced Semper to the current debate on polychromy in architecture.<sup>20</sup>

Quatremère, who during his archaeological excursions in Italy with the painter Jacques-Louis David identified the Temple of Olympian Zeus in Agrigento in 1779, had instigated the polychromy debate. Based on philological studies, Quatremère concluded that Greek sculpture must have been polychrome.<sup>21</sup> The tradition originated from the decoration of early Greek idols, when the painting and material dressing of wooden mannequins first resulted in toreutics and eventually developed large chryselephantine statues, such as Phidias’s Zeus in the temple at Olympia. The perfection of Greek sculpture, Quatremère argued, depended on the development of technical skills and an increasing sophisticated use of colour. On the one hand, colour was part of an emerging artistic consciousness and purpose, which established symbolic and religious motifs, and on the other, served a practical function, with paint applied to homogenous surfaces to create variety and protect material from weathering or correct visual deficiencies. First promulgated in lectures at the Académie in 1804 and a preliminary study on the Olympian temple in *Sur la restitution du temple de Jupiter olympien à Agrigente* (1805), he consolidated his arguments in *The Olympian Jupiter, or the Art of Antique Sculpture Considered Under a New Point of View* (*Le Jupiter olympien, ou l’Art de la sculpture antique considéré sous un nouveau point de vue*, 1814).<sup>22</sup>

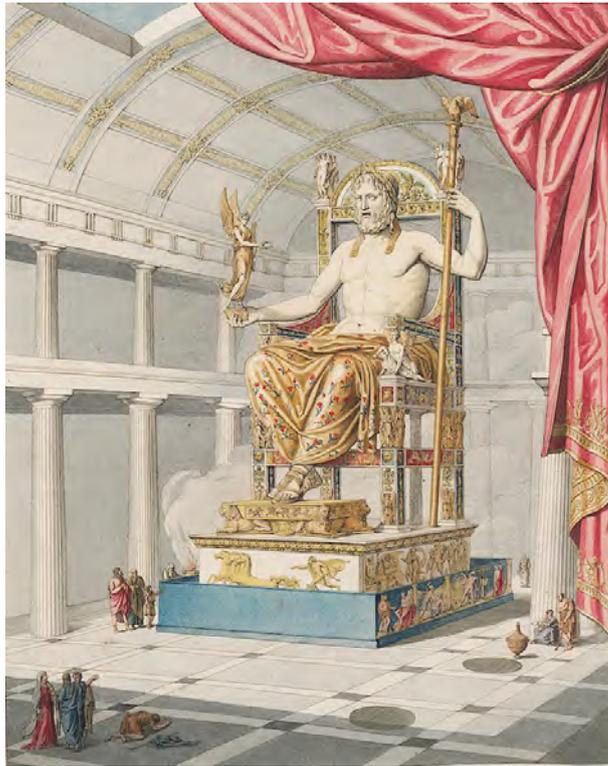
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<sup>19</sup> In Göttingen, Semper studied mathematics with Bernhard Friedrich Thibaut. Before attending Gau’s school, Semper was briefly enrolled in the architecture department of the Academy of Fine Arts in Munich (1825), where Friedrich Gärtner taught. However it seems that he hardly attended his classes. In fact Semper only spend two years in Paris (December 1826 to October 1827 and August 1829 to September 1830) and initially still intended to become a hydraulic engineer, even interrupting his architectural studies to work at the port of Bremerhaven (1827–29). More recent biographical information is given in Wolfgang Herrmann’s *Gottfried Semper: In Search of Architecture* (1984); Gudrun Laudel’s *Gottfried Semper, Architektur und Stil* (1991); Mallgrave’s *Semper: Architect of the Nineteenth Century* (1996); and Winfried Nerdinger and Werner Oechslin, *Gottfried Semper 1803–1879: Architektur und Wissenschaft* (2003).

<sup>20</sup> Despite educated at the École des Beaux-Arts under Charles Percier, Gau’s teaching was influenced by Durand; see Mallgrave, *Semper: Architect of the Nineteenth Century*; Hanno-Walter Kruft, *A History of Architectural Theory: From Vitruvius to the Present* (New York: Princeton Architectural Press, 1994); and Salvatore Pisani, ‘“Allein vieles ist besser, leichter, zweckmäßiger, wohlfeiler als wir es kennen” Sempers Lehrzeit in Paris und das akademische Ausbildungsprogramm’, in Winfried Nerdinger and Werner Oechslin, eds, *Gottfried Semper 1803–1879* (Munich: Prestel, 2003). Gau’s polychrome studies of Egyptian architecture were published as *Antiquités de la Nubie* (1821–27). In addition, Gau completed François Mazois’s polychrome work *Les Ruines de Pompeii* (1829–38) after his death.

<sup>21</sup> The temple appeared in texts by Diodorus and Pausanias, who described the statue of the Olympian Jupiter as richly adorned in ivory, gold, and precious stones.

<sup>22</sup> The different lectures and publications in which Quatremère discusses polychromy are summarised by Paolo Bertoncini Sabatini, ‘Antoine Chrysostôme Quatremère de Quincy (1755-1849) and the Rediscovery of



**Fig. 13 Le Jupiter olympien, vu dans son trône et dans l'intérieur de son temple**  
 From Antoine-Chrysostome Quatremère de Quincy, *Le Jupiter olympien, ou l'Art de la sculpture antique considéré sous un nouveau point de vue* (Paris: Firmin Didot, 1814)

Quatremère's claim challenged the established view of polychromy, only deemed acceptable for 'barbaric' Egyptian and early Etruscan art but considered incompatible with the Hellenic style, and suggested that classical Greek and Sicilian temples had close developmental links.<sup>23</sup> This contradicted the prevailing neoclassical doctrine of 'whiteness' codified by Winckelmann and Caylus, which defined the beauty of Greek statuary in terms of formal purity and emphasis of contour and form through proportion and light. Endorsing polychromy, Quatremère significantly relativised existing theories of classical Greece: 'I shall examine—after examining all the relative proofs—how widespread was the use of paints and colours in classical architecture. By this means, with an art form so closely connected to sculpture, I hope to prove how mistaken we have been about classical art.'<sup>24</sup> This insight forced him to revise his own architectural doctrine that substantially relied on the ideal of a Greek system of proportion and the principles of order, symmetry, and decorum. Consequently his new concept of abstract imitation abandoned the classical

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Polychromy in Grecian Architecture: Colour Techniques and Archaeological Research in the Pages of "Olympian Zeus", in *Proceedings of the Second International Congress on Construction History*, ed. by Bill Addis, et al (Exeter: Short Run Press, 2006), pp. 393–408.

<sup>23</sup> Quatremère's thesis coincided with an increasing interest in colour. For example, Goethe's *Zur Farbenlehre* (1810) was concerned with the phenomena of colour and its perception in the arts.

<sup>24</sup> Antoine-Chrysostome Quatremère de Quincy, *Le Jupiter olympien, ou l'Art de la sculpture antique considéré sous un nouveau point de vue: ouvrage qui comprend un essai sur le goût de la sculpture polychrome, l'analyse explicative de la toreutique, et l'histoire de la statuaire en or et ivoire chez les Grecs et les Romains: avec la restitution des principaux monuments de cet art et la démonstration pratique ou le renouvellement de ses procédés mécaniques* (Paris: Firmin Didot, 1814), pp. 30–31, as cited by Sabatini, 'Quatremère de Quincy (1755-1849)', p. 400.

claim to truthful representation and, marking a considerable theoretical shift, confirmed his commitment to an aesthetic judgement that was undogmatic in its definition of beauty by understanding the technical limitations of the arts, such as colour, as defining the means and potential of artistic achievement.<sup>25</sup>

The focus on technical skills and material investigation, suggested by Quatremère's thesis of polychromy, inspired many of his contemporaries, including the sculptor Antonio Canova.<sup>26</sup> Quatremère also motivated Jakob Ignaz Hittorff (1792–1867), a close friend of Gau, to extend the claim of colour to all formal buildings and monuments of Greek antiquity.<sup>27</sup> Hittorff declares that the Greeks employed 'one system' of polychromy, which complemented the architectural orders by providing the means to express a wider range of 'characters' and harmonising the plastic and decorative elements of buildings. Following archaeological excavation in Sicily (1823–24), Hittorff generalises his findings in a controversial colour system, which he applies in the following year to his restoration of temples in Agrigentum and Selinus, first published with Ludwig Zanth in *Architecture antique de la Sicile* (1827–30).<sup>28</sup> In the prospectus to the book—which later encouraged the polychrome fantasies of the Romantics led by Henri Labrousse—Hittorff writes that the 'traces of this system leave no doubts as to the practice adopted by the ancients of colouring their sculpture and architecture, enlivening with colour and painted ornament not only the insides of their temples, but also the external walls of the cella, the columns, architraves, metopes, cornices, pediments and even the tiles'.<sup>29</sup> His conclusions were factually supported by evidence widely published around the 1820s, with many of these authors owing their thesis directly to Quatremère.<sup>30</sup> Similarly, Hittorff's own findings do not

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<sup>25</sup> This argument was first developed in the *Essay on Imitation* (1823) and subsequently led to the revisionist entries in his dictionaries (1825 and 1832).

<sup>26</sup> Quatremère encouraged Canova to use polychromy in his sculptures, *Hebe* (1796) and *Religion* (1815); see Ian Wardropper and Thomas F. Rowlands, 'Antonio Canova and Quatremère de Quincy: The Gift of Friendship', *Art Institute of Chicago Museum Studies*, 15.1 (1989), 38–46 and 85–86.

<sup>27</sup> Hittorff came from Cologne to Paris in 1810 with Gau to study architecture. He met Quatremère at the Wednesday *salon* of François Gérard, who allegedly urged him to excavate in Sicily for more polychrome evidence; see Harry Francis Mallgrave, 'Introduction', in Gottfried Semper, *The Four Elements of Architecture: And Other Writings*, trans. by Harry Francis Mallgrave and Wolfgang Herrmann (Cambridge: Cambridge University Press, 1989), p. 3; hereafter cited as *Four Elements and Other Writings*.

<sup>28</sup> Hittorff's friendship with T. L. Donaldson and Gau, but especially William Harris and Samuel Angell's discovery of painted metopes in Selinus in March 1823, encouraged his excavations in competition to those by Leo von Klenze, published in *Der Tempel des olympischen Jupiter von Agrigent* (1827); see Robin Middleton, 'Hittorff's Polychrome Campaign', in *The Beaux-Arts: And Nineteenth-Century French Architecture*, ed. by Robin Middleton (London: Thames and Hudson, 1982), pp. 176–85.

<sup>29</sup> Jacques-Ignace Hittorff, 'Prospectus', in *Architecture antique de la Sicile* as cited by Middleton in 'Hittorff's Polychrome Campaign', in *The Beaux-Arts*, p. 185.

<sup>30</sup> Evidence of polychromy in important Greek monuments, including the Parthenon, was found from 1799 to 1802 by Thomas Bruce, William Leake and Edwards Dodwell, and in the 1810s by Charles Robert Cockerell, Carl Haller von Hallerstein, Otto Magnus von Stackelberg (*Der Apollotempel zu Bassae in Arcadien und die daselbst ausgegrabenen Bildwerke*, 1826), and Peter Oluf Brøndsted (*Reisen und Untersuchungen in Griechenland*, 1825–30). Yet, already James Stuart and Nicholas Revett in *Antiquities of Athens* (1762–1816) published proof of polychromy found at the temple of Illissus. But it was not given importance until the publication of its second edition (1825–30), issued with a supplementary fourth volume detailing polychrome findings by William Kinnard, T. L. Donaldson, and William Jenkins.

provide significant new material evidence but follow in essence Quatremère and are, as he admits, 'speculative' and 'illustrative', which reveals his aesthetic rather than archaeological interest in the matter. Henri Labrouste (1801–1875) later stated that Hittorff, despite causing a controversy, in effect upheld the neoclassical doctrine of the Académie.<sup>31</sup> But by the late 1820s, polychromy was an undeniable fact, with only its extent and manner of application remaining a subject of intense disagreements. When Hittorff presented his temple restoration officially to the Académie in 1830, the archaeologist Désiré Raoul-Rochette (1790–1854) and successor to Quatremère as permanent secretary of the Académie in 1839, derided his proposal and changed his previous assessment of 'satisfactory' to 'arbitrary and hypothetical'.<sup>32</sup>

The ensuing public quarrel between Hittorff and Raoul-Rochette spread the debate throughout Europe and resulted in a re-evaluation of the classical tradition.<sup>33</sup> Raoul-Rochette's position was blamed on Quatremère's influence, by paradoxically claiming that he rejected architectural polychromy. Quatremère's disagreement in 1829 with Horace Vernet, the director of the French Academy in Rome, was given as evidence that he disapproved of Labrouste's speculative polychrome *envois*.<sup>34</sup> Recognising during his studies in Rome that an increased archaeological knowledge questions the reliability of transmitted antique conventions, Labrouste became interested in the connection between art and social and cultural diversity, concluding that a definition of a universal classical canon and its translation to contemporary architecture is extraneous.<sup>35</sup> Demanding that modern architecture has to be a poetically constructed rational reality, he proposes to substitute conventionalised signs with layered and immediate transparent allegories.<sup>36</sup> However, despite Quatremère's unquestionable belief in classical orders, which would be permanently debased by Labrouste and the Romantic, his argument with Vernet was over

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<sup>31</sup> See Henri Labrouste, *Notice sur Hittorff* (1868), pp. 7–8, as recounted by David van Zanten, 'Architectural Polychromy: Life in Architecture', in *The Beaux-Arts*, p. 205–06.

<sup>32</sup> The presented paper was entitled 'De l'architecture polychrome chez les Grecs; ou restitution complète du temple d'Empédocle dans l'acropole de Sélinonte'. Hittorff later incorporated this into his book *Restitution du temple d'Empédocle à Sélinonte, ou l'architecture polychrome chez les Grecs* (1851).

<sup>33</sup> The polychromy debate is detailed by David van Zanten, *The Architectural Polychromy of the 1830s* (New York: Garland Publishing, 1977); van Zanten, 'Architectural Polychromy', in *The Beaux-Arts*; and Mallgrave, 'The Debate on Polychromy', in *Semper: Architect of the Nineteenth Century*, pp. 25–38.

<sup>34</sup> Labrouste was rewarded a stipend by the École des Beaux-Arts to study antique monuments at the French Academy at Rome. His contentious projects of 1828, sent to Paris for assessment, included three temple reconstructions at Paestum. The commonly held view that Quatremère opposed polychromy in architecture and Labrouste's reconstructions is, for example, expressed by Alice T. Friedman in 'Academic Theory and A.-L.-T. Vaudoyer's *Dissertation sur l'architecture*', *The Art Bulletin*, 67.1 (1985), 110–23 (p. 111).

<sup>35</sup> On Labrouste's role in the Romantic's challenge of the classical doctrine, see Barry Bergdoll, *European Architecture: 1750–1890* (Oxford: Oxford University Press, 2000), pp. 175–84.

<sup>36</sup> Martin Bressani and Marc Grignon claim that Labrouste in the design of the Bibliothèque Sainte-Geneviève used a romantic strategy borrowed from Victor Hugo's *Notre-Dame de Paris*, seeking a poetic truth through a 'reality effect', which allowed a non-conventionalised reading, and offered depth of meaning through layered allegories. Understood in this sense, even a rationalist explanation of the building is a fictional effect of reality. See 'Henri Labrouste And The Lure Of The Real: Romanticism, Rationalism And The Bibliothèque Sainte-Geneviève', *Art History*, 28.5 (2005), 712–51.

administrative powers within the Académie.<sup>37</sup> In any case, around the time of the dispute, Quatremère must have worked on revisions for the *Historical Dictionary* of 1832, in which he acknowledges an extensive use of colour, even though like Hittorff, he does not see it as an essential element of architecture but an accessory means of character (and a protection from weathering):

We must say, for we have ascertained it ourselves, that most of the temples, either at Paestum or in many an ancient city in Sicily, are constructed of a stone that is not suited to polish, and thus it was deemed necessary to cover it with a coat of stucco. However, this material was not painted in a uniform manner. Numerous vestiges of colour prove that this stucco received the most varied tones; that the divisions of the entablature had different hues; that the triglyphs and the metopes, the capitals and the annulets; and even the architrave's soffit, were coloured in different ways.<sup>38</sup>

Having intimate knowledge of the unfolding debate through Gau and Hittorff, Semper left Paris after the July Revolution to travel to Italy, Sicily, and Greece (1830–33), determined 'to collect the still existing traces of polychromy and to establish a system that will once again reconcile antiquity with its surroundings in space and time'.<sup>39</sup> Accompanied by Jules Goury, he found convincing evidence of paint, especially on the Parthenon.<sup>40</sup> Based on their findings, Semper concluded: 'The ancients not only painted the interior of their temples in the most elaborate way but they also richly covered (*bedeckt*) the exteriors. The noblest white marble was dressed (*bekleidet*) with bright colors; even the bas-reliefs were painted.'<sup>41</sup>

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<sup>37</sup> This interpretation is supported by recent studies of the argument between Quatremère and Vernet; see Stephen Bann, 'Quarrels Between Painting and Architecture in Post-Revolutionary France', Canadian Centre of Architecture (CCA), Study Centre Mellon Lecture (17 April 2003) <[http://www3.cca.qc.ca/pages/Niveau3.asp?page=mellon\\_bann](http://www3.cca.qc.ca/pages/Niveau3.asp?page=mellon_bann)> [accessed 23 November 2010], and Pierre Pinon, 'Il valore della ricerca archeologica', in *Henri Labrouste, 1801–1875*, ed. by Renzo Dubbini (Milan: Electra, 2002). It seems implausible that Quatremère would object to Labrouste, but ignore similar *envoires* sent by Félix Duban, Labrouste's fellow student in Rome, and many more increasingly extreme colour explorations over the following years by *pensionnaires*, particularly in the period from 1830 to 1836 (including Théodore Labrouste, Marie-Antoine Delannoy, and Simon-Claude Constant-Dufeux).

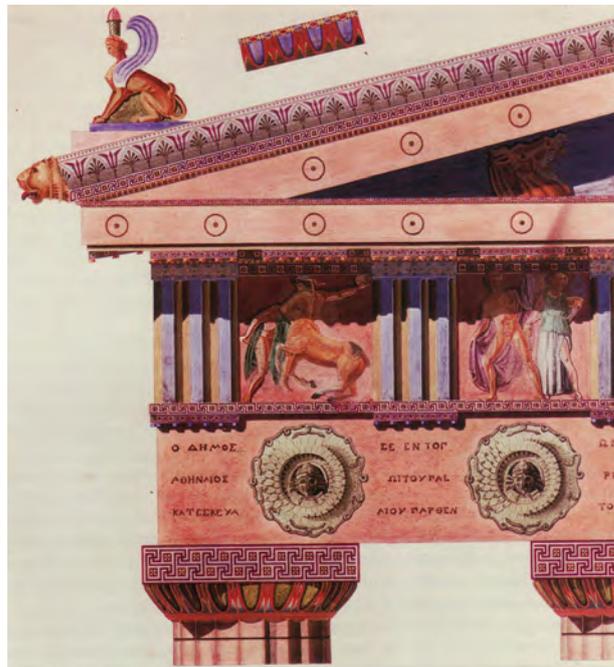
<sup>38</sup> 'Colour', in *Quatremère's Historical Dictionary*, p. 112. Quatremère points out similar findings in Athens, in the Parthenon, the Propylea, and the Temple of Theseus.

<sup>39</sup> Gottfried Semper, *Vorläufige Bemerkungen über bemalte Architektur und Plastik bei den Alten*, (Altona: Hammerich 1834). English translation: *Preliminary Remarks on Polychrome Architecture and Sculpture in Antiquity*, trans by Harry Francis Mallgrave and Wolfgang Herrmann, in *The Four Elements of Architecture and Others Writings* (Cambridge: Cambridge University Press 1989), pp. 45–73 (p. 57). Semper left in September 1830 for Rome, Naples, and Pompeii, before travelling to Paestum and Sicily, and continuing to Greece (Oct 1831), where he mainly studied Athenian monuments while acting as personal secretary to the German diplomat Friedrich Theodor Thiersch. In spring 1832, he returned to Rome.

<sup>40</sup> Goury in 1832 continued to travel with Owen Jones to Egypt, Constantinople, and Granada (Alhambra).

<sup>41</sup> Semper in a letter to one of his brothers (11 April 1832), as quoted by Mallgrave, *Semper: Architect of the Nineteenth Century*, p. 45.

On his return to Germany, Semper outlined his conclusions, which largely owed to Gau, in the pamphlet *Preliminary Remarks on Polychrome Architecture and Sculpture in Antiquity* (Vorläufige Bemerkungen über bemalte Architektur und Plastik bei den Alten, 1834). In its preface, he states his intention to readdress a widespread lack of imagination caused by two ‘paper currencies’: the design on gridded paper by Durand and the eclectic copying of historical designs on tracing paper. By upholding stereotypes and formulas, both impoverished composition. ‘We desire art; we are given numbers and rules’, Semper laments, which are deficient for invention, as ‘art knows only one master—the need’, meaning the demands by modern society (conveniences and grace), material specificity (brick, wood, metal, iron, and zinc), and culture.<sup>42</sup> The Greeks as the first democratic society were able to artistically fulfil ‘need’, as the ‘most important need of a nation in every respect, including art, is its religion and system of government’.<sup>43</sup> They endowed architecture with social utility and set an example: ‘Not to copy their dead alphabet, but to imbibe their spirit.’<sup>44</sup> The arts are therefore always expressions of a socio-political order and ambition, so Semper, before they can be aesthetically judged.<sup>45</sup>



**Fig. 14 Parthenon Entablature, 1833**

From Gottfried Semper, *Anwendungen der Farben in der Architektur und Plastik*, Heft 1: Dorisch-Griechische Kunst (Dresden: Fürstenau & Co, 1836)

But the arts are also motivated by a primitive need of man to ‘play’ and ‘adorn’. While the first colour use was inspired by an imitation of nature, the usefulness of varnishing to preserve and enhance appearances of materials soon became equally important. The first

<sup>42</sup> Semper, *Preliminary Remarks*, p. 47.

<sup>43</sup> Semper, *Preliminary Remarks*, p. 47.

<sup>44</sup> Semper, *Preliminary Remarks*, p. 48.

<sup>45</sup> Compare with: ‘Everything was situated to promote civic spirit and the public welfare. Nothing was arbitrarily laid out by the rule of symmetry; the monuments stood where importance and destination demanded, seemingly without rules, but determined by the higher conceptual laws of the political system.’ Semper, *Preliminary Remarks*, p. 49.

decorative impulses, combined with rising religious notions, resulted in representational and figural painting and sculpture that progressively articulated flat architectural surfaces. The use of colour improved the spatial effect of half-reliefs by adding the illusion of light and shadow that clarified form.<sup>46</sup> Thus the painting applied to the first human shelters, intimately linked the emergence of the arts and their material forms with polychrome expression. Due to this interrelated development of the arts in the articulation of surfaces, architecture represented their 'quintessence' and a unifying framework: architecture became monumental.

With architecture conditioned by the technical arts, and by recognising polychromy as unspecific to particular styles but essential to all artistic production, Semper in the *Preliminary Remarks* undermines the independence of Greek antiquity. Contextualising Greek styles, their artistic achievements depended on a continued tradition that both predated and outlasted their era.<sup>47</sup> However, artistic and polychrome development is not linear but cyclical, as even Greek art degenerated during the Ionic and Corinthian period, a style adopted by the Romans and leading to a demise of polychromy. Although agreeing with Hittorff that all Greek monuments were polychrome, Semper adds that depending on geographic location and artistic influences, different architectural and polychrome systems developed, specifically those of the Egyptian-Doric and Oriental-Attic style.<sup>48</sup>

The *Preliminary Remarks*, even if unintended as a scholarly treatise, was evidently unfamiliar with the technical and academic discourse of polychromy that had advanced in the meantime, and was derided as lacking credibility.<sup>49</sup> Polychromy, so Semper, did not question the validity of antiquity, but provided the basis to reposition the relevance of ancient Greek to contemporary art. Through polychrome reinterpretation, architecture could be reconsidered in its real meaning as a *Gesamtkunstwerk*, correcting its demise following the (Renaissance) monochrome misinterpretation of Classicism, when 'we in our mindless aping and for our miserable needs used those mammoth bones of a faded past in the conditions that we found them'.<sup>50</sup> Polychromy was fundamental to the (Greek) conceptualisation of art and provided the means to express symbolic and artistic intentions,

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<sup>46</sup> Early examples of this artistic combination are found in the monuments of Nubia and Egypt, which Semper was familiar with through Gau, and early Etruscan figurines. Gustav Klemm in the *Allgemeine Cultur-Geschichte der Menschheit* (1843–52), similar to Semper, described how man imitates nature by first notching and scratching images into surfaces and later raising them into relief.

<sup>47</sup> 'All periods of high artistic accomplishment agree in the disputed principle of polychromy. The Greeks, the Moors, the Normans, the Byzantines and pre-Goths, even the Gothic masters themselves practiced it.' Semper, *Preliminary Remarks*, p. 59. Karl Friedrich Rumohr and Karl Otfried Müller had already presented similar arguments, but Semper was the first to apply this to architecture.

<sup>48</sup> Semper thought that Hittorff's colour restoration of Temple B in Selinus was 'too pale and subdued' compared to other samples found from that period. See Semper, *Preliminary Remarks*, pp. 66–67.

<sup>49</sup> Semper, for example, claimed that all Roman white marble monuments had been polychrome, including the Coliseum (painted in red). He referred to Stuart and Revett, Humphry Davy, Hittorff, Brøndsted, Serradifalco, and others, but his references were through secondary sources, and largely influenced by Gau; compare Mallgrave, *Semper: Architect of the Nineteenth Century*, pp. 56–57.

<sup>50</sup> Semper, *Preliminary Remarks*, p. 54.

and was climatically and culturally specific. Even as late as 1869, Semper reiterates that polychromy and the first principles of style are fundamental to establishing the norms for any future artistic production.<sup>51</sup> While Gau and Karl Friedrich Schinkel favourably received Semper's *Preliminary Remarks*, Raoul-Rochette and, in particular, Franz Kugler (1808–1858) in *Über die Polychromie der griechischen Architektur und Sculptur und ihre Grenzen* (1835) vehemently refuted his position.<sup>52</sup> Although Semper would not return for a long time to his studies on polychromy, its problem would remain fundamental to his theory of the arts and architecture.<sup>53</sup>

Semper in the *Preliminary Remarks* attacks Winckelmann for erroneously prolonging 'the outdated habit of seeing sculpture as white' and claiming that styles have simple origins that mature to superfluity and decline, instead he contends that basic forms are always already 'highly decorated and glittering from the start'.<sup>54</sup> These exuberant forms become organised by processes of production as defined by crafts and guilds, which at first stabilise the 'chaos' of the arts but eventually result in new traditions and styles. Greek art, for example, could only come to full fruition during the old-Doric period, when the stagnancy imposed by political oppression and artistic traditions were surmounted, and received polychrome principles were reinvented as new decorative motives and symbolic ornaments. In the applied arts they 'became elevated and ennobled by technical perfection' while the high arts of painting, sculpture, and architecture abstracted 'secrets' from nature.<sup>55</sup> In this process of invention, the artist would 'simplify, modify, or enrich' existing ornamental motives, 'but he could not violate their type'.<sup>56</sup>

Although the 'foil' to all arts, architecture depends on its unity with them and is analysable in its formation by studies of each contributing art. For instance, the developmental origin of the bead-fillet was a synthesis of painterly and sculptural techniques that created an

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<sup>51</sup> 'Therefore, the search for the origin and development of architectural styles is as justified as similar investigations in the fields of natural sciences or comparative linguistics, yet it is prompted in particular by the fact that inquiries of this kind in the arts can lead to the most important principles and norms for new creative activity.' Gottfried Semper, 'On Architectural Styles: A Lecture Delivered at the Rathaus of Zürich' (1869), trans. by Mallgrave and Herrmann in *Four Elements and Other Writings*, p. 266.

<sup>52</sup> Semper presented his findings to Schinkel in 1833 on return to Germany from Italy and continued to stay in contact with him.

<sup>53</sup> Despite announcing a further comprehensive study under the title of *Die Anwendung der Farben in der Architektur und Plastik*, which was to detail archaeological evidence of polychromy on large colour plates, Semper only returned to this in earnest some seventeen years later in *Die Vier Elemente der Baukunst: Ein Beitrag zur Vergleichenden Baukunde* of 1851. The failure to complete the book is commonly explained by his appointment in 1834 as professor and head of the architecture department at the Dresden Academy of Fine Arts and his thriving practice in Dresden. Semper only drafted the first volume of *Die Anwendung der Farben*, but later claimed being 'frightened away from publishing an announced and fully prepared work on antique polychromy' by Kugler's critique; see Semper, 'On Architectural Styles', p. 265. He however gave on 13 January 1838 a lecture to the Sächsischen Kunstverein entitled 'Über die Anwendung der Farben in der Baukunst', proving the sustained importance of polychromy to him; see Mallgrave, *Semper: Architect of the Nineteenth Century*, p. 70, n. 3.

<sup>54</sup> Semper, *Preliminary Remarks*, pp. 57 and 52.

<sup>55</sup> Semper, *Preliminary Remarks*, p. 54.

<sup>56</sup> Semper, *Preliminary Remarks*, p. 63.

enhanced surface effect for architecture. Semper summarises the six developmental stages of the bead-fillet as an advance from a ritualistic and mystical representation to a material re-representation through the technical means of the arts, including colour.<sup>57</sup> Despite a predominantly materialist reading of ornament, Semper acknowledges the intrinsic relations between symbolism and tectonics. Ornament, he notes, derives from ritual and culture, while its symbolic codification in material forms of representation develop with an advance of artistic technique.<sup>58</sup> Quatremère's *Mémoire* anticipated this explanation of ornament and Semper's later interest in the relation between festival motives and architectural monuments:

But many tried too hard to find the origin of ornament in nature. In vain people pretend that plants fortuitously growing around buildings or seeds brought by the wind to the various parts of the huts gave birth to this type of embellishment. It is more reasonable to say on this subject that sacred buildings were decorated with flowers, fruits, and plants on festival days as offerings to the divinity, just as they were with the heads of victims, the instruments of sacrifice, and other similar things. In order to perpetuate these ephemeral ornaments, sculpture rendered all these different objects in stone.<sup>59</sup>

Quatremère too saw ornament as rituals that have become subject to artistic interpretation and invention through abstract imitation, an explanation rephrased by Semper in his later lecture 'On Architectural Symbols' (1854): 'Architecture is an art of invention, that is to say, it has not, like the other arts of design, the immediate imitation of nature for its object. Works of architecture have no prototypes in nature, they are entirely the results of imagination, experience, and combining science.'<sup>60</sup> What distinguishes Semper from Quatremère's conception of invention is his insistence on empirical comparison as the analytical framework to study the history of design. Semper hereby accepts the necessary compromise between the freedom of architecture and its constraint by 'natural laws', the limits by mechanics and utilitarian need for protection, which is to him explicated by the cultural history of architecture and society.<sup>61</sup> Whereas to Quatremère and Laugier the hut

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<sup>57</sup> The stages of development are: First, hanging of sacrificial braids made from the wool of the sacrificed animal. Second, scratching or painting of sacrificial braids on walls as the mystical representation of sacrifice. Third, its re-representation in notched light relief combined with a painted string of beads. Fourth, sharp-edged raised fillets with painted beads. Fifth, carved raised round-fillets with painted beads. And sixth, notched astragal enhanced by colour. Compare Semper, *Preliminary Remarks*, pp. 63–64.

<sup>58</sup> Semper clarifies this thesis in his London lecture 'On Architectural Symbols' of 1854 that greatly owes to Bötticher.

<sup>59</sup> Quatremère, *Prix Caylus*, MS, pp. 44r–44v, trans. by Lavin in *Quatremère*, p. 28.

<sup>60</sup> Gottfried Semper, Semper Archive (ETH), MSS 141 and 142, fol. 1, repr. in Gottfried Semper and Harry Francis Mallgrave, 'London Lecture of Autumn 1854: "On Architectural Symbols"', *RES: Anthropology and Aesthetics*, 9 (1985), 61–67 (p. 61).

<sup>61</sup> 'This dependency on natural laws and conditions gives to the works of architecture a certain character of necessity and makes them appear like natural works, but such natural works which God created through the medium of reasoning and free acting beings. The history of architecture forms therefore a very important part of the history of mankind. [...] But [in turn] we cannot entirely understand those remnants of

signified first remarkable cultural expressions, Semper rejects it as a futile myth. Architecture by emerging from the technical arts only becomes a cultured art when it regularises form and makes its symbolic language legible.

Semper's lecture 'On Architectural Symbols' therefore develops a distinction between three distinct forms of symbolisms. A 'poetic' symbolic language that, 'consisting of certain characteristic types, performed on the surfaces of the naked schematical forms of the building' and derived from legible analogies with nature and the technical arts.<sup>62</sup> Second, significant symbols and types that, once translated from nature, became traditional elements of construction and its processes. Third, mystical symbols and types that refer to specific rituals and their meaning. Where Assyrian and Egyptian architecture employed technical and mystical types of tendentious symbolism as conventionalised signs, the Greeks synthesised the symbolic forms of architecture by making them self-evident. The legibility of symbols, their *structural* value, required a transition of representation from a metaphorical 'magical-associative' symbolism to 'logical-dissociative' and allegorical signs, which mandated their conceptual abstraction. Only then, could signs become socially meaningful and convey cultural and philosophical content. The Greek symbolic language was modelled after analogical forms in nature and an immediate—natural but not naturalistic—symbolism that, unburdened by mysticism, could achieve formal beauty. Semper illustrates this concept of formal beauty by using the Greek *cyma*, which demonstrates how a structural-symbolic function remains legible throughout tectonic and stylistic changes, while the folding and bending of ornamental leaves serve as a plastic analogy of the structural load it carries.

They made abstractions of the materials of which the originals of the analogies consisted, as well as that of the building itself which, it is most important to know, in Greek architecture was entirely covered with conventional colours. By this double abstraction they were permitted to make the images of tender leaves the symbols of a conflict between two mechanical forces, and to establish a scale of the intensity of action between heavy stones by the degree of their curvature.<sup>63</sup>

Semper's notion of structural symbolism aligns him with Quatremère's position, but is also consistent with the historicity of representation and the shift from symbolic to allegorical representation identified by Aby Warburg in the Renaissance.<sup>64</sup> Yet, Semper is more commonly associated with a romantic position taken by German idealist aesthetics, with

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architectural works without the knowledge of the history of human culture in general, and of the history of the nations who created these works especially.' Semper, 'On Architectural Symbols', p. 61 (MSS 141–42, fol. 2).

<sup>62</sup> Semper, 'On Architectural Symbols', p. 62 (MSS 141–42).

<sup>63</sup> Semper, 'On Architectural Symbols', p. 66 (MSS 141–42, fol. 18).

<sup>64</sup> For Warburg's distinction between allegory and symbol see Matthew Rampley, 'From Symbol to Allegory: Aby Warburg's Theory of Art', *The Art Bulletin*, 79.1 (1997), 41–55.

ideal beauty realised in the formal unity arising from a dialectic synthesis of opposites in symbolism.<sup>65</sup> But Semper's definition of beauty in formal and material terms and his analogy between ornamental differentiation and language, points towards a structural and functional symbolism, which is closer to Warburg's allegory. This is supported in the *Style* by the argument that basic type-forms, such as the *hydria*, wreath, or knot are 'self-illuminating symbols' that immediately communicate their process of making.<sup>66</sup> As Semper states, symbolic—or more precisely allegorical—abstraction is heightened by the double abstraction afforded by polychromy. Even though the importance given to abstraction as a measurement of artistic value is familiar from Quatremère, the symbolic-functional abstraction in the *cyma* owes to Bötticher's *Tektonik*. The allegorical reading of ornament, illustrated by the *cyma* in the London lecture, nevertheless significantly differs from the material explanation of bead-fillets given in the *Preliminary Remarks*.

Supporting with Wagner in 1849 the cause of revolutionary republicans in the May Uprising in Dresden, Semper was infamously involved in constructing barricades and charged with treason. Forced to escape Germany, he headed for Paris, leaving his wife Bertha and six children behind, as well as his position at the Dresden Academy of Fine Arts and successful practice. Unsuccessful in finding work, he decided to immigrate to America but at the last moment went to England.<sup>67</sup> Arriving in London, the polychromy debate had gained new momentum and Semper was invited by the Royal Institute of British Architects to participate in two symposia held in early 1851.<sup>68</sup> This encouraged him to revisit his *Preliminary Remarks* and, fearing the intellectual theft of ideas for the book *Comparative Theory of Building* (*Vergleichende Baulehre*), on which he worked since the 1840s, he proposed to his publisher Eduard Vieweg to combine a new polychrome study with the main arguments of the forthcoming book.

Largely written in London, *The Four Elements of Architecture: A Contribution to the Comparative Study of Architecture* (*Die Vier Elemente der Baukunst: Ein Beitrag zur*

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<sup>65</sup> See for example Mari Hvattum in *Gottfried Semper and the Problem of Historicism* (Cambridge: Cambridge University Press, 2004), pp. 102–07.

<sup>66</sup> The critical change in the latter half of the nineteenth century in defining the conventions of ornament through linguistic studies, including Semper's position, is examined by Debra Schafer, *The Order of Ornament, The Structure of Style: Theoretical Foundations of Modern Art and Architecture* (Cambridge: Cambridge University Press, 2003).

<sup>67</sup> Semper had the prospect to enter into partnership in New York with the architect Charles Gildemeister. Already aboard a ship destined for New York on 19 September 1850, he was only at the very last moment swayed to move to London, having received a letter from the secretary of the Archaeological Institute in Rome, Dr Emil Braun, who promised great prospects in England.

<sup>68</sup> The symposia were held in January and February of 1851. Semper exhibited his various polychrome restorations, including one of the Parthenon. Owen Jones, the author of *The Polychromatic Ornament of Italy* (1846) showed his version of the Parthenon façade. Hittorff's *Restitution du temple d'Empédocle à Sélinonte, ou l'architecture polychrome chez les Grecs* (1851), whose colour folios Semper had seen the previous year in Paris, was presented by T. L. Donaldson.

Vergleichenden Baukunde) was published in autumn 1851.<sup>69</sup> The first part of the book opens with a discussion of polychromy, a historical survey of the debate, and a review of Quatremère's *The Olympian Jupiter* (1814), which defined Greek polychromy in relationship to the systems of fine and technical arts and questioned the historical accuracy of Winckelmann's conclusions and aesthetic reasoning.<sup>70</sup> These are two important points developed by Semper. In addition, to establish a correspondence between Hittorff and his own archaeological findings, Semper provides a summary of the colour debates in Germany, France, and England, made once again topical by a number of recent publications.<sup>71</sup> In the conclusions of the introduction, Semper reiterates that factual evidence confirmed the application of colour to all parts of monuments and an extensively use in Northern and Southern Europe.

Semper also furnishes a solid rebuttal to Kugler's attack in *Über die Polychromie*, who wrote that 'without doubt all buildings in noble white marble from the Golden Age of Greece—that is, the majority of those in the Attic Style—display their stone, in their principal parts, in its original colour, and that only subsidiary details were painted'.<sup>72</sup> As evidence for a 'white' style, Kugler cited ancient descriptions by Pausanias, Pliny, Seneca, and especially Herodotus, who in his account of the Siphnian deception by Pythia, quoted the oracle as saying: "Siphnus, beware of the day when white is thy high prytaneum. White-browed thy mart likewise; right prudent then be thy counsel; Cometh an ambush of wood and a herald red to assail thee." At this time the market-place and town-hall of Siphnus were adorned with Parian marble.<sup>73</sup> Herodotus's reference to Parian marble proved to Kugler beyond doubt that Periclean monuments were white. In his response, Semper argues that the untreated marble could only be interpreted as a temporary state during construction and prior to their decoration, as its whiteness indicating an anomaly was consistent with the oracle further cautioning of a 'red' herald—whose customary dress was known to be white. The appearance of atypical colours was meant to signal to the Siphnians a warning.

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<sup>69</sup> Semper voiced his fear of 'literary robbery' in a letter dated 19 January 1851 to Vieweg. He considered the alternative titles of 'The White Market of the Siphnians' or 'On the Polychromy and its Origin' for the essay.

<sup>70</sup> Quatremère in *The Olympian Jupiter* (1814) wrote about the engraving of cameos, that they illustrate 'what we see as generally constituting the spirit and the taste of polychrome sculpture; it is a kind that colored cameos offer us in small: the system of verity that we will recognize as having been that of most grand monuments, a system that, born of imitation without art, succeeded in forgetting the vice of its origin.' Trans. by Harry Francis Mallgrave, *Architectural Theory: An Anthology from Vitruvius to 1870* (Malden: Wiley-Blackwell, 2006), pp. 242–43.

<sup>71</sup> Semper refers to Paul-Émile Botta, *Monument de Ninive* (1849–50), Henry Layard, *The Monuments of Niniveh* (1849), Eugène Napoleon Flandrin and Pascal Coste, *Voyage en Perse pendant les années 1840 et 1841* (especially vol. 4 in 1851), Félix Marie Charles Texier (for example *Description de l'Asie Mineure*, 1838–48), Francis Cranmer Penrose, *Investigation of the Principles of Athenian Architecture: Optical Refinements in the Construction of Ancient Buildings at Athens* (1851), and Jacques Ignace Hittorff's forthcoming *Restitution du temple d'Empédocle à Sélinonte, ou l'architecture polychrome chez les Grecs* (1846–51).

<sup>72</sup> Franz Kugler, *Über die Polychromie der griechischen Architektur und Sculptur und ihre Grenzen* (1835), as quoted by Kruft, in *A History of Architectural Theory*, p. 312.

<sup>73</sup> Herodotus, *Histories*, trans. by A.D. Godley, Loeb Classical Library (London: William Heinemann, 1921), Book III, p. 57.

Following his philological refutation, Semper accepts Kugler's challenge to provide factual evidence for the extensive use of colour in all Greek monuments. He first refers to his archaeological discoveries with Gourey at the Temple of Theseus, with the colour finds proving to him that the temple was once completely stuccoed and painted, with similar findings and conclusions made by Thomas Leverton Donaldson.<sup>74</sup> Contending that a colour scheme comparable to one accepted for antique terra cotta was also applied to stone monuments, Semper gives further evidence of colour found by him on the Erechtheum at the Acropolis, asserting that 'the marble temples were not white or pale yellow, but were resplendent in a saturated profusion of colour', creating a subtle polychrome effect highlighted by golden ornaments.<sup>75</sup> The final 'chemical' proof, however, was provided by a committee report examining the Elgin marbles at the British Museum in 1837. Despite the committee's inability to find conclusive evidence of colour on the Elgin marbles, it commissioned the chemist Michael Faraday to test colour samples provided by Donaldson.<sup>76</sup> The test confirmed the chemical presence of blue copper-based paint, based on which the committee announced: 'this analysis proves that the surface of the marble of the shafts of the columns of the Theseum, and other parts of the edifices from which the specimens were taken, were covered with a coloured coating'.<sup>77</sup> Faraday corroborating the use of colour on monuments of the Archaic period, encouraged Semper to claim that white marble in later periods were only used as a smooth surface to which 'glassy' layers of paint was applied, creating a visual effect of colour-blending that dematerialised and enhanced architectural form.<sup>78</sup> Using marble as a painting substrate, made stucco obsolete and

<sup>74</sup> Semper quotes from his *Preliminary Remarks*: 'a patch of blue paint about the size of a hand' beneath the antae at the Temple of Theseus and describes the discovery of several other paint traces on the constructive parts and the cella, from which he is able to distinguish two types of painted coatings, a thin coat covering large surfaces and a thicker coating applied to their outlines and borders. Compare Gottfried Semper, *Die Vier Elemente der Baukunst: Ein Beitrag zur vergleichende Baulehre* (Brunswick: Vieweg, 1851). English translation: *The Four Elements of Architecture: A Contribution to the Comparative Study of Architecture* (1851), trans. by Harry Francis Mallgrave and Wolfgang Herrmann, in *The Four Elements of Architecture and Others Writings*, (Cambridge: Cambridge University Press, 1989), pp. 74–129 (p. 90); hereafter cited as *The Four Elements*. Donaldson similarly concluded: 'A thin coating of some substance is on all columns and on the face of all the interior architraves and friezes; and I am inclined to think that the whole edifice was once covered either with a stucco or a thin coat of paint. [...] *The interior and exterior faces of the walls of the cella are worked with a point, evidently for the purpose of receiving a coat of plaster or paint.*' Donaldson as quoted by Semper in *The Four Elements*, p. 90–91 [emphasis Semper] from a footnote of W. R. Hamilton's translation of Kugler's *Über die Polychromie* as *On the Polychromy of Greek Architecture*, in *Transactions of the Institute of British Architects of London: Sessions 1835–36*, 1, part I (London: John Weale, 1836), p. 85.

<sup>75</sup> Semper, *The Four Elements*, p. 94; compare also with p. 95.

<sup>76</sup> The committee also reviewed a statement by Charles Holte Bracebridge, who in 1835–36 verified the existence of colour on Athenian monuments.

<sup>77</sup> 'Report of the Committee Appointed to Examine the Elgin Marbles, in order to Ascertain whether any Evidences Remain as to the Employment of Color in the Decoration of the Architecture or Sculpture' (24 July 1837), in *Transactions of the Institute of British Architects of London*, 1, part II (London: Longmans, Brown, Green, and Longmans, 1842), pp. 101–08 (p. 108). Semper quotes at length from this committee report and the included letters by Bracestone (dated 17 April 1837) and Faraday (report dated 8 June 1837). The committee studied the marbles in the Elgin Room on 1 June 1837 in the presence of Hittorff, Hamilton, Westmacott, Angell, and Donaldson.

<sup>78</sup> In *Style*, Semper would refer to this spatial rather than material effect as 'masking'; compare with William Braham, 'Solidity of the Mask: Color Contrasts in Modern Architecture', *RES: Anthropology and Aesthetics*, 39 (2001), 192–214 (pp. 197–99).

colour appear more brilliantly, while also protecting the building from weathering. This confirmed to Semper his thesis of *dressing*, as the treatment and even the value of material was subservient to the polychrome and symbolic motive of covering. However, Kugler, whose arguments Semper thought demolished, remained unconvinced. He replied: 'Semper's brochure is of very peculiar, cultural-historical and poetic interest.'<sup>79</sup> Despite factual evidence in favour of Semper, the art historical consensus remained that polychromy had existed to a lesser extent than Semper or Hittorff proposed and were the exception.<sup>80</sup>

## 1.2 THE PRIMORDIAL MOTIVES OF ARCHITECTURE

Semper's second ambition of *The Four Elements* was to present 'a short treatise on the origin and historical development of certain inherited and universally valid types that architecture uses to express itself in a generally intelligible symbolism'.<sup>81</sup> It was essentially a summary of his on-going research for a *Comparative Theory of Building*, which was thematically based on his lectures given at Dresden, but also substantially extended his thesis of polychrome *dressing* outlined in the *Preliminary Remarks*. At the Dresden Academy of Fine Arts (1834–49), Semper gave two lecture series, one on architectural history, and another on the historical comparison of building types. The lectures were influenced by his reading of the *Handbuch der Archäologie der Kunst* (1830) by Karl Otfried Müller (1797–1840), whose lectures he had attended as a student in Göttingen, and *Italianische Forschungen* (1827–31) by Karl Friedrich Rumohr (1785–1843).<sup>82</sup> Müller proposed 'art is a representation, that is an activity by means of which something internal or spiritual is revealed to sense', with the 'artistic idea' expressed as embodied moods and feelings in the external forms of a work of art and not by communicating its conceptual origins or language.<sup>83</sup> Rumohr similarly believed that intuition and feelings rather than concepts convey the meaning of a work of art. However, his art historical interpretation was less aesthetic than materialist, arguing that early Christian and Byzantine architectural schools maintained a Graeco-Roman tradition that, while reacting to external influences, underwent a continuous formal development until the Gothic period. 'By showing its historical and, so to speak, organic development, I have tried to suppress the views that

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<sup>79</sup> The response by Kugler in *Deutsches Kunstblatt*, 15 (1852) is quoted by Semper in 'On Architectural Styles', p. 265.

<sup>80</sup> Karl Schnaase in *Geschichte der bildenden Künste bei den Alten* (1843, II) claimed that the polychromy debate was concluded and supported Kubler's view of limited colour application, with Pentelic marble remaining largely untreated. However, a recent survey of architectural polychromy established that colour schemes existed throughout the developed Classical period and became more standardised in the beginning of the late Archaic period (540–480 BC), but with the post-Classical Hellenic period (from fourth century BC) began to disappear in favour of light and shadow articulation; see James Summitt, 'Greek Architectural Polychromy from the Seventh to Second Centuries BC' (unpublished PhD dissertation, University of Michigan, 2000).

<sup>81</sup> Semper, 'On Architectural Styles', p. 265.

<sup>82</sup> Compare Mallgrave, *Semper: Architect of the Nineteenth Century*, pp. 150–55.

<sup>83</sup> Karl Otfried Müller, *Handbuch der Archäologie der Kunst* (Breslau: Josef Max, 1830). English translation: *Art and Its Remains; or a Manual of the Archaeology of Art*, trans. by John Leitch (London: Fullarton, 1847), pp. 1–4.

ascribe to an imbecilic urge for imitation what in fact was solely based on necessity, intention, and purpose.’<sup>84</sup> Opposing the idealist-moral and aesthetic notion of beauty and style propounded by Winckelmann, Rumohr differentiated between ‘manner’, denoting the subjective form-giving by an artist, and ‘style’, the unique visual intuition of an artist uniting the subjective and objective within the constraints of technique and purpose particular to an age. Influenced by Rumohr’s utilitarian-materialist explanation of style, Semper restructured his Dresden lectures of the 1830s in 1840 in the ‘Theory of Building’ (*Lehre der Gebäude*), lectures discussing the ‘original forms’ of nine building types and their response to climate, function, tradition, religion, and materials.<sup>85</sup>

While Semper embraced Rumohr’s materialist reading, he also became interested in anthropological influences on the arts. Studying the porcelain collection at the Zwinger in Dresden, he befriended its curator and royal librarian Gustav Klemm (1802–1869). Klemm, an avid anthropologist was working on the *Allgemeine Cultur-Geschichte der Menschheit* (1843–52), which developed a new cultural history and ethnological taxonomy, and coined the modern concept of ‘culture’ as formed by society and its morals, laws, and customs. Culture, according to Klemm, emerged when the early ‘savagery’ of mankind developed into ‘tamelessness’ in Malaysian, Mexican, Egyptian, Middle Eastern, and Chinese societies, before progressing to the stage of ‘freedom’ in Western civilisations. Differentiating between active (manly) and passive (womanly) races, Klemm envisioned that non-linear, cultural evolution results in a balanced ‘racial’ mix, and so he classified societies according to their cultural achievements and character. As part of his cultural-ethnographic history, he described the houses of the South Pacific as centred around the hearth, elevated on earthen platforms, enclosed by walls made of wicker, and covered by a sparred timber roof.<sup>86</sup> Significantly, Klemm saw art not as originating from fixed types but a primordial need for representation that expressed itself as an artistic drive: ‘We find the beginnings of art in the lowest stages of culture, where we also encounter the beginning of nations, because man has the urge to manifest his experiences externally, and to adorn his environment with these representations.’<sup>87</sup> Semper adopts Klemm’s historic-cultural reasoning almost verbatim.<sup>88</sup> In the Dresden lectures of the late 1840s, he introduces the idea of architectural ‘primordial forms’ (*Urfomen*) as deriving from the motives of vertical enclosure and wall (*Umfriedung* and *Gehege*), and as representing the seeds for dwelling, temple, and city. They were complemented by the motives of roof and hearth, with the latter signifying the

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<sup>84</sup> Karl Friedrich Rumohr, *Italienische Forschungen*, III, p. 228, trans. by Mallgrave in *Semper: Architect of the Nineteenth Century*, p. 153.

<sup>85</sup> Compare Mallgrave, *Semper: Architect of the Nineteenth Century*, pp. 155–56.

<sup>86</sup> Klemm largely relied for factual information on travel reports by others, like Johann Forster’s *Voyage Round the World* (1777).

<sup>87</sup> Gustav Klemm, *Allgemeine Cultur-Geschichte der Menschheit*, I, p. 214, as cited by Hvattum in *Gottfried Semper*, pp. 43–44.

<sup>88</sup> The influence of Klemm’s theory of culture on Semper is discussed by Harry Francis Mallgrave, ‘Gustav Klemm and Gottfried Semper: The Meeting of Ethnological and Architectural Theory’, *RES: Anthropology and Aesthetics*, 9 (1985), 68–79.

social centre of dwelling that over time symbolically transformed into the altar.<sup>89</sup> Taxonomically, the combinations of motives could be grouped as wall-dominated courtyard types in the south, and the roof-covered and enclosed architecture of the north.

When Semper went into exile to Paris in 1849, unable to visit Germany until 1863, he lost all means of income and returned to work on the book *Theory of Building* (*Lehre der Gebäude*), for which he had signed a contract in 1844 with the publisher Vieweg.<sup>90</sup> The book examined the typological principles and modifications of the 'living idea' of form and architectural design. Vieweg had approached Semper in 1843 to revise David Gilly's *Handbuch der Land-Bau-Kunst* (1797–98), a practical book on construction according to principles of utility, durability, and economy.<sup>91</sup> But critical of Gilly's emphasis to 'elevate the material over the idea', Semper proposed a new book that would follow the structure of his Dresden lectures and subordinate material in the art of building to a 'true idea' and types (basic or normal forms) of nature by examining their modification in organic formations.<sup>92</sup>

Semper's intention of the *Lehre der Gebäude* is to define the 'original formations' (*ursprüngliche Gebilde*) of architecture and their formal development in types. He hereby repeatedly refers to Cuvier's comparative method that studies formal development through functional and morphological changes in anatomy. Cuvier's hypothesis of the correlation of parts was made famous by his claim that he could determine an animal's class and genus from merely a bone. Similarly, Quatremère stated that with the analogical imitation of the human body in architecture, the 'whole and each part, found themselves in a reciprocal dependence from which resulted their inviolable accord', an inference repeated by Semper's insistence that structure and surface correspond.<sup>93</sup> Another important aspect of Semper's theory was anticipated by Alexander von Humboldt (1769–1859). Owing to his contemporary Johann Wolfgang von Goethe and his theory of metamorphosis, which posited that plants could be traced back to an archetype (*Urpflanze*), Humboldt asserted in *Cosmos: A Sketch of a Physical Description of the Universe* (1845–62) that the complexity of nature is represented by the organic unity of 'fundamental types' and 'normal form'.<sup>94</sup>

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<sup>89</sup> Semper explained the symbolism of the hearth in a later lecture: 'It is still now the center of our domestical life and in its higher significance as altar, that of our religious establishments. It is the symbol of civilization and religion and an altar-formed object will be symbolized as a sacred one. By elevating a building or an object on an altar-formed pedestal or basement it signifies (it) to be sacred.' In 'On Architectural Symbols', p. 66 (MS 141).

<sup>90</sup> Semper unsuccessfully petitioned King Frederick Augustus II of Saxony for clemency from his exile in Paris, but was not be given immunity until 1863.

<sup>91</sup> Vieweg originally asked Ferdinand Triest to update Gilly's book that had been published by his father. Triest proposed to add a new section entitled 'Die Lehre der Gebäude', which Semper seems to have adopted into his proposal. Compare Mallgrave, 'The Idea of Style', pp. 148–49.

<sup>92</sup> Compare Semper's letter to Vieweg, 26 September 1843, (Semper Archive, ETH), trans. by Mallgrave in *Semper: Architect of the Nineteenth Century*, p. 156.

<sup>93</sup> 'Architecture', in *Quatremère's Historical Dictionary*, p. 80.

<sup>94</sup> 'Amid this immense variety of animal and vegetable forms and their transformations, we see, as it were, incessantly renewed the primordial mystery of all organic and vital development, the problem of metamorphosis, so happily treated by Goethe,—a solution corresponding to our intuitive desire to arrange

These cosmological types formed an empirical and systematic basis to the understanding of any formation, whether in natural history or the arts.<sup>95</sup> Semper was further influenced by Goethe's *Baukunst* (1795), which defined architecture as the 'transfer of qualities of one material to a semblance of another', a process that Goethe, resembling Quatremère, termed 'poetic fiction', and which reoccurred in Semper's theories as a concept of *material transformation*.<sup>96</sup> Therefore, the normative and fundamental *ur-types*, latent in organic forms and their transformation, became the subject of Semper's *Lehre der Gebäude*.

We therefore come to the view that nature in her variety is ever simple and sparse in her basic ideas, renewing continually the same basic forms by modifying their graduated development a thousandfold according to their conditions of existence, developing parts in different ways, that is, shortening some parts and lengthening others. So, I say, that architecture is also based on certain normal forms conditioned by an original idea, which always reappear and yet allow infinite variations conditioned by more specific circumstances.<sup>97</sup>

The statement aligns Semper with the morphological position of Goethe and Saint-Hillaire rather than Cuvier, suggesting that his interest in natural sciences lies not in critical methodological differences or a literal transfer of a working method to architecture, but in an operative analogy.<sup>98</sup> An analogy between the 'fundamental forms and motives', which Cuvier studied in their innumerable varieties and 'gradual development'—as Semper somewhat misrepresents him in a lecture on the 'Outline for a System of a Comparative Theory of Style' in 1853—and the corresponding types in the technical arts and their infinite variation by human invention and external factors. 'They are like those of nature, connected together by some few fundamental Ideas, which have their simplest expressions in *types*.'<sup>99</sup>

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all the varied forms of life under a small number of fundamental types.' Alexander von Humboldt, 'Introduction', in *Kosmos: Entwurf einer physischen Weltbeschreibung*, 5 vols (1845–1862). English translation: *Cosmos: Sketch of a Physical Description of the Universe*, trans. by Edward Sabine (Cambridge: Cambridge University Press, 2010), p. 22.

<sup>95</sup> Werner Oechslin has dedicated his article "'... bei furchtloser Konsequenz (die nicht jedermanns Sache ist) ..." Prolegomena zu einer verbesserten Verständnis des Semper'schen Kosmos' to the comparison of Semper's concept of *cosmos* to that by Humboldt and others; see *Gottfried Semper 1803–1879*, pp. 52–90.

<sup>96</sup> Compare Nikolaus Pevsner, *Some Architectural Writers of the Nineteenth Century* (Oxford: Oxford University Press, 1972), p. 265.

<sup>97</sup> Semper in a letter to Vieweg, 26 September 1843, (Semper-Archiv, ETH), trans. by Mallgrave in *Semper: Architect of the Nineteenth Century*, p. 156.

<sup>98</sup> Semper should have been aware of the critical difference in scientific method. He knew Cuvier's theories from his time as a student in Paris, as he confirms in his London lectures. With his interest in Cuvier, he could not have missed the 'quarrel of the analogues' in 1830 at the Académie Royale des Sciences between Saint-Hillaire and Cuvier. In addition, through his close friendship with Ernst Rietschel in Dresden, he knew of the writings by his father-in-law Carl Gustav Carus, who was a friend and follower of Goethe and carried out his own studies of zoology, entomology, and comparative anatomy.

<sup>99</sup> Gottfried Semper, Semper Archive, MS 122, fol. 5, repr. in Gottfried Semper, Harry Francis Mallgrave, and Joseph Rykwert, 'London Lecture of November 11, 1853', *RES: Anthropology and Aesthetics*, 6 (1983), 5–31 (p. 8); hereafter cited as 'Outline for a System of a Comparative Theory of Style'. The title stems from Hans Semper's German translation in Manfred Semper and Hans Semper, eds, *Kleine Schriften von Gottfried*

Humboldt's ideas disseminated in lectures in Berlin (1827–28), not only made an impression on Semper, but also influenced Karl Friedrich Schinkel (1781–1841) and his concept of variant plan types. In a further parallel, Schinkel, who idolised his mentor Gilly, had worked on an architectural *Lehrbuch*, which was based on a comparative morphology of buildings according to structural types and tectonics, and seemed inspired by Gilly's didactic *Handbuch der Land-Bau-Kunst*.<sup>100</sup> Schinkel worked on different conceptions of the textbook almost throughout his entire career from 1803 to 1840.<sup>101</sup> Like Gilly, Schinkel believed that material has specific characters that define its utility for construction.<sup>102</sup> Schinkel however later revised his 'erroneous' utilitarian view, realising that the forms of architecture as deriving from construction, historical importance, and nature, could not be isolated from history and poetry, and required a clarification of the continuity between traditional precedence and modern artistic motifs, character and style—themes also central in Semper's theory.<sup>103</sup> Despite attempting for decades to write a new practical theory of architecture, neither Schinkel's *Lehrbuch* nor Semper's *Lehre der Gebäude* was ever completed.<sup>104</sup>

The idea that all natural forms have *ur-types*, with their evolution revealed by formal comparison, was a mid-nineteenth-century commonplace. Semper incorporated it into the *Lehre der Gebäude*, giving it consequently the new title *Comparative Theory of Building* (*Vergleichende Baulehre*) in 1849.<sup>105</sup> Re-structured as a comprehensive 'scientific' taxonomy and historical survey of eleven building types, it was to compare their

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*Semper* (Berlin: Verlag von Spemann, 1884), pp. 259–91. Compare with a draft of the lecture in MS 123, as cited by Mallgrave in 'Introduction', *Four Elements and Other Writings*, p. 32.

<sup>100</sup> Schinkel received his first architectural training from David Gilly but was later apprentice to his son Friedrich Gilly (1798) and his student at the Bauakademie in Berlin, the first state architectural school in Germany founded in 1799 and modelled after the École Polytechnique. Schinkel's 'hero worship' of Gilly and their relationship is described by Fritz Neumeyer in 'Introduction', in *Friedrich Gilly: Essays on Architecture, 1796–1799*, trans. by David Britt (Los Angeles: Getty Publications, 1994), pp. 10–13.

<sup>101</sup> See Goerd Peschken, *Das architektonische Lehrbuch* (Berlin: Deutscher Kunstverlag, 1979), p. 22.

<sup>102</sup> 'In architecture everything must be true, and any masking or concealing of the construction is an error. The real task here is to make every part of the construction beautiful within its character.' Karl Friedrich Schinkel, from 'Notes for a Textbook on Architecture' (c. 1830), trans. by Mallgrave in *An Anthology from Vitruvius to 1870*, p. 413.

<sup>103</sup> See Karl Friedrich Schinkel, 'Gedanke, Bemerkungen und Notizen über Baukunst, mit specieller Rücksicht auf die Bearbeitung eines architektonischen Lehrbuchs', in *Schinkel's Nachlass: Reisetagebücher, Briefe und Aphorismen*, ed. by Alfred von Wolzogen, (Berlin: Verlag der Königlichen Geheimen Ober-Hofbuchdruckerei, 1863), III, pp 373–74 (repr. in Goerd Peschken, *Das architektonische Lehrbuch* (Berlin: Deutscher Kunstverlag, 1979), pp. 149–50, trans. by Mallgrave in 'From Notes for a Textbook on Architecture (c. 1835)', in *An Anthology from Vitruvius to 1870*, p. 414.

<sup>104</sup> Some of the drawings of Schinkel's *Lehrbuch* appeared in *Vorbilder für Fabrikanten und Handwerker* (1821–37) by Peter Beuth, a graphical reference and didactic teaching instrument for the vocational training of designers. The *Vorbilder* comprehensively surveyed classical precedents, from the orders to the decorative arts, with Schinkel providing the drawings of antique temples, decorative objects, and furniture. It also included one volume by Karl Bötticher (1806–1889) on textile ornaments. Even though Semper issued a prospectus in 1852 announcing his book, it never materialised—and neither did a corresponding section on architectural design in the much later *Style*. The 'Prospectus: Comparative Theory of Building', consisted of a drafted preface and a fictitious letter to Vieweg, dated 1847 but copied from a letter of 1843.

<sup>105</sup> The new title was first used in a manuscript dated 20 July 1849; see Semper Archive, MS 52, fol. 1.

development from original to current forms and give 'as extensive a review as possible of the total field of monumental architecture'.<sup>106</sup> While Schinkel in the notes for his *Lehrbuch* discussed the problem of 'stylistic suitability', the importance of style to invention as a mechanism to synthesise traditions and modify precedents into something 'totally new' and historically appropriate, was not fully considered until Semper's comparative and practical aesthetics.<sup>107</sup> Semper agreed with Schinkel that invention ought to have a historical perspective, not through a literal continuation but a continued modification of recurrent artistic motives. This, both claimed, was only achievable by considering the *stylistic suitability* of invention.

In May 1850, Semper finally completes a manuscript for the *Comparative Theory of Building*, containing about a fifth of his planned work, including a preface, introduction, and the first chapters on dwellings in ancient Mesopotamia, China, India, and Egypt. In a letter to Vieweg, Semper blames his latest delay on recent archaeological discoveries, especially those by Paul-Émile Botta and Henry Layard, which provided important new evidence to his thesis of polychrome and artistic development, and forced him to rewrite the preface.<sup>108</sup> During the research for his book, Semper carefully examined the artifacts sent by Botta from Khorsabad to Paris, exhibited in a new Assyrian display at the Louvre in 1847.<sup>109</sup> The findings by Botta coincided with similar Assyrian excavations by Layard, which Semper later studied at the British Museum.<sup>110</sup> Botta's claim that Assyrian art demonstrates a transition from Egyptian to Greek art and provides a missing developmental link from a theocratic system of representation to naturalism is of immense interest to Semper, as it confirms his thesis that styles are defined by recurrent motives that develop and transform in accordance with socio-political and cultural influences. The discoveries by Botta and Layard asserted the importance of scientific methodologies and corroborated the

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<sup>106</sup> Gottfried Semper, 'Prospectus' *Vergleichende Baulehre* (1852). English translation: 'Prospectus: Comparative Theory of Building', trans. by Harry Francis Mallgrave and Wolfgang Herrmann, in *The Four Elements of Architecture and Others Writings*, (Cambridge: Cambridge University Press 1989), pp. 168–73. The eleven types were: dwellings, religious buildings, educational buildings, nursing institutions, works of public assistance, buildings for the government and administration of the state, judicial buildings, military institutions, monuments, works for public entertainment and festivals, and urban planning.

<sup>107</sup> In the draft preface to his textbook, Schinkel posed: 'how we must treat these new inventions in order to bring them into a harmonious accord with the old, and raise not only the expression of style in works but also allow the feeling for something totally new to emerge with the style feelings of the viewer. Here will arise a happy creation of our age in which there is both the recognition of stylistic suitability and the primitive effect.' Schinkel, 'From Notes for a Textbook on Architecture (c. 1835)', trans. by Mallgrave in *An Anthology from Vitruvius to 1870*, p. 415.

<sup>108</sup> In a letter dated 24 February 1850, Semper specifically refers to Botta's *Monument de Ninive* (1849–50), Layard's *The Monuments of Niniveh* (1849), Jean-Baptiste Flandrin and Pascal Coste's *Voyage en Perse pendant les années 1840 et 1841* (1843–54), and Christian Lassen's *Indische Alterthumskunde* (1847–61).

<sup>109</sup> Botta, the French Consul at Mosul, excavated the palace of Sargon II (721–705 BC) in Khorsabad in 1843 and completed them in 1845. He initially believed that he had rediscovered Niniveh. The Louvre's Assyrian section was officially opened on 1 May 1847.

<sup>110</sup> Layard, similar to Botta, believed to have excavated parts of Niniveh, but in fact uncovered the ancient city of Nimrud between 1845–47 and 1849–51.

importance of history to the studies of artistic development, as the inventions of the Greeks could now be situated within a much larger cultural evolution.

Semper in the preface to the *Comparative Theory of Building* refers to the seventeenth- and eighteenth-century scientific aim 'to grasp and formulate a generalized idea that alone gave value and direction to specialized research', and which unified the disciplines as 'the Newtons, the Laplaces, the Cuviers, and the Humboldts, created a new form of Science generated by a universal world view [*Weltidee*]'.<sup>111</sup> Equally, Semper declares, architecture needs 'a general theory of building' to unify an excess of doctrines and specialised knowledge.<sup>112</sup> This was to be achieved by a 'comparative theory of building' that is practical and scientific and 'presents a logical method of inventing which we vainly seek in rules of proportion and obscure principles of aesthetics'.<sup>113</sup> Durand's handbooks, concedes Semper, came closest to this aim but 'got lost in lifeless schematism' and 'arbitrary' representational reconstructions, and similarly, Rondelet's notion of type as forms of construction lacked an understanding of the intellectual dimension of architecture as an 'organic art form'.<sup>114</sup>

Despite his contempt for Durand, Semper has an ambivalent appreciation for his method, admitting that the tendencies in Germany are even less advanced by following a historical-eclectic, aesthetic, or materialist direction.<sup>115</sup> The architect as a historian arbitrarily reproduces eclectic precedents, while the aesthetician pursues an imperfect theory of taste and aesthetic revivalism, and the materialist believes that only material conditions architectural form. Semper criticised all for copying historical precedents without a contextualisation or relativisation necessary to conceive an 'independent work'. He also warned that aesthetics are unsystematic and should be deviated from—permitting dissonances—in order to achieve 'individual beauty'. Following nature's example, 'material must always be subservient to the idea', technology only 'shapes the forms of architecture according to natural laws as conditioned, on the one hand, by the changing purpose of the thing to be formed and, on the other, by the properties of the material to be used'.<sup>116</sup> The sole historian and materialist isolate the development of architecture, unable to recognise

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<sup>111</sup> Gottfried Semper, 'Vorwort', *Vergleichende Baulehre* (1850), MS 55, fols. 1–13. English translation: 'Influence of Historical Research on Trends in Contemporary Architecture', trans. by Wolfgang Herrmann, in *Gottfried Semper, In Search of Architecture* (Cambridge, MA: MIT Press 1984), pp. 189–95 (p. 189); hereafter cited as 'Preface', *Comparative Theory of Building*.

<sup>112</sup> Compare Semper, 'Preface', *Comparative Theory of Building*, p. 190.

<sup>113</sup> Semper, 'Prospectus: Comparative Theory of Building', p. 171.

<sup>114</sup> Compare Semper, 'Preface', *Comparative Theory of Building*, pp. 190–91. Semper refers to Rondelet's *Traité theorique et pratique de l'Art de Bâtir* (1802–17) and 'Durand *Traité d'architecture*, II Vol. ditto *Parallèles*, etc.' Rondelet thought of the first architectural types as 'different forms of construction'; see '(Art of) Building', in *Encyclopédie méthodique: Architecture* (1788, i).

<sup>115</sup> Semper in his own teachings and design used grids, but integrated them with larger geometric intentions and proportions, preventing a procedural addition of form. Compare Winfried Nerdinger, 'Der Architekt Gottfried Semper: "Der notwendige Zusammenhang der Gegenwart mit allen Jahrhunderten der Vergangenheit"', in *Gottfried Semper 1803–1879*, pp. 22–23.

<sup>116</sup> Semper, 'Preface', *Comparative Theory of Building*, pp. 191–93.

underlying 'conventional forms' and 'types'. Evocative of Quatremère, Semper writes: 'Architecture creates original formations, which are not contingent on fully finished natural forms but which have evolved historically according to natural laws and to the human mind's inclination toward order', thus possesses the potential to evolve.<sup>117</sup> This 'organic' evolution is a historical development of a typical 'conceived basic idea' that produces an abstract 'store of forms' (*Formenwelt*). While the term 'organic', denotes in the *Preliminary Remarks* a social and artistic condition in Greece, it now refers to a general union of cultural and religious impulses in the arts.<sup>118</sup> By modifying abstract types (*Grundformen*) according to emerging styles, the architect has access to conventionalised meaning.

Claiming a fundamental interrelationship of type, style, and history, Semper cannot accept the premise of Heinrich Hübsch *In welchem Style sollen wir bauen?* (1828). Hübsch argued that antique styles were inadequate to modern times and an appropriate style had to consider function, construction, and material—which he believed fulfilled best in an arch-style (*Rundbogenstil*). The ensuing German style-debate culminated in the 1840s and led to a widespread 'battle of the styles' in the 1850s, which resulted in what Semper perceives as 'licentious' eclectic historicism.<sup>119</sup> Style is to him not a choice according to structural or functional preferences but a historical process in which fundamental types are modified by developing technology in the technical arts. The 'presumption of being able to invent the new architectural style of the future' is futile for the artist, Semper states.<sup>120</sup>

To recognise suitable means of invention, Semper argues, one has to appropriate methods from the natural sciences, comparative grammar, and anthropology, study the history of origins, and understand the conventions of formal, cultural, and typological development as well as the factors leading to their modifications. For example, the comparative method of the linguist Bopp, who deduced a proto-language of attested languages from the comparison of grammatical forms and inflections, was exemplary to Semper.<sup>121</sup>

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<sup>117</sup> Semper, 'Preface', *Comparative Theory of Building*, p. 194.

<sup>118</sup> This meaning of the *organic* was anticipated by the socialist philosophy of Claude Henri de Saint-Simon, who defined organic epochs as those with a harmonious relation of social, political, and cultural agendas. Mallgrave, for example, suggests that Semper might have known Saint-Simonian philosophy through the lectures of Emile Barrault and his *Aux artistes: Du passé et de l'avenir des beaux-arts* (1830); see Semper: *Architect of the Nineteenth Century*, p. 56.

<sup>119</sup> The main contributors to the debate besides Hübsch were Rudolf Wiegmann, Carl Albert Rosenthal, Johann Heinrich Wolff, and Karl Bötticher; see Heinrich Hübsch, *In welchem Style sollen wir bauen?* (Karlsruhe: Müller, 1828). English translation: *In What Style Should we Build? The German Debate on Architectural Style*, trans. by Wolfgang Herrmann (Los Angeles: Getty Publications, 1992).

<sup>120</sup> Semper, 'Preface', *Theory of Formal Beauty*. He repeats and expands this opposition to eclectic and revivalist tendencies of historicist styles in other writings, including 'Preface', *Comparative Theory of Building* and the 'Prolegomena' to *Style*.

<sup>121</sup> Franz Bopp in *Über das Conjugationssystem der Sanskritsprache in Vergleichung mit jenem der griechischen, lateinischen, persischen und germanischen Sprache* (1816) showed his interest in the historical analysis of languages through a comparative grammar, which studied grammatical forms and inflections (the modification of a word to express a different grammatical and syntactic function). This research was later completed in *Vergleichende Grammatik des Sanskrit, Zend, Griechischen, Lateinischen, Litthauischen, Altslawischen, Gotischen und Deutschen* (1833–52).

Grammatical studies provided significant conclusions for anthropology, and Semper refers to the causality between intellection and formal language by demanding that an architect needs to similarly understand conventional grammar, as otherwise he is 'like an author who constrains his own language by adopting an antiquated foreign, or self-invented order of words and mode of expression'.<sup>122</sup> Grammatical intelligibility implied in scientific fields a typological ordering, and the architect as a natural scientist, 'selects from the infinite variety what is most outstanding, groups what is related into families, and reduces what is derivative and complex to its original and simple state'.<sup>123</sup> Semper hence to an extent prepares Walter Gropius's notion of 'standard form' that typifies an inherent idea from which the conditions of invention and an architectural theory of design can be constructed. Yet, Semper significantly differs from the Modernist doctrine by understanding *standard form* as irreducible to material and form.

Once a standard form has been established as the simplest expression of the idea, it will come to life, modified according to the conditions of the site, the period and its customs, the climate, the material to be used the idiosyncrasies of the client as well as of the arts, and many more incidental circumstances.<sup>124</sup>

The *Comparative Theory of Building* follows a taxonomical order familiar from Durand's scheme of building genres. However, Semper's interest is not diagrammatic reduction but the conditions of artistic formation, more akin to Le Roy's studies. 'Any discourse', he demands, 'should first go back to the simple origin of the subject under review, trace its gradual development, and explain exceptions and variations by comparing them with the original state'.<sup>125</sup> While Laugier identified the original state of architecture in the formal elements of the primitive hut, Semper develops an ethnological argument. Although rejecting the hut as having any normative value for architecture, like Vitruvius he claims that the origins of dwelling derive from the first social interactions of man gathered around a hearth: the germ of civilisation and social institutions formed by assembled communities (families, tribes, and nations).<sup>126</sup> The hearth as a place of worship in early funerary and religious cult became a moral and religious symbol, first associated with shrines and ancestral tombs (the 'houses of the dead') and then signified sacrificial altars in temples.<sup>127</sup> From the need to protect the fire, the original elements of dwellings developed: the tent-like

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<sup>122</sup> Semper, 'Preface', *Comparative Theory of Building*, pp. 193–94.

<sup>123</sup> Semper, 'Preface', *Comparative Theory of Building*, p. 194.

<sup>124</sup> Semper, 'Preface', *Comparative Theory of Building*, p. 195.

<sup>125</sup> Semper, 'Einleitung', *Vergleichende Baulehre* (1850). Semper Archive MS 58, fols. 15–30. English translation: 'The Basic Elements of Architecture', trans. by Wolfgang Herrmann, in *Gottfried Semper, In Search of Architecture* (Cambridge: Cambridge University Press 1984), pp. 196–203 (p. 196); hereafter cited as Semper, 'Introduction', *Comparative Theory of Building*. The text closely follows the structure of the lectures at Dresden.

<sup>126</sup> Semper refers to 'Vitruvius II, 1', which is Book II, Chapter I: 'The Origin of the Dwelling House'.

<sup>127</sup> The theme of religion as an artistic motivation is recurrent in Semper's writings. However, he believed that Protestantism and Catholicism hindered the development of the arts, as they had lost a sense of community. Compare with Mallgrave, *Semper: Architect of the Nineteenth Century*, p. 57.

roof combining a covering and supporting structure, the substructure or platform elevating the dwelling to prevent its flooding, and the enclosure, non-structural screens or fences protecting the hearth and surrounding property from wild animals and enemies. 'Thus, four elements of primitive building arose out of the most immediate needs: the roof, the mound, the enclosure and, as spiritual centre of the whole, the social hearth.'<sup>128</sup> From the first settlements by hunting nomads with their tents and huts, the 'primitive' elements and architecture developed into two distinct dwelling types, the courtyard-type dominated by enclosing walls and the freestanding house characterised by its pitched roof.<sup>129</sup> By 'primitive', Semper means not just an archaic age or the imaginary model of the hut, but material and original motives that persist, especially in vernacular architecture.<sup>130</sup> Therefore the formation of architecture, 'the combined effect of all actual or potential factors of an intellectual or material kind in the creation of architectural works of art' was at all times ascribable to a primitive pre-existing type and its modification according to external, real influences.<sup>131</sup> For example, the change from a primeval society of individual property owners to a socialist military state required the submission of the individual to the state and its representative ruler, creating a new type and style in architecture.

The manuscript on Assyrian-Chaldean architecture for the *Comparative Theory of Building*, elaborates the interrelationship of social and architectural forms, the influence of climate, and effect of building material. Inspired by Klemm, Semper outlines a primarily cultural interpretation of architectural history. The Assyrian strict caste system was reflected in an architecture deriving from military camps that, responding to its geography, developed into terraced buildings with an urban cellular organisation. Due to limited building materials, typical construction consisted of a roof element supported by columns and non-structural vertical enclosures, which eventually evolved into solid walls. The enclosures were initially woven hurdles, mats, and carpets, prompting Semper to proclaim: 'Wickerwork was the original motif of the wall'.<sup>132</sup> In *The Four Elements*, he adds that the basic need for enclosure improved the technical skills, from the weaving of branches to that of mats and carpets by 'wall-fitters'. The origin of the wall in weaving, with carpets still common in Assyrian architecture as spatial sub-dividers and coverings of structure, explicated the polychrome and ornamental roots, which were maintained when more durable materials became customary for the internal cladding of walls (stucco, panelling, alabaster, metal plates, and mosaics) and the exterior was protected by varnish.<sup>133</sup> 'Walls' in tribute to this

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<sup>128</sup> Semper, 'Introduction', *Comparative Theory of Building*, p. 199.

<sup>129</sup> Unlike Quatremère, Semper does not recognise the cave as having architectural merit or intention.

<sup>130</sup> The caraib cottage at the Great Exhibition of 1851 or Chinese architecture exemplified this primitive motive to Semper. Compare with Rykwert, 'Semper and the Conception of Style', in *Gottfried Semper*, p. 70.

<sup>131</sup> Semper, *Comparative Theory of Building*, as quoted by Herrmann, *Semper: In Search of Architecture*, p. 17 (MS 52, fol. 7).

<sup>132</sup> Gottfried Semper, 'Assyrisch-Chaldäische Baukunst' (Chapter 10, *Vergleichende Baulehre*, 1850). Semper Archive MS 58, fols. 94–120. English translation: 'Structural Elements in Assyrian-Chaldean Architecture', trans. by Wolfgang Herrmann, in *Gottfried Semper, In Search of Architecture* (Cambridge, MA: MIT Press 1984), pp. 204–18 (p. 205); hereafter cited as Semper, 'Chapter 10', *Comparative Theory of Building*.

<sup>133</sup> A similar description is given in *The Four Elements*, pp. 103–04.

origin, 'never appeared in their structural nakedness; they were always covered on the inside as well as on the outside', with the ornamental motive of carpet embroidery lastingly influencing architectural forms.<sup>134</sup> 'The whole system of oriental polychromy and consequently also the art of painting and of bas-relief arose from the looms and vats of the industrious Assyrians or from the discoveries of prehistoric people who preceded them.'<sup>135</sup> As Semper claims in *The Four Elements*, this ornamentation of walls in Egyptian, Persian, and Chinese architecture was perfected by the Greek polychromy by incorporating sculptural and painterly techniques.<sup>136</sup> The Greeks developed an Assyrian's innovative polychrome tradition, which introduced a new naturalism unknown to Egyptian art. Their advance was explained by a difference in the organisation and representation of the state, but also a construction method that imitated productions of weaving. The symbolic and material motive of *dressing* in wall construction, therefore, had its ornamental origins in a 'carpet style' and was even preserved in exposed brick- and stonewalls, when beginning with the Romans the previously dominant *tectonics*—lightweight and linear framed spatial matrices—were replaced by *stereotomics*—the heavy construction of mass and volume.<sup>137</sup>

The primitive elements of architecture and the theory of *dressing*, sketched out in the *Comparative Theory of Building*, formed the basic arguments to the second section of Semper's *The Four Elements*, which contends that Hellenic culture was neither original nor autonomous. Disproving a common mid-nineteenth century view, he writes that the Greeks had 'arisen on the humus of many past traditions', with their achievement the modification of traditions through the construction of a mythology that 'flourished within a philosophical system of a natural symbolism'.<sup>138</sup> This symbolism could be traced back to 'primitive conditions' of civilisation and explained in its material and architectural formations. Summarising his four primitive elements—which rather denote an 'idea' and 'motive' than something physical—the 'moral' element was the hearth and 'around it were grouped the three other elements: the *roof*, the *enclosure*, and the *mound*'.<sup>139</sup> The four elements directly correspond to the technical arts and are respectively '*ceramics* and afterwards metal works around the *hearth*, *water* and *masonry works* around the *mound*, *carpentry* around the *roof*

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<sup>134</sup> Semper, 'Chapter 10', *Comparative Theory of Building*, p. 208.

<sup>135</sup> Semper, 'Chapter 10', *Comparative Theory of Building*, p. 206.

<sup>136</sup> Compare Semper, *The Four Elements*, pp. 108–09.

<sup>137</sup> According to Semper, only at the beginning of the Roman period were the construction and material of walls considered in terms of their decorative values and left uncovered. When polychromy lost its 'historical basis' and form became the result of opulent material attributes, it emancipated the previously hidden partition wall (*Scheerwand*) and questioned the dominance of the roof through the arch and vault. Compare Semper, *The Four Elements*, p. 126. The taxonomic division between tectonics and stereotomics is also evident in the use of the German words *Wand* or *Mauer*, as pointed out by Kenneth Frampton in 'Rappel á l'ordre', pp. 19–25. Frampton reiterates this in *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* (Cambridge, MA: MIT Press, 1995), p. 5.

<sup>138</sup> Semper, *The Four Elements*, p. 101.

<sup>139</sup> Semper, *The Four Elements*, p. 102. Semper in a manuscript for a lecture in 1843, used the following English descriptions: '1<sup>st</sup>, the fire place as the Center, 2<sup>nd</sup>, the protecting Roof, 3<sup>rd</sup>, the Enclosure, 4<sup>th</sup>, the Substructure'; see Semper Archive, MS 124, fol. 16. The meaning of 'element' to Semper has been pointed out by Mallgrave, *Semper: Architect of the Nineteenth Century*, p. 185.

and its accessories'.<sup>140</sup> In his search for the architectural origins, Semper realises that the primordial elements of architecture originate from the *material transformation* and symbolic development of polychrome *dress* in the technical arts. This signifies an important change from a specific theory of architecture to a general theory of the technical arts, as architecture now only exists as part of their unity. Therefore, architectural formation could be explicated by the minor technical arts before their synthesis in architecture. With this new theoretical position, the initial ambition of the *Theory of Building* to provide a purely formal history of building types became less important than an epistemological and comparative examination of the technical arts.

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<sup>140</sup> Semper, *The Four Elements*, p. 103.

## 2 THE DOCTRINE OF STYLE

*But under material we understand, beyond raw condition of the art form, something higher—namely, the endeavour, the artistic realization of the assigned problem or theme. This content-moment of artistic form is in any case the most pre-eminent of all the others named, because it creates form as the absolute expression of its content. Where this harmony of form with its inner-lying idea steps forth, this we designate as style.<sup>1</sup>*

Although Semper would fail to win any major building work in England, his time in London was an important period to consolidate his theories, published in *The Four Elements of Architecture and Science, Industry, and Art: Proposal for the Development of a National Taste in Art at the Closing of the London Industrial Exhibition* (Wissenschaft, Industrie und Kunst: Vorschläge zur Anregung nationalen Kunstgefühles bei dem Schlusse der Londoner Industrie-Ausstellung, 1852), but also developed in his teaching at the Department of Practical Art.<sup>2</sup>

Presumably on Henry Cole's recommendation, Semper was commissioned to coordinate the Turkish, Swedish, Danish, and Canadian sections in the Great Exhibition of the Works of Industry of all Nations of 1851 in Joseph Paxton's 'Crystal Palace' erected in Hyde Park.<sup>3</sup> His involvement gave him valuable insight into the current state of industrial and artistic production. Intending to write a comparative survey of the exhibition, Semper finds the classification system adopted by the Royal Commission according to the divisions of raw materials, machinery, manufactures, and fine arts inadequate, as it groups objects by materials and disregards any common artistic motives or thematic relations. In a series of articles collated in *Science, Industry, and Art*, he proposes a classificatory counter-scheme based on his four elements of architecture, with an added fifth division considering their unification in objects of high art or science. 'This plan', Semper proclaims, 'should make apparent the derivation of objects and forms from their primordial motives (*Urmotiven*) and style changes conditioned by circumstances.'<sup>4</sup>

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<sup>1</sup> Gottfried Semper, manuscript for 'Ueber Baustile', Semper Archive, MS 283, fols. 11–12, published in Wolfgang Herrmann, *Gottfried Semper: Theoretischer Nachlass an der ETH Zürich, Katalog und Kommentare* (Basel: Birkhäuser Verlag, 1981), pp. 250–60. English trans. by Mallgrave in 'The Idea of Style', p. 344.

<sup>2</sup> Semper was involved in the execution of a funeral car for the Duke of Wellington and built one of the courts in the later reassembled Crystal Palace in Sydenham. However, other than minor commissions for decorative objects, all projects, including a design for a cemetery (for the social reformer Edwin Chadwick) and a museum in South Kensington failed.

<sup>3</sup> Semper turned down Joseph Paxton's offer to work as his assistant, planning to open a private school of architecture.

<sup>4</sup> Gottfried Semper, *Wissenschaft, Industrie, und Kunst: Vorschläge zur Anregung nationalen Kunstgefühles* (Brunswick: Vieweg, 1852). English translation: *Science, Industry, and Art: Proposals for the Development of a National Taste in Art at the Closing of the London Industrial Exhibition*, trans. by Harry Francis Mallgrave and Wolfgang Herrmann, in *The Four Elements of Architecture and Others Writings* (Cambridge, MA: MIT Press 1984), pp. 130–67 (pp. 132–33).

Diagnosing the dilemma of the arts as caused by a conflict between the proliferating technical means of industrialisation and an out-dated artisanship, Semper caricatures the unfortunate artistic-intellectual state of the exhibition as a 'kind of Babel' that mirrors the 'anomalies within existing social conditions'.<sup>5</sup> These anomalies are the discrepancies between cultural and political situations and, importantly, a capitalist production that destroyed the traditional basis of the arts.<sup>6</sup> Artistic practice had been subjected to scientific advances, 'but before its style could have evolved through many centuries of popular usage' and adapted to the new means of production.<sup>7</sup> Whereas past styles developed incrementally, allowing a maturing of 'indigenous motives' into artistic and 'true' ideas of necessity, this relationship between form and motive was lost. Therefore, no coherent style existed and technical progress was divorced from artistic intentions. Exacerbated by the replacement of traditional patronage with capitalist speculation and mass-production, artifacts obtained a different meaning that no longer owed to necessity but commercial consumption, driven by newly created demands and tastes. The effects of changing modes of production were a growing division of labour and generic artifacts that had to satisfy general marketplaces. The artist was forced to surrender his individuality and made doubly dependent: 'a slave to his employer and to the latest fashion that provides the employer with a market for his ware'.<sup>8</sup>

Although deeply concerned by what he sees, Semper is also inspired by the exhibition. In the market-oriented products for oriental bazaars, such as Persian carpets, he discovers usefulness despite an unspecific design, and the ability to maintain the original motives of an object, which is essential to the formation of a new style.<sup>9</sup> This sensibility to style and history was however lost in Europe, where commercialisation degraded the high arts to artistic irrelevance.<sup>10</sup> Nevertheless, Semper hopes that through a critical reassessment of historical knowledge a new synthesis of the arts able to overcome the burden and plundering of history is possible. 'While our art industries carry on aimlessly they unconsciously fulfil one noble task: the *disintegration of traditional types* by their ornamental treatment.'<sup>11</sup> Disintegration is necessary to resurrect a relevant art and establish new socio-cultural meaning, when through the utility of style, traditional forms and motives would fuse with industrial forms of production. In this process of stylistic formation, Semper asserts, history provides 'intellectual' models of analysis but is never imitated. One has to recognise that traditional types and forms are always 'borrowed or stolen' from

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<sup>5</sup> Semper, *Science, Industry, and Art*, p. 130.

<sup>6</sup> Semper remained politically active in London, evident in his selection to a provisional refugee committee in June 1851, to Karl Marx's dismay, who with Friedrich Engels was part of the immigrant group. See Heinz Quitzsch, *Die ästhetischen Anschauungen Gottfried Sempers* (Berlin: Akademie-Verlag, 1962), p. 12.

<sup>7</sup> Semper, *Science, Industry, and Art*, p. 135.

<sup>8</sup> Semper, *Science, Industry, and Art*, p. 139.

<sup>9</sup> Semper observes that these wares are 'perfect in technical-aesthetic beauty and style', but lack individuality, a 'higher phonetic beauty, and soul'; see *Science, Industry, and Art*, p. 141.

<sup>10</sup> Compare Semper, *Science, Industry, and Art*, p. 143.

<sup>11</sup> Semper, *Science, Industry, and Art*, p. 142.

preceding cultures, he explains, and high art is only revived once traditions disintegrate, when normative values proper to a cultural, social, and technical situation are obtained. Fundamental types are then stylistically synthesised and gain social relevance, enabling a progressive art that reclaims its intellectual grounding in taste and aesthetics. Even the Greek artistic achievements depended on a preceding establishment of a free society, when '*the partly foreign and partly native forms were first fused through their ornamental application to the products of industry, and a third new form was prepared*'.<sup>12</sup> Likewise, the exposition showed that a disintegration of traditions was once again necessary, demanding the incorporation of the 'destructive forces' of industry, capitalism, and science into the transformative process, '*before something good and new can result*'.<sup>13</sup>

'Style', remarks Semper, 'means giving emphasis and artistic significance to the basic idea and to all intrinsic and extrinsic coefficients that modify the embodiment of the theme in a work of art.'<sup>14</sup> Style is a measure of artistic proficiency and consistency, assuring that artifacts preserve their 'prototypical form' (*Urform*) and 'primordial idea' regardless of formal and material transformations. These interrelations between persistent typical motives and their material transformations are the thesis of Semper's *doctrine of style*, which he divides into three classes. First, an 'art historical' theory of style concerned with primordial motives and forms and their development.<sup>15</sup> Second, a 'technical' theory of style, according to which the translations of artistic motives in different materials or through different technical means have to be specific to material properties and manufacturing processes.<sup>16</sup> Third, a 'socio-cultural' theory of style, which external to the artifact itself, considers the impact of 'local, temporal, and personal influences' on form and meaning.

At a time with no predominant style, with style a battleground of national identities and challenged by new building types, and with architecture torn between historicism and revivalism, Semper finds the relationship between architecture and the technical arts perverted. The divorce of industrial products from their ornament, encourage either digressions of ornamental exuberance or a retreat into academicism that disregards material and manufacture. Artistic motives and their material manifestations are thus divisive instead of unifying the arts and their means. The principle of imitation, still central to Quatremère, is now blamed for the miserable state of the arts and perceived to obstruct their necessary renewal. Even though Quatremère distinguished the imitation of types and models, between invention and copy, warning that: 'It is never the material aspect of form that this imitation appropriates, but that which is intellectual; it never copies the thing itself,

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<sup>12</sup> Semper, *Science, Industry, and Art*, p. 145.

<sup>13</sup> Semper, *Science, Industry, and Art*, p. 144.

<sup>14</sup> Semper, *Science, Industry, and Art*, p. 136.

<sup>15</sup> For example, the motive of weaving is formative to the stylistic techniques and traditions of any wall decoration.

<sup>16</sup> This raises the question how modern modes of production alter the meaning, treatment, and application of traditional materials.

but the reasons for this thing', the notion of imitation had become obsolete and its subtleties carried no longer any meaning or credibility.<sup>17</sup>

Semper's conclusion that the stylistic crisis of the arts was caused by a divide between traditional crafts and new industrial production was shared by a coterie of designers gathering around Henry Cole (1808–1882). A civil servant and lobbyist for industrial design, Cole in his *Journal of Design and Manufacture* (1849–51) offered an intellectual platform to Richard Redgrave, Matthew Digby Wyatt, and Owen Jones in an effort to invigorate English industrial design and its theory.<sup>18</sup> The mastermind of the Great Exhibition, Cole provided his protégés with key curatorial positions. Yet, even Cole had to admit that 'the absence of any fixed principles in ornamental design is apparent in the Exhibition'.<sup>19</sup> The artist Redgrave in his jury reports distinguished between 'design', which included ornamentation, and 'ornament', cautioning that 'ornament is merely the decoration of a thing constructed [...] and must not usurp a principal place; if it do so, the object is no longer a work ornamented but is degenerated into mere *ornament*'.<sup>20</sup> The degeneration of ornament debased style and required a new synthesis of the principles of ornament with demands of utility, mechanical production, and modern society, as the architects Wyatt and Jones recognised.<sup>21</sup> In the aftermath of the exhibition, the role of ornament to design had to be intellectually rethought, laying the foundations for the Arts and Crafts Movement inspired by John Ruskin and instigated in the 1860s by William Morris.<sup>22</sup>

Aware of Cole's plans to found from the proceeds of the Great Exhibition a new College of Art and Manufactures with an attached school of design and design museum, Semper addresses in *Science, Industry, and Art* the need to reform design schools and develop a

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<sup>17</sup> 'Architecture', in *Quatremère's Historical Dictionary*, p. 80.

<sup>18</sup> A rationalisation and utilitarian approach to ornament and industrial design was central to the *Journal of Design and Manufacture*. Redgrave, demanded in his article 'Canons of Taste' the 'fitness in ornament to the thing ornamented', and added that carpets 'should be treated as flat surfaces and have none of those imitations of raised forms or architectural ornaments so often seen'. In *Journal of Design and Manufacture*, iv, 14 ff, as quoted by Pevsner in *Writers of the Nineteenth Century*, p. 158.

<sup>19</sup> Henry Cole, *Journal of Design and Manufacture* (1851), p. 158, as quoted by Bergdoll, *European Architecture*, p. 219.

<sup>20</sup> Richard Redgrave, 'Supplementary Report on Design', in *Reports by the Juries on the Subjects in the Thirty Classes into Which the Exhibition Was Divided* (London, 1852), p. 708; repr. in Mallgrave, *An Anthology from Vitruvius to 1870*, p. 495.

<sup>21</sup> Wyatt and Jones in response to the exhibition proposed new principles of ornament and style according to the division of labour in manufacturing. Agreeing with Redgrave that ornament is essential to redefine a new style, they stated that it had to overcome historicism and remain subservient to construction, and not be an end in itself. Jones, a polychrome activist, also remarked that the Oriental and especially Indian exhibits demonstrated the 'most valuable hints for arriving at a true knowledge of those principles both of Ornament and Colour in the Decorative Arts', which he contrasted with the false naturalism and historical styles of English products; see Owen Jones, 'Catalogue of the Museum of Manufactures', in *British Parliamentary Papers: Reports and Papers Relating to the State of the Head and Branch Schools of Design, 1850–53, Industrial Revolution, Design*, iv (Shannon: Irish University Press, 1972), p. 481.

<sup>22</sup> Mallgrave has covered the English debate on style and ornament in depth in 'The Idea of Style', see 'Part III: Style in London in the 1850s'.

national taste.<sup>23</sup> Semper blames the uncompetitive state of the industrial arts on an English educational system in which industrial schools are separated from art academies, subordinating the technical arts to historical academic styles. Confronted with growing capitalist demands, artistic intentions succumbed to merely satisfying fashion and novelty. England, diagnoses Semper, lacks a national style befitting her advanced industrial and political status, depending on foreign traditions, tastes, and craftsmen imported from France and Germany.<sup>24</sup> To overcome this predicament, he proposes to instruct the public in good taste and restructure the educational institutions. His proposal is reminiscent of Quatremère's Republic of the Arts, but while Quatremère saw it in terms of a political and elitist institute that would free the arts from the influence of the state, Semper wants the public education to be realised by the public, with the people acting as the jury to artistic competitions.<sup>25</sup> Semper even accepts that until architecture can achieve a synthesis with the new demands of style and technology, it 'must step down from its throne and go into the marketplace, there to teach—and learn'.<sup>26</sup> The process of disintegration and re-education is to be fostered by collections housed in the redundant Crystal Palace, presenting a complete survey of the technical arts and their stylistic demands, and detailing the 'history, the ethnography and the philosophy of Culture'.<sup>27</sup> The collections are to be complemented by lectures, which instruct on the relationships between arts and industry to science and '*the arts in their application to practical knowledge*'.<sup>28</sup> For the delivery of the lectures, five professional chairs should be established—Semper hoping to obtain one—to cover all possible industrial productions and specifically the areas of *ceramics*, *textiles*, *carpentry* and *joinery*, *masonry* and *engineering*, and their unity in *architecture*.<sup>29</sup> Semper later adopted the proposed structure of his five departments as the principle subdivision of a historico-cultural system of the arts, which he first developed as a comparative method in his London lectures before employing it in his magnum opus: *Style*.

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<sup>23</sup> Mallgrave alleges that Semper wrote *Science, Industry, and Art* mainly for the purpose to impress Cole and to promote himself for the new design school; compare 'The Idea of Style', p. 234.

<sup>24</sup> Augustus Welby Northmore Pugin had already campaigned for a national style and Gothic Revival in England, which won currency in 1836 with his publication of *Contrasts* and collaboration with Charles Barry on the winning competition scheme for the Houses of Parliament. It suitably expressed the union of the Gothic style with the English national spirit. Similarly, John Ruskin in *Seven Lamps of Architecture* (1849) expressed that architectural style was essential to the national identity and believed that an English style should derive from a Northern Gothic style.

<sup>25</sup> Compare Lavin, 'The Republic of the Arts', in *Quatremère*, pp. 148–75; and Semper, *Science, Industry, and Art*, p. 160.

<sup>26</sup> Semper, *Science, Industry, and Art*, p. 146.

<sup>27</sup> Semper, *Science, Industry, and Art*, p. 162. The description of 'A Complete and Universal Collection' was also given by Semper in 'Practical Art in Metal and Hard Materials (ware); its Technology, History and Styles' (1852); as cited by Hvattum in *Gottfried Semper*, p. 185.

<sup>28</sup> Semper, *Science, Industry, and Art*, p. 163. As given in a footnote, Semper modelled the suggested lectures on those at the Conservatoire des Arts et Métiers in Paris (1851–52): géométrie appliquée aux arts, géométrie descriptive, mécanique appliquée aux arts, physique appliquée aux arts, chimie appliquée à l'industrie, chimie appliquée aux arts, arts céramique, agriculture, économie industrielle, and législation industrielle.

<sup>29</sup> Compare Semper, *Science, Industry, and Art*, p. 163. This followed in principle the classification of the arts according to the four elements of architecture and its corresponding technical arts of *ceramic* and *textile*, with the addition of *woodworkers* (joiners and carpenters) and *masons* (and engineers).

## 2.1 LONDON LECTURES OF 1853–54

In the beginning of 1852, Cole was appointed the general superintendent of a new Department of Practical Art at Marlborough House and charged with reforming the School of Design and building a design museum.<sup>30</sup> Cole commissioned Semper to prepare a report on Minton ware and a historical review of decorative metalwork. The research for the survey of metalwork in 'Practical Art in Metal and Hard Materials (ware): Its Technology, History and Styles' (1852) was largely undertaken in the British Museum and provided the general basis for *Style*. On the strength of the reports, Cole employed Semper as a professor in the Department of Practical Art in August 1852.<sup>31</sup>

Semper gave his inaugural lecture 'On the Relation of the Different Branches of Industrial Art to each other and to Architecture' on 20 May 1853. In the lecture, he opposes Jones's doctrine that 'the Decorative Arts arise from, and should properly be attendant upon, Architecture', which was chosen as the pedagogical motto of the new design school.<sup>32</sup> Semper posits that 'the practical or industrial arts had arrived to a high degree of development many centuries before the invention of architecture as an art [...] the rule and laws of beauty and style, which we acknowledge, were determined and practiced long before the existence of any monumental art'.<sup>33</sup> Thus, architecture originated from the technical arts and, Semper even states, the times when architecture dominated the minor arts 'were not the periods most favourable for the development of high art of industrial art'.<sup>34</sup> His reversal of established academic doctrine propounds a profoundly different idea of style that considers artistic motives as emerging from the technical arts and conflating the idea of applied ornament with that of structural form and architecture.<sup>35</sup>

Semper's first public presentation was followed by five lectures in 1853 and in the next year enlarged to a series of seven lectures. These lectures anticipated the 'practical aesthetics' and contents of the *Style*, including the never written third volume on architecture. Six of the lectures are generally known in their posthumous German translation by Semper's son Hans in *Kleine Schriften von Gottfried Semper* (1884). However as Semper's command of English was limited, an accurate translation proved challenging and Hans Semper's editing

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<sup>30</sup> The Department of Practical Art was renamed in 1853 Department of Art and Science and later moved to South Kensington, where a museum, the current Victoria & Albert Museum, was built. Cole, Redgrave, Jones, and Pugin oversaw the selection of exhibits.

<sup>31</sup> Semper first taught a course on the Principles and Practice of Ornamental Art applied to Metal Manufacturers, which was later enlarged to the Practical Construction, Architecture and Plastic Decoration that, arranged as a vertical design studio, focussed on the teaching of drawing and the principles of style, and was complemented by a public lecture series.

<sup>32</sup> Owen Jones, *The Grammar of Ornament* (London: Day & Son, 1856), 'Proposition 1', p. 5.

<sup>33</sup> Gottfried Semper, Semper Archive, MS 117, fols. 1–2, as cited by Mallgrave in 'The Idea of Style', pp. 247–48. Semper and Jones's interest in polychromy and ornament, and many of their conclusions were similar, however. Jones agreed that ornament and style preceded representational art, having its origins in instinctive adornment.

<sup>34</sup> Semper, MS 117, fol. 4, as cited by Mallgrave in 'The Idea of Style', p. 248.

<sup>35</sup> Mallgrave in 'The Idea of Style' argues that Semper developed a different notion of style to which the ongoing style debate in England was almost 'irrelevant'.

resulted in additions and omission that changed the intended meaning to its detriment, which was evident when the original English transcripts were published in the 1980s.<sup>36</sup>

The first lecture of the series, entitled 'Outline for a System of a Comparative Theory of Style' (Entwurf eines Systems der vergleichenden Stillehre, 1853) by Hans Semper, observes that despite a vast knowledge and large body of writing, only few 'really and truly' works of art exist.<sup>37</sup> Unlike the arts, sciences dealt with this problem by systematically ordering knowledge in an 'endeavour to find again those connections between the things, and of transforming into an organic system of comparison what was before only an exterior and more or less arbitrary system of coordination and of exterior order'.<sup>38</sup> Recalling his time as a student in Paris and visits to the zoo of Jardin des Plantes under Cuvier directorship, Semper posits that the zoologist's comparative method and organic analysis of 'fundamental forms and Motives' should be appropriated to studies of formation in the technical arts.

Will it not be important to trace out some of those types of the artistical forms, and to follow them in their gradual progress from step to step up to their highest development?

A method, analogous to that which Baron Cuvier followed applied to art, and especially to architecture would at least contribute towards getting a clear insight over its whole province and perhaps also it would form the base of a doctrine of *Style*, and of a Sort of topic or Method, how to invent, which may guide us to find out the natural way of invention which would be more than could be allowed to the great Naturalist to do for his sublime science.<sup>39</sup>

Inspired by Cuvier, Semper seeks a theory of building and method of invention based on a comparative analysis of elemental types. While Quatremère considered comparison an intellectual device of abstraction, with the irreducibility of typal traits enabling a 'comparison with the model in reality, serving to rectify its irregularities, and correct its imperfections', Semper employs comparison to understand material and formal development.<sup>40</sup> Aligning

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<sup>36</sup> Semper on his arrival in London in 1850 spoke no English. On the problem of translating the lectures and his corrections, see Herrmann, 'Zur Übersetzung von Gottfried Sempers Aufsätzen in den "Kleinen Schriften"', in *Gottfried Semper: Theoretischer Nachlass*, pp. 153–77. Of the lectures, only five complete manuscripts have survived in the Semper Archive at the ETH. They were reprinted in the 1980s by *RES: Anthropology and Aesthetics* as: 'Outline for a System of a Comparative Theory of Style' (11 November 1853); 'The Development of the Wall and Wall Construction in Antiquity' (18 November 1853); 'On the Origin of Some Architectural Styles' (December 1853); 'On Architectural Symbols' (autumn 1854); and 'On the Relation of Architectural Systems with the General Cultural Conditions' (29 November 1854).

<sup>37</sup> Semper, 'Outline for a System of a Comparative Theory of Style', pp. 8–9 (MS 122, fol. 1).

<sup>38</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 8 (MS 122, fol. 3).

<sup>39</sup> Semper, 'Outline for a System of a Comparative Theory of Style', pp. 8–9 (MS 122, fols. 5–6).

<sup>40</sup> Quatremère, *Essay on Imitation*, pp. 279.

himself rather with Durand's definition of comparison as a representation of abstraction, it offers Semper an operative methodology on which his doctrine of style is founded.

While Quatremère stated that 'one of the principal occupations of science and philosophy is to search for their origin and primitive cause', which was embodied in type, he differentiated their methodologies and insisted that scientific methods are inappropriate to the arts.<sup>41</sup> For this reason, biology remained to Quatremère an analogy for an exemplary distinction between species (type) and individual (model), whereas Semper in his pursuit of a practical and evolutionary design theory adopts a positive formal and material agenda from the natural sciences. Semper's ordering according to fundamental types is operative and offers an analytical comparison through which artistic formation and history are examined and decontextualised. Thus, 'evolution' is not an inevitable natural process of formal selection and adaptation, but a wilful and at times rupturing selection by man as a cultured being. Semper would confirm this position after Charles Darwin in *On the Origin of Species* (1859) disseminated the modern concept of evolution: 'This application of the famous axiom "nature makes no leaps" and of Darwin's theory on the origin of species to the special world of the small re-creator—man—seems somewhat questionable to us, in view of what the study of monuments shows.'<sup>42</sup> Rather than artistic form being restrained by natural evolution, art makes nature subservient to the creative and cultural force of man.

The self-confessed architectural ally of Cuvier's comparative method, Durand, Semper complains, however 'puts the things into rows and brings about a Sort of Alliance between them by mechanical ways instead of showing the organic laws by which they are connected'.<sup>43</sup> Semper blames the paralysing specialisation of architecture, which hinders its necessary cultural liberation, on Durand's separation of architecture from the practical arts and aesthetics, and, perhaps most damning, on a lacking system of comparison. Durand's failure to him is symptomatic of the unwillingness to admit that proportion, symmetry, and decoration existed prior to architecture, when the 'Characters of the different architectural styles were clearly expressed in certain characteristic forms of the earliest industrial art, applied on the first necessities of life'.<sup>44</sup> While architecture traditionally sought its first principles in the primitive hut and, since Durand, in utility, Semper argues that utility depends on culture, and can only be achieved when culturally motivated technical skills have developed. This argument was also presented by Quatremère in his

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<sup>41</sup> 'Type', in *Quatremère's Historical Dictionary*, p. 255.

<sup>42</sup> Semper, 'On Architectural Styles', p. 268. When Darwin's theory became public, Semper had developed a theoretical framework ideologically closer to Cuvier's non-evolutionary position. However Hans Semper claimed that he had a distinct interest in Darwin and stated that his father recognised his idea in Seneca, making the note 'Darwin's Grundlehre'; see *Gottfried Semper: Ein Bild seines Lebens and Wirkens, mit Benutzung der Familienpapiere* (Berlin: Verlag von Calvary & Co, 1880), p. 4.

<sup>43</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 9 (MS 122, fol. 7). Legrand in his supplementary *Essai sur l'histoire générale de l'architecture* to the *Recueil et parallèle* had stated the intention to provide a 'natural history of architecture'.

<sup>44</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 9 (MS 122, fols. 9–10).

theory of origins, stating that the transition from the mechanical to the fine arts of architecture occurred at precisely the moment when through culture the type of carpentry evolved into the type of the hut.<sup>45</sup> Quatremère consequently insisted that types have corresponding functions in architecture and the mechanical arts.

Moreover, one may also cite many uses belonging to certain mechanical arts that may serve as examples. No one is unaware that a multitude of pieces of furniture, tools, seats, and clothes have their necessary *type* in their uses and the natural customs for which they are intended. Each of these objects finds its very *type*—and not its model—within the demands of necessity and within nature. [...] The same is true of a great number of buildings in architecture.<sup>46</sup>

Semper similarly illustrates in a typological comparison, how the practical arts are the driving force and origin of all artistic production. The Egyptian *situla*, containing the sacred water of the Nile, with its teardrop-shape and low centre of gravity is carried in pairs on yokes, while the Greek *hydria*, a vase-shaped pot with three handles and high centre of gravity is carried on the head during religious processions. Both are ritualistic vessels that contain water, with their design and decoration symbolising spiritual differences and the artifacts considered ‘national and religious emblems’.<sup>47</sup> Functional and cultural motives coalesced in the formal and ornamental specificity of design, a process formative to the stylistic principles of the applied arts and their maturing over time into the high arts of Egyptian architecture and a Greek Doric order. Even if architecture provided the first systematic rules and principles of style and beauty, uniting the arts under ‘one directing Idea’, its aesthetics and meaning arose from the technical arts.<sup>48</sup> However, refraining from a direct definition of the laws of beauty, Semper points out that the notions of style and beauty have a close moral alliance—allowing him to circumvent the problem of beauty and subsume its explication under the definition of style.<sup>49</sup> Beauty, so Semper, arises ‘1st, from using artistically the means and 2nd, from observing the limits, which are contained in and defined by the task and problem in question, as well as by the Accessories which Modify the Solution of it in every case’.<sup>50</sup>

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<sup>45</sup> Semper also knew Jules Ziegler’s *Études Céramiques: recherche des principes du beau dans l’architecture, l’art céramique et la forme en général* (1850), which proposed that Greek architecture originated from the rich typologies of pottery; see Adrian Forty, ‘Of Cars, Clothes and Carpets: Design Metaphors in Architectural Thought’, *Journal of Design History*, 2.1 (1989), The First Banham Memorial Lecture, 1–14 (p. 3).

<sup>46</sup> ‘Type’, in *Quatremère’s Historical Dictionary*, p. 256.

<sup>47</sup> Semper, ‘Outline for a System of a Comparative Theory of Style’, p. 10 (MS 122, fols. 12–13).

<sup>48</sup> Compare Semper, ‘Outline for a System of a Comparative Theory of Style’, p. 10 (MS 122, fol. 13).

<sup>49</sup> Semper hereby differs from Karl Rumohr, to whom a separate notion of style and beauty remained important: ‘Der Styl aber in dem Sinne, den ich festhalte, ist zwar allerdings ein Schönes der Kunst, aber noch keineswegs der Inbegriff alles Schönen der Kunst.’ See *Italienische Forschungen* (Berlin, Nicolaische Buchhandlung, 1827), p. 101.

<sup>50</sup> Semper, ‘Outline for a System of a Comparative Theory of Style’, p. 11 (MS 122, fol. 15).

Conceding that stylistic variations are independent of aesthetic considerations, Semper describes them in his lecture an 'Outline for a System of a Comparative Theory of Style' as a natural law and mathematical formula ( $U = C x,y,z,t,v,w$ ).<sup>51</sup> Hans Semper in his translation added text omitted by Semper, which made this statement appear as a functional reduction.<sup>52</sup> Far from it, Semper states himself, the mathematical equation only illustrates his thesis that: 'Every work of art is a *result*, or, using a Mathematical Term, it is a *Function* of an indefinite number of quantities or powers, which are the variable coefficients of the embodiment of it.'<sup>53</sup> He reformulates this more clearly in his mathematical study *Ueber die bleiernen Schleudergeschosse der Alten und über zweckmässige Gestaltung der Wurfkörper im Allgemeinen* (On the Lead Slingshot Missiles of the Ancients and the Functional Shape of Projectiles in General, 1859), written around the same time as the lecture but published some years later. 'One must treat formulas, in which the true laws of beauty would be expressed (if it is possible at all to formulate them), in any case only as equations in which variable and constant values are most diversely combined, and whereby the constant itself, depending on the case, equals very different values.'<sup>54</sup> The definition of style in the lecture therefore is consistent with the one in *Science, Industry and Art* as the artistic articulation of a 'basic theme' modified by 'intrinsic and extrinsic coefficients' in a work of art.<sup>55</sup> Maintaining a similar description in the *Style*, it explains that the doctrine of style 'sees beauty as a *unity*, as a product or a result, not as a sum or a series. It looks for the constituent parts of form *that are not form itself* but rather the idea, the force, the material, and the means—in other words, the basic precondition of form'.<sup>56</sup> Style therefore is to Semper an organic 'result' of variable factors, but never a functional addition.

The 'Outline for a System of a Comparative Theory of Style' further highlights the practical purpose and 'becoming' of style, the effects of modifying means and limits on artistic

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<sup>51</sup> Compare Semper, 'Outline for a System of a Comparative Theory of Style', p. 11 (MS 122, fol. 15).

<sup>52</sup> Hans Semper changed the meaning of the mathematical formula by inserting a different one and lengthy elaboration on its function from an earlier draft by Semper (MS 124, fols. 5–11), which he had omitted. This therefore seemed to imply a hierarchy and functionalist reduction of variable or classes that was unintended by Semper; compare Hans Semper, *Kleine Schriften*, pp. 267–68. The corruption of meaning by Hans's translation was pointed out by Herrmann in his archive studies and is re-discussed by Mallgrave, who blames it for a functionalist misinterpretation of Semper's theory; see 'A Commentary on Semper's November Lecture', *RES: Anthropology and Aesthetics*, 6 (1983), 23–31 (pp. 28–29).

<sup>53</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 11 (MS 122, fol. 15).

<sup>54</sup> 'Man dürfte die Formeln, in denen die wahren Schönheitsgesetze niedergelegt wären, (wenn es überhaupt möglich ist letztere zu formulieren) jedenfalls nur als Gleichungen behandeln, an denen veränderliche und konstante Grössen auf das Mannichfaltigste zusammenwirken; und diese Constanten selbst würden je nach den Umständen ganz verschiedenen Werthen entsprechen.' Gottfried Semper, *Ueber die bleiernen Schleudergeschosse der Alten und über zweckmässige Gestaltung der Wurfkörper im Allgemeinen* (Frankfurt am Main: Verlag für Kunst und Wissenschaft, 1859), p. 3 [my trans.].

<sup>55</sup> Semper, *Science, Industry, and Art*, p. 136. The analogy of a mathematical formula is already implied in this definition of style by the use of 'coefficient' and therefore no significant change in meaning is intended in the London lecture. Compare with Mallgrave claiming the opposite in *Semper: Architect of the Nineteenth Century*, pp. 217–18.

<sup>56</sup> Semper, 'Prolegomena', in *Style*, I, p. 72.

formation, by dividing the 'variable coefficients' of the style formula into two classes.<sup>57</sup> First, the exigencies of the artifact that arise from the laws of nature and necessity, and second, the external influences that affect the performance of the artifact.<sup>58</sup> Once again, Semper assures that they do not mean a reducibility of style to materialism or utility, as Durand suggested, rather the principles of style are evident in the typological transposition of an idea. For example, when the original meaning of weaving is upheld throughout the evolution of wall dressing and remains unaffected by material and formal changes. The first internal class of variables therefore consists of elementary ideas and artistic motives that persist regardless of their modification over time, and represent the universal condition of style. The second variables are external to the work of art, and contextual and individual in nature, allowing location, climate, geography, socio-political and religious influences, and the idiosyncrasies of the artist to affect the work of art. They provide an articulation of particular and individual styles (such as a collective Chinese or Raphael's individual style).

Rehearsing the argument of *Science, Industry and Art*, Semper repeats that capitalism and mass-production destroyed the traditional means and limits of the arts. To resurrect a lost relationship between artistic idea and manufacture, Semper demands the reconsideration of three universal criteria: 'First the use of the things. Secondly the material out of which they are done. Thirdly the modes of execution or the Processes, which come in question for their execution.'<sup>59</sup> According to the first criteria of use, every object has a functional intention, making it essentially a 'machine': a system of bodies that receives and exercises forces. Whether in mechanical or dynamical sciences, form is determined by the equilibrium of forces that is also characteristic of natural forms. For example the kernel-shaped ancient Greek slingshot, aerodynamically superior to its copy, a Prussian pointed musket-ball, demonstrates how knowledge of natural forms and forces enriches technical design with principled 'organic' solutions.<sup>60</sup> 'What is true in nature, has its application also for artistical forms, if they are animated by organic life, like the works of the Greeks are.'<sup>61</sup> The Greeks accomplished an 'organic life' by not only satisfying the demands of structure and construction but also taste. Their architecture was not just ornamented with symbols of nature, but conceived in organic terms. As Semper explains in *Ueber Schleudergeschosse*, the Greeks 'dared' to embody human forms and proportions in their structures through purposeful analogies, which attested that they 'by no means only followed the intuitions of a vague artistic instinct, in the way they organised and enlivened their architectonic structures'.<sup>62</sup> Knowledgeable of the laws of nature, they 'independent from all imitation',

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<sup>57</sup> Pevsner claimed that definition of style in the London lectures differed from earlier ones and was more applied. 'There are for instance symmetry, proportionality, and direction co-ordinated with height, breadth and depth.' Pevsner, *Writers of the Nineteenth Century*, p. 264

<sup>58</sup> Compare Semper, 'Outline for a System of a Comparative Theory of Style', p. 11 (MS 122, fol. 17).

<sup>59</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 13 (MS 122, fol. 21).

<sup>60</sup> Compare Semper, *Ueber Schleudergeschosse*, pp. 59–60.

<sup>61</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 15 (MS 122, fol. 26).

<sup>62</sup> 'Die Griechen allein wagten es, und es gelang ihnen, menschliche Formen zu Trägern ihres Gebälke zu machen, ein Wagniss, das einige unserer romantischen Aesthetiker, vielleicht mit einigem Anscheine des

created their own formations, 'which with those of nature only coincided in their comparability of laws', making their architecture exemplary and everlasting.<sup>63</sup> Architectural form thus became synthesised with ornament and able to unite the arts. This notion of ornament differs from previous definitions, according to which ornament was 'applied' to structure as a 'veiling' surface, as Bötticher for example maintained by continuing the Albertian tradition to separate ornament from beauty and structure.<sup>64</sup> To Semper ornament and structure, and surface and form, are indivisible—as in Cuvier's comparative anatomy—and ornament is considered a 'surface that effects'.<sup>65</sup>

*Die Tektonik der Hellenen* (1844–52) by Bötticher, which followed Schinkel's interpretation of historical tectonics and established an interrelation between structural rationalism and artistic symbolism, to an extent pre-empted Semper's theory.<sup>66</sup> In his introduction, Bötticher described the function of the wall as 'space enclosing' (*Raum verschließend*) and the hearth as the origin of Greek domesticity, providing the symbolic and social but also religious centre (as an altar).<sup>67</sup> Bötticher's description of Greek tectonics upset Semper, when he first read the book in 1852, as it questioned the originality of his own thesis.<sup>68</sup> However, it was in fact Müller in the *Handbuch der Archäologie der Kunst* (1830), who established the notion of tectonics in architecture, known to Semper from his time in Germany.<sup>69</sup> Bötticher in the *Tektonik* further stated that the principle of Greek tectonic 'is demonstrably completely identical to the principle of creative nature: to express the idea of

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Rechtes, als eine Verirrung ihres Geschmacks betrachten—aber es bietet uns das Streben, was sich in diesem Wagniss kund gibt, mindestens einen beispielweisen Beleg der Thatsache, dass die Griechen sich ihre Aufgabe klar gestellt hatten und keineswegs allein den Eingebungen eines vagen Künstlerinstinktes folgten, indem sie ihre architectonischen Gebilde organisirten and belebten.' Semper, *Ueber Schleudergeschosse*, p. 5 [my trans.].

<sup>63</sup> 'Der Wunsch, an einem möglichst einfachen Beispiele nachzuweisen, dass die Griechen nicht lediglich die Naturgesetze beobachteten und die nach diesen entandenen Formen nachzubilden bestrebt waren, dass sie vielmehr diese Gesetze wirklich erforscht hatten und aus ihnen heraus, unabhängig von aller Nachahmung, ihre eigenene Gebilde schufen, die mit denen der Natur eben nur in der Gemeinschaftlichkeit des Gesetzes zusammentrafen.' Semper, *Ueber Schleudergeschosse*, p. 6 [my trans.].

<sup>64</sup> Alberti stated 'that beauty is some inherent property, to be found suffused all through the body of that which may be called beautiful; whereas ornament, rather than being inherent, has the character of something attached or additional'. In *On the Art of Building in Ten Books*, p. 156.

<sup>65</sup> Andrew Benjamin develops the term 'surface effect' as expressing the organisational logic and 'material infinite' possibilities of procedural relation and articulation of individual elements (including, structure, volume, and programmable space), which are inherent to the surface; see 'Surface Effects: Borromini, Semper, Loos', *The Journal of Architecture*, 11.1 (2006), 1–36.

<sup>66</sup> See Mitchell Schwarzer, 'Ontology and Representation in Karl Bötticher's Theory of Tectonics', *Journal of the Society of Architectural Historians*, 52.3 (1993), 267–80.

<sup>67</sup> Compare Karl Bötticher, *Die Tektonik der Hellenen* (Potsdam: Verlag von Ferdinand Riegel, 1852), I, pp. xvii and xxi–xxii.

<sup>68</sup> Semper read Bötticher's *Tektonik* for the first time in the British Museum on 13 December 1852 and realised the similarities with his own theories. It forced him to clarify the use of tectonics, ornament, and symbolism, and motivated him to deliberately denigrate Bötticher; see Herrmann, *Semper: In Search of Architecture*, p. 139–52.

<sup>69</sup> Karl Otfried Müller's *Handbuch der Archäologie der Kunst* was listed in Semper's Dresden library; see Semper Archive, MS 148.

each element in its form'.<sup>70</sup> Semper like Bötticher believed that this tectonic principle could not be copied from nature but was a human invention. Tectonic elements constituted the alphabet of an architectural formal language and was disclosed by the relationship of core-form (*Kernform*) to art-form (*Kunstform*) and its juncture (*Junktur*).

Each individual fragment emanates from the whole; it is therefore an essential necessary part, an integrating element thereof, with each of them assigned and allocated a special function and place by the whole. [...] The realisation of the idea of each fragment can be considered as achieved by two elements: the core-form and the art-form. The core-form of each fragment is the mechanically necessary, the statically functional scheme; the art-form in contrast is only a function-explaining characteristic. This characteristic not only represents the essence of each fragment, but also its relation to adjacent fragments, and contains the juncture with cooperating fragments; furthermore all fragments are already consolidated in a static unity, and all fragments are visually and coherently connected by juncturing symbols into one single inseparable organism. This explaining characteristic is therefore as it were only a veiling of the fragment, a symbolic attribution thereof—*decoratio*. It is formed at the same moment as the mechanical scheme of the fragments is conceived, they are both one thought.<sup>71</sup>

Bötticher defined tectonics as primarily a structural and materialist concept, and recognised its expression heightened by a necessary symbolic and material 'veiling' (*Hülle*), which closely links structure to ornament and is visually comprehended. Semper shared this notion of tectonics as a psychological expression of construction and an elemental and phenomenological architectural spectacle.<sup>72</sup> However, he gave the transformation of constructive expression greater importance and independence. Semper made two

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<sup>70</sup> 'Das Princip der Hellenischen Tektonik ist nachweisbar ganz identisch mit dem Principe der schaffenden Natur: den Begriff jedes Gebildes in seiner Form auszusprechen.' Bötticher, *Tektonik*, I, p. xiv [my trans.].

<sup>71</sup> 'Jedes einzelne seiner Glieder geht nur aus dem Ganzen hervor, ist deshalb ein unerlässlich nothwendiger Theil, ein integrierendes Element desselben, welchem aus dem Ganzen je seine besondere Funktion und Oertlichkeit übertragen und angewiesen wird. [...] Die Verwirklichung des Begriffes jedes Gliedes kann man betrachten als durch zwei Elemente geschehen: durch die Kernform, und durch die Kunstform. Die Kernform jedes Gliedes ist das mechanisch nothwendige, das statisch fungierende Schema; die Kunstform dagegen nur die Funktion-erklärende Charakteristik. Diese Charakteristik versinnlicht aber nicht bloß die eigene Wesenheit jedes Gliedes, sondern auch seinen Bezug zu den anschließenden Gliedern, sie enthält auch die Junktur der mit ihm wirkenden; und so wie schon mechanisch alle Glieder zu einer statischen Einheit vereinigt sind, so verknüpfen bildlich die jungierenden Symbole alle Glieder folgerecht zu einem einzigen untrennbaren Organismus. Diese erklärende Charakteristik ist daher gleichsam nur eine Hülle des Gliedes, eine symbolische Attribution desselben—*decoratio*. Sie entsteht mit demselben Augenblicke im welchem das mechanische Schema des Gliedes konzipiert wird; der Gedanke an beide ist Eins.' Bötticher, *Tektonik*, I, pp. xiv–xv [my trans.].

<sup>72</sup> Fritz Neumeyer in 'Tektonik: Das Schauspiel als Objektivität und die Wahrheit des Architekturschauspiels' similarly wrote: 'Jede Konstruktion hat zugleich auch eine eigene ästhetische Dimension. Sie liegt nicht in der Konstruktion selbst als technische Realität, sondern im *Bild der Konstruktion* begründet, auf das der Begriff *Tektonik* zielt.' In *Über Tektonik in der Baukunst*, ed. by Hans Kollhoff (Brunswick: Vieweg, 1993), pp. 55–77.

annotations to this section of Bötticher's *Tektonik*: he noted that the distinction between core-form and art-form in tectonic details could be applied to whole structures and not just its parts, and that core-form was not 'conceived' independently but derived from necessity.<sup>73</sup> This revealed three critical differences between his and Bötticher's theory. Semper disagrees that core-form is of a higher order than art-form and that structure and ornament are separable, in fact, he claims the opposite, that the *dressing* motive is more elemental than structure, yet that both are joint, if not indistinguishable, in their material formation. In addition, the relationships of core-form and art-form is not just explained by mechanics, but equally motivated by tradition, culture, and history, their 'structural-symbolic' development.<sup>74</sup> Consequently, Semper objects to Bötticher's view that Greek architecture is autonomous and autochthonous, or based on an original stone construction, claiming that the elements of architecture and stone construction were developed before the Greeks.<sup>75</sup> The difference in their positions is most evident in their definition of style. Bötticher states that 'the origin of all specific styles rests on the effect of a new structural principle derived from the material and that this alone makes the formation of a new system of covering space possible and thereby brings forth a new world of art-forms'.<sup>76</sup> He predicts that the proliferation of iron will lead to a new synthesis of style. This purely structural-materialist definition of style is diametrically opposed to Semper's doctrine of style with its fusion of historical, technical, and socio-cultural aspects.<sup>77</sup> Semper even rejects iron as an appropriate construction material, as being a reduction of material to pure function, it perverts the proportions of stability and denies a dressing of structure.<sup>78</sup>

Spurred on by the *Tektonik*, Semper by 1854 began to study empirical systems of beauty and laws of proportion by considering the dynamic origins of forms in nature and their

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<sup>73</sup> Compare with Herrmann in *Semper: In Search of Architecture*, p. 141.

<sup>74</sup> Semper later argued that the Greek temple evolved from a 'structural-symbolic' development of Egyptian principles into an organic and formal idea, which in intention was independent from material. 'Therefore the Greek architectural style did not draw a distinction between the "core schema" and "art schema", a distinction that unmistakably contains a slavish tendency to Egyptianization. Professor Bötticher—and let this be said with all regard for his learning, taste, and acumen—was inspired by Hermes Trismegistus, who was also the guiding spirit of Pythagoras when he wrote his exegesis on Hellenic temples.' *Style*, I, p. 379.

<sup>75</sup> Semper ridiculed Bötticher, stating the Hellenic 'columnar style did not spring from stone construction as Athena, perfect and fully armed, sprang from the head of Zeus (as Carl Bötticher would have it). It was, in fact, long prefigured by the ancient Asiatic encrusted *pegma*', and comparable to the development from timber to metal and stone styles in statuary. See *Style*, I, p. 374.

<sup>76</sup> Karl Bötticher, 'The Principles of the Hellenic and Germanic Way of Building with Regards to Their Application to Our Present Way of Building' (1846), a speech commemorating Schinkel's birthday in 1846; trans. by Wolfgang Herrmann *In What Style Should we Build? The German Debate on Architectural Style* (Los Angeles: Getty Publications, 1992), p. 153.

<sup>77</sup> Semper and Bötticher's notion of tectonics and its relation to art-form and core-form are discussed by Hartoonian, who misreads Bötticher as giving priority to the art-form; see 'Montage', in *Ontology of Construction*, pp. 5–28.

<sup>78</sup> Compare with Herrmann, 'Semper's Position on Iron as a Building Material', in *Semper: In Search of Architecture*, pp. 174–83. One of the few buildings in which he saw a potential for iron construction was Crystal Palace. Semper generally considered metal only as a form of decoration or incrustation.

relevance to the arts.<sup>79</sup> He first explored this issue in the treatise *Ueber Schleudergeschosse* and subsequently in numerous lectures, notes, and essays, which he later consolidated in the 'Prolegomena' to the *Style*.<sup>80</sup> *Ueber Schleudergeschosse* mathematically studies the behaviour of aerodynamic bodies and natural forces, and demonstrates that the Greeks knowingly incorporated these forces into the 'tectonic' designs of slingshots by optimising the curved trajectory of projectiles. In the arts, the same controlled curvatures were evident in the plastic forms characterising Greek tectonic profiles. Nonetheless, 'it should not be maintained that the Greeks designed their forms according to mathematical formulas, which in art would be absurd, but that the law of nature followed by the Greeks in the limits of their form-making, everywhere letting the tension dominate, was not vaguely intimated but clearly recognised'.<sup>81</sup> The Greeks visualised the 'tension' observed in nature as curves that represented how a linear direction of movement or growth is bent by its resistance to natural forces. This is evident in the expression of trajectories as logarithmic curves, but also in the shapes of projectiles and mussels. Likewise, the echinus, deriving from the Greek word for sea urchin, illustrates how the representation of natural laws as tension curves was consistently applied to their designs and adornments, which related surfaces to space and formed an artistic and ornamental language that not imitated nature but derived from her principles.<sup>82</sup> It revealed ornament not as a superficial symbolic 'veiling' of structure, as Bötticher declared, but as sharing the same organic principles underlying the design of structures. This crucial difference in mind, Semper in *Ueber Schleudergeschosse* attacks Bötticher: 'he is

<sup>79</sup> The time of spring 1854 is given by Semper and relates to a conference on the laws of beauty and tectonics in Greek architecture organised by the RIBA. Mallgrave provides an earlier date of late 1852 or early 1853; compare *Semper: Architect of the Nineteenth Century*, pp. 222–23.

<sup>80</sup> *Ueber die bleiernen Schleudergeschosse* was published in 1859 but written 1853–55. The other texts are the inaugural lecture at the Zurich Polytechnikum 'On the Formal Lawfulness of Ornament and its Meaning as an Artistic Symbol' (27 December 1855); the 'Theory and History of Style in Architecture' (MS 186), which details a new outline of *Style* in a letter to his publisher Suchsland (29 October 1856); *Ueber die formelle Gesetzmässigkeit des Schmuckes und dessen Bedeutung als Kunstsymbolik* (1856); and a fragmentary essay on *Theory of Formal Beauty* (MSS 168–81), written probably around the mid-1850s with revision made up to 1859.

<sup>81</sup> 'Mit dieser Bemerkung, die sich auch auf die plastische Formen der Griechen erstreckt, bei denen nichts Schwulstiges erscheint, sondern alles Muskelwerk in Flächen und scharfen Uebergängen gehalten ist, soll nicht behauptet sein, dass die Griechen ihre Formen nach mathematischen Formeln construirten, welches in der Kunst anzunehmen absurd wäre, sondern dass sie das Gesetz der Natur, wonach diese bei ihren Formengebungen die extremen Grenzen beobachtet und überall Spannung herrschen lässt, nicht bloss dunkel ahnten, sondern klar erkannten.' Semper, *Ueber Schleudergeschosse*, p. 60; as cited by Mallgrave in *Semper: Architect of the Nineteenth Century*, p. 225. This analogical rather than technical interest in mathematics might explain why Semper never discussed the potential of projective geometry to derive form in the field of stereotomy, rather emphasising the continuity of artistic motivations. Trained in mathematics, he would have been capable to grasp the geometric problems and potential, as Bernard Cache argues in 'Gottfried Semper: Stereotomy, Biology, and Geometry', *Perspecta*, 33 (2002), *Mining Autonomy*, 80–87.

<sup>82</sup> In *Ueber die formelle Gesetzmässigkeit des Schmuckes und dessen Bedeutung als Kunstsymbolik* (1856) Semper termed the ornamental embodiment of motion 'directional adornment' (*Richtungsschmuck*), which with the symmetry of hangings (*Behang*) and proportionality of rings or encirclement formed the three general types of adorning the human body, but more importantly represented the principles of configuration (*Gestaltungsmomente*). For the ornamental motive of motion in Semper's theories see Carrie Asman, 'Ornament and Motion: Science and Art in Gottfried Semper's Theory of Adornment', in *Herzog & de Meuron: Natural History*, ed. by Philip Ursprung (Baden: Lars Müller Publishers, 2005).

convinced that any true art-form must be the expression of a certain law of inner necessity, as it is certainly the case for natural forms', adding, with the intention to undermine this functional-mechanical explanation, that so far no convincing argument has supported this proposition.<sup>83</sup> Instead of explaining the laws of necessity through function, Semper suggests that artistic design reflects on a conflict between elemental and vital forces (*Lebenskraft*), which the artist resolves guided by his artistic sense and studies of natural laws. Mechanical principles of statics are insufficient to explain art alone, as they apply to any construction, and the Greeks only succeeded by understanding natural forces and the life of forms.

The monuments and implements of the Hellenes are not constructed, turned, and cast, they are *grown*, they are not just frameworks or so-called 'structural plans', which are decorated by means of attached symbols from the animal and plant kingdom, to what Professor Karl Bötticher in Berlin wants to make them into, and what the Egyptian works really were, their forms in *themselves* are such, as the organic forces create when they come into conflict with heavy matter.<sup>84</sup>

The manuscript for a *Theory of Formal Beauty* (Theorie des Formell-Schönen, ca. 1856–59), reprinted in large parts verbatim in the 'Prolegomena' of the *Style*, clarifies how style subsumes aspects of beauty. Semper propounds a notion of beauty that explains metaphysical conditions in formal terms. 'Tectonics', he writes, 'is an art that takes nature as model—not nature's concrete phenomena but the uniformity [*Gesetzlichkeit*] and the rules by which she exists and creates.'<sup>85</sup> It is 'a truly cosmic art', which man emulates in the adornment of his body and works. This adornment is first applied to the implements of industrial arts, to movable objects, and later to the static monuments of architecture. Formal beauty is characterised by 'harmony, symmetry, analogy, eurythm, and rhythm', and 'are not just symbolic expressions or simple analogies but really signify identical

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<sup>83</sup> '... weil er überzeugt ist, dass jede wahre Kunstform der Ausdruck eines gewissen Gesetzes innerster Nothwendigkeit sein müsse, gleich wie dieses bei den Naturformen sicher der Fall ist;—doch hatter er weder bei früheren Gelegenheiten, noch damals die Weise, womit die Aesthetik bei Untersuchungen dieser Art verfuhr, um zu ihrem Resultate zu gelangen, billigen und sich von der Richtigkeit und dem praktischen Nutzen des letzteren überzeugen können.' Semper, *Ueber Schleudergeschosse*, pp. 1–2 [my trans.].

<sup>84</sup> 'Die Monumente und die Geräte der Hellenen sind nicht konstruirt, gedreht und gegossen, sie sind *gewachsen*, sind nicht bloss Gerüste oder sogenannte "Strukturschemen", die mittels äusseren Anheftung von Symbolen aus der animalischen und vegetabilischen Welt verziert sind, wozu Professor Karl Bötticher in Berlin sie machen will, und was die Aegyptischen Werke wirklich waren, ihre Formen in *sich* sind solche, wie sie die organischen Kräfte hervorbringen, wenn sie mit der schweren Substanz in Conflict geraten.' Semper, *Ueber Schleudergeschosse*, pp. 4–5 [my trans.]. Semper owed his differentiation between the character of monument as stable and implement as movable to Bötticher.

<sup>85</sup> Gottfried Semper, *Theorie des Formell-Schönen* (ca. 1856–59), Semper Archive MS 179, fols. 1–46. English translation: 'The Attributes of Formal Beauty', trans. by Wolfgang Herrmann, in *Gottfried Semper, In Search of Architecture* (Cambridge: Cambridge University Press 1984), pp. 219–44 (p. 219); hereafter cited as *Theory of Formal Beauty*.

qualities' achieved by the different means of each art.<sup>86</sup> Semper envisions a completeness of beauty that is not instantly comprehensible, but unfolds over time with an increasing awareness of the interplay between static-dynamic forces. Even though architecture in its composition unites the arts intuitively—a phenomenon that Semper owing to Rumohr terms the 'household of the arts'—the industrial arts 'are the works in which the stylistic laws and architectural symbols had been first developed, in which they can be best witnessed in their primitive state and most easily comprehended'.<sup>87</sup>

Semper's concept of formal beauty originates from the Vitruvian notions 'authority' and 'analogia', from symmetry and proportion in architecture in correspondence to the human body.<sup>88</sup> He derives from *analogia* a thesis of formal beauty in phenomena, which depends on the translation of a universal idea into momentary individuality, a configuration (*Gestaltung*) that allows its arrangement from generality to individuality in order to become comprehensible. This formal specificity and structural interdependence is also expressed by a unity of movement, the coinciding of the individual 'direction of configuration' (*Gestaltungsrichtung*) with a common 'axis of configuration' (*Gestaltungsaxe*), which is shared by the discrete elements of the phenomenon, with many phenomena further unified by a third 'direction of movement or volition' (*Bewegungs- oder Willensrichtung*).<sup>89</sup> These directions are commonly found in natural growth and correspond to three-dimensional space. Defined by three 'authorities', they denote 'the satisfying impression given by the part that unite and work together toward a total effect'.<sup>90</sup> The authorities are the macrocosmic authority (symmetry), the microcosmic authority (proportionality), and the authority of directionality (movement and growth); with an additional fourth authority of content (fitness of content) uniting the first three authorities as a 'unit of purpose' (*Zweckseinheit*).<sup>91</sup> The unit of purpose is internally explained by the dominance of one of its lower orders of authority structuring its organic form and providing an objective overall character and purpose. Comparable to Kant's *purposiveness of nature*, this permits subjectivity and a self-referential yet organised unity of purpose that forms the basis of empirical cognition.<sup>92</sup> With all four authorities acting collectively, they create a rational objective purpose and subjective purposiveness, 'they fuse a plurality into a unit; furthermore, they are absolutely formal, that is to say they adhere to the abstract and

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<sup>86</sup> Semper, *Theory of Formal Beauty*, p. 221.

<sup>87</sup> Semper, *Theory of Formal Beauty*, p. 224.

<sup>88</sup> Semper also refers to a contemporary reinterpretation of *proportions* by Adolf Zeising. *Neue Lehre von den Proportionen des menschlichen Körpers* (1854) and *Ästhetische Forschungen* (1855).

<sup>89</sup> Compare Semper, *Theory of Formal Beauty*, p. 228. This corresponds to *Ueber Schleudergeschosse*, where Semper identifies three directional forces, an ordering hierarchical force of gravity, an individual direction or axis of configuration along which a phenomenon develops, and a direction of movement or volition of a phenomenon.

<sup>90</sup> Semper, *Theory of Formal Beauty*, p. 233.

<sup>91</sup> Semper hereby combines the 'laws of inner necessity', which derive in parts from his studies in *Ueber Schleudergeschosse*, into an argument of formal beauty. The first three authorities relate to the *symmetric* axis, *proportional* axis, and *axis of direction*.

<sup>92</sup> Compare with Hvattum's discussion of a shift in understanding 'purpose' in the natural sciences and its relation to Kant's notion of organic systems; in *Gottfried Semper*, pp. 124–32.

formal attributes of the finished phenomenon' and are totally internal, excluding any external factors such as history and material.<sup>93</sup> Therefore, formal beauty is immanent in its principles of configuration (*Gestaltungsmomente*) and Gestalt, obtaining its moral and aesthetic values through a rootedness in harmonious natural laws.

However, there is also a stylistic conception of what is beautiful in art—this considers the object not as a collectivity but as a unit, as the uniform result or function of several variable values that unite in certain combinations and form the coefficients of a general equation; by giving these variables the values appropriate to the particular case, one will arrive at the solution of the problem:  
 $U = C(x, y, z, t, v, w \dots)$ .<sup>94</sup>

Revisiting the explanation of the coefficients in the lecture 'Outline for a System of a Comparative Theory of Style' (1853), Semper now crucially adds: 'By considering formal beauty as an emanation of all these factors, that is as a "coming into being", we comprehend aesthetics from a purely empirical viewpoint.'<sup>95</sup> Thus, internal coefficients represent the material modification of primordial types by the external cultural, individual, and historical conditions of style, making a work of art relevant to its time and context. It also elucidates Semper's notion of *practical aesthetics* which, based on the configurations of formal beauty and doctrine of style, incorporates a historical becoming in its practical method of invention. Aesthetics and beauty are no longer exclusively ideal categories, but are also indivisible from material and function. This shift was anticipated in the lecture on a systematic theory of style.

Having considered the 'use of the thing', Semper understands material as an agent of style. The material aspects of an artifact are determined by its fitness for purpose, the properties, limitations, and potential for invention that material offers.<sup>96</sup> Therefore, materials are inseparable from processes of manufacture, and both define style. Rumohr, whom Semper quotes, in his *Italienische Forschungen* regarded material as the principal factor of style, claiming: 'Style is the accommodation of the Artist to the intimate demands of the material in which the sculptor really forms his objects, and the painter represents them.'<sup>97</sup> As Rumohr then continued to qualify—and Semper seems to deliberately omit—material represents neither a 'spiritual enquiry' nor a specific manner, as to Winckelmann, but style emerges 'only from the appropriate, and necessarily modest and sober feelings of the external restriction of art through the rough and, to the artist, shape-free material'.<sup>98</sup>

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<sup>93</sup> Semper, *Theory of Formal Beauty*, p. 241.

<sup>94</sup> Semper, *Theory of Formal Beauty*, p. 241.

<sup>95</sup> Semper, *Theory of Formal Beauty*, p. 243.

<sup>96</sup> Compare Semper, 'Outline for a System of a Comparative Theory of Style', p. 15 (MS 122, fol. 27).

<sup>97</sup> Rumohr as cited by Semper in 'Outline for a System of a Comparative Theory of Style', p. 15 (MS 122, fol. 28); and *Theory of Formal Beauty*, p. 243.

<sup>98</sup> 'Also werden wir nicht wesentlich weder vom Wortgebrauch, noch von dem eigentlichen Sinne der besten Künstler dieser Zeit abweichen, wenn wir den Styl als ein zur Gewohnheit gediehenes sich Fügen in die

Semper withholds Rumohr's restriction, as it contradicts his subordination of material to artistic ideas, which is necessary in order to consider style through a comparison of types with their own specific stylistic requirements. Whereas to Rumohr types are 'the uniform representation of similar, or related artistic challenges', forming an almost negligible precondition to style, which is realised by the general and particular 'demands of the crude artistic material' specific to each art, Semper vehemently disagrees.<sup>99</sup> He calls attention to their important reciprocity and makes type central to his doctrine of style.

Types as we have seen, are primitive forms, prescribed by necessity, but modified after the first materials, which were used for their embodiment. Now it has happened very often, that changes were introduced in the material and the manner of execution of these types. Then the secondary forms become plastic or pictorial treatments of the types. The Styles, which then resulted out of these secondary treatments were composite Styles, which partook on one hand of the *types*, and the conditions of Style, of the old materials employed for the latter, and on the other hand, they partook of the Style which suits the new selected substance and manner of treatment.<sup>100</sup>

Style, insists Semper, is irreducible from types. The perpetual interpretation of typal ideas through style, according to contributing or limiting coefficients, is essentially receptive, but also resistant, to the conditions of materials and manners.<sup>101</sup> Over time and with its *material transformation*, the effects of type and style become hybridised. While typal motives persist, stylistic requirements consistent with material properties change, or one material accommodates different stylistic requirements.<sup>102</sup> Material transformation therefore signifies a process of stylistic renewal of typal ideas.

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*inneren Forderungen des Stoffes erklären, in welchem der Bildner seine Gestalten wirklich bildet, der Maler sie erscheinen macht. Styl, oder solches, was mir Styl heißt, entspringt also auf keine Weise, weder, wie bei Winkelmann und in anderen Kunstschriften, aus einer bestimmten Richtung oder Erhebung der Geistes, noch, wie bei den Italiener, aus den eigentümlichen Gewöhnungen der einzelnen Schulen und Meister, sonder einzig aus einem richtigen, aber notwendig bescheidenen und nüchternen Gefühle einer äußeren Beschränkung der Kunst durch den derben, in seinem Verhältnis zum Künstler gestalt-freien Stoff.' Rumohr, Italienische Forschungen, p.87.*

<sup>99</sup> 'Über den Typus, oder über die Gleichförmigkeit in der Darstellung gleicher, oder verwandter Kunstaufgaben, werden wir leicht hinweggehen dürfen. [...] Die Forderung des derben Kunststoffes, deren Erfüllung ich Styl nenne, sind, einmal allgemein, jegliche Kunstart gemeinschaftlich umfassende; zweitens besondere, nur die einzelnen Kunstarten, jegliche für sich, betreffende.' Rumohr, *Italienische Forschungen*, pp. 84 and 88.

<sup>100</sup> Semper, 'Outline for a System of a Comparative Theory of Style', p. 16 (MS 122, fols. 30–31).

<sup>101</sup> Semper states: 'I see in the word "style" the quintessence of those qualities of a work of art that come to the fore when the artist *knows and observes the limitations imposed on his task by the particular character of all contributory coefficients and, at the same time, takes into account and gives artistic emphasis to everything that, within these limitations, these contributory coefficients offer, provide this will serve the purpose of the task.*' In *Theory of Formal Beauty*, p. 243. This directly relates it to his definition of style in *Science, Industry, and Art*, which he cites immediately afterwards.

<sup>102</sup> For example Semper claims that bronze clad wooden doors, which evolved into hollow and panelled bronze doors imitating wooden doors, are traditionally classified into timber and bronze doors, however, he suggests including both under the principle of wooden doors, their shared: stylistic type.

Once a material relationship between type and style is accepted, a formal and historical examination of styles and the comparison of their developments are necessary to reveal the formative motives of the arts. The intention of a *doctrine of style* is consequently to trace the evolution of typal motives in relation to the functional and material requirements of an artifact and its technical production, as well as its symbolic and cultural reading. This subtle yet important shift towards an interpretation of style as a process of *becoming*, from which general principles of design are deducible, is developed in the London lectures and confirmed in a lecture in Zurich ‘On Architectural Styles’ of 1869. Semper here clearly states: ‘Style is the accord of an art object with its genesis, and with all the preconditions and circumstances of its becoming (*Werden*). When we consider the object from a stylistic point of view, we see it not as something absolute, but as a result.’<sup>103</sup> Semper continues by citing Rumohr’s etymological definition: ‘Style is the stylus, the instrument with which the ancients used to write and draw; therefore, it is a very suggestive word for the relation of form to the history of its origin.’<sup>104</sup> By referring to style as a ‘diagrammatic’ process of design, Semper shares Rumohr’s materialist inclination, as personal stylistic intentions become affected by the general and stylistic means of materials through which they are physically expressed.<sup>105</sup> However, Semper exceeds Rumohr’s teleological materialism by positing that material is ‘something still higher, namely, the *task* or the *theme* for artistic exploitation’, whose subject matter he believes to be ‘man’ himself.<sup>106</sup> This double reading of material as a physical and spiritual condition, distinguishes Semper from Rumohr, making his doctrine of style an expression of immaterial types. Style, he concludes, is the ‘harmony of form with its inner-lying idea’.<sup>107</sup>

Semper’s idea of style significantly conforms with Quatremère’s explanation: ‘*style*, meant that which is least material, that is the conception of ideas and the art of developing them according to a certain order’.<sup>108</sup> Quatremère added that the meaning of style, with its roots in rhetoric, is absorbed by the fine arts and designates the ‘typical and characteristic form that some very general cause impress on the productions of the mind, depending on the

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<sup>103</sup> Gottfried Semper, ‘Ueber Baustile’ (Zurich lecture, 4 March 1869). MS 280. In Hans and Manfred Semper, eds, *Kleine Schriften* (Berlin: Spemann, 1884), pp. 395–426. English translation: ‘On Architectural Styles: A Lecture Delivered at the Rathaus of Zürich’ (1869), trans. by Mallgrave and Herrmann, in *The Four Elements of Architecture and Others Writings* (Cambridge: Cambridge University Press 1989), pp. 264–84 (p. 269). The Chicago School, especially Louis Sullivan and possibly Frank Lloyd Wright were influenced by Semper, as noted by Haag Bletter, ‘On Martin Fröhlich’s Gottfried Semper’, pp. 150–51. Mallgrave further points out that the lecture’s manuscript is in large parts identical to a draft ‘Introduction’ (MS 283) to the third volume of *Style*, also written in 1869; see *Semper: Architect of the Nineteenth Century*, pp. 303–04

<sup>104</sup> Semper, ‘On Architectural Styles’, p. 269. A similar quote of Rumohr appears in Semper, ‘The Attributes of Formal Beauty’, p. 243.

<sup>105</sup> A similar argument is made by Eisenman; compare ‘Diagram: An Original Scene of Writing’, pp. 26–35.

<sup>106</sup> Semper, ‘On Architectural Styles’, p. 269. He explains that the artistic endeavours of ‘man’ occur as an individual (family), establishing the themes of adornment and the primordial motives of architecture, as a collective (state), with the subordination of the arts to an institutional and monumental style of religious and political power, and as mankind (liberal arts), when the arts are liberated from oppressive cultural ideas and organically develop styles.

<sup>107</sup> Semper, draft for ‘Ueber Baustile’, MS 283, as quoted by Mallgrave, ‘The Idea of Style’, p. 344.

<sup>108</sup> ‘Style’, in *Quatremère’s Historical Dictionary*, p. 238.

differences in climate, physical impressions, habits, mores, the actions of governments and political or moral institutions'.<sup>109</sup> Quatremère, like Rumohr or Goethe, distinguished between 'style' as an intellectual characterisation and ideation describing distinct formal physiognomies (characters) and principles, and a lesser 'manner' defining the execution or particular interpretation of a style according to taste.<sup>110</sup> In contrast to Quatremère, Semper however concentrates on the material relation and translation of a typical idea into varied styles, making a new system of classifying the practical arts necessary. Premised on principles of organic comparison and in contradiction to established chronological or geographical grouping, Semper envisions their connections beyond 'time and space'.<sup>111</sup> The proposed four general classes are grouped according to original technical types: coating, ceramics, timber construction, and stone construction.<sup>112</sup> Having established an alternative classification system and history, Semper is aware that the formation of most artifacts is comparative and transitional, and in the case of architecture a unity of the arts. The new history of art, rewritten from a perspective of type and style, was first presented in the London lectures in 1853.<sup>113</sup>

The first of the lectures on 'The Development of the Wall and Wall Construction in Antiquity' (1853) rehearsed Semper's central motive of the transition of the arts: the thesis of 'wall coating' and 'dressing'. The metamorphosis of the coating motive from primitive weaving took place in material and stylistic translations that culminated in Greek polychromy, when the relationship between construction and ornament became artistically inseparable. This development was closely linked to that of the four elements of architecture, an architectural system Semper sees represented in the 'Carib Cottage' from Trinidad displayed at the Great Exhibition.

We see here all the elements of construction in their simplest expressions and combinations. Every element of construction is speaking for itself alone and has no connection with the others. This raw and elementary construction notifies no intention whatever from the side of the builder to be an architect or a decorator

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<sup>109</sup> 'Style', in *Quatremère's Historical Dictionary*, p. 239.

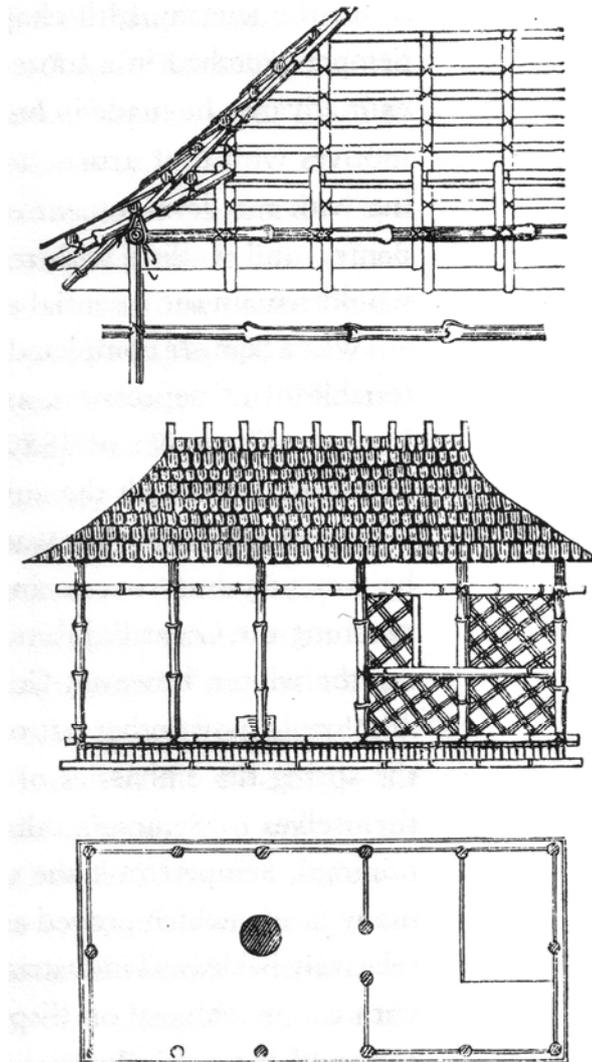
<sup>110</sup> Johann Wolfgang von Goethe defined style through the concepts of type and idea, claiming that: 'Just as simple imitation depends on a quiet regime and comfortable surroundings, and manner has a facility for grouping superficial appearances, so style is based on the profoundest knowledge, on the essence of things insofar as we can recognize it in visible and tangible forms.' In 'Simple Imitation of Nature, Manner, Style' (1789), trans. by John Gage in *Goethe on Art* (Berkeley: University of California Press, 1980), p. 22.

<sup>111</sup> For example, this allows the comparison of 'Merovingian and Byzantine Style with the Style of industrial art with the Assyrians and the Greeks of the Heroic age'. See Semper, 'Outline for a System of a Comparative Theory of Style', p. 16 (MS 122, fol. 32).

<sup>112</sup> Noticeably, metalworking was absent, as he believed it lacking any original types.

<sup>113</sup> Semper announced in 'Outline for a System of a Comparative Theory of Style' that the lectures would follow his new classification system, covering the four main technical arts and architecture. Hans Semper's translation in *Kleine Schriften* added to the manuscript (MS 122) earlier drafts (MS 124, fols. 14–28), which he entitled 'Bekleidungskunst' and discussed the four elements of architecture. It is however significant that Semper omitted these in order to conclude the lecture with a new system based on type and style, deemphasising the four elements. This was consistent with the later published *Style*.

with the exception of these mats, which divide the bedroom or inner apartment from that sort of open hall where the fireplace stands. The regular squares of these mats, made with barks of trees of different colours, show the first origin of wall decoration and of architectural ornament.<sup>114</sup>



**Fig. 15 Karaibische Hütte**

From Gottfried Semper, *Der Stil in den technischen und tektonischen Künsten, oder praktische Ästhetik: ein Handbuch für Techniker, Künstler und Kunstfreunde* (Munich: Bruckmann, 1863)

Semper also recognises the simple elements of construction in Chinese architecture, which preserved an early state of development with roofs supported by structural shafts independent from mat-walls—movable screens made up of woven or painted mats on wooden frames. The primitive Chinese principles represent to Semper the origins of ‘frameworks, mattings, draperies and moveable things, particularly with their polychromical and metallic ornamentations’ that developed in Assyrian, Egyptian, and Greek architecture into a ‘more constructive style of architecture’.<sup>115</sup> The Assyrians, despite being familiar with

<sup>114</sup> Gottfried Semper, Semper Archive, MS 129, fol. 1, repr. in Gottfried Semper and Harry Francis Mallgrave, ‘Lecture of November 18, 1853 on “The Development of the Wall and Wall Construction in Antiquity”’, *RES: Anthropology and Aesthetics*, 11 (1986), 33–42 (p. 33).

<sup>115</sup> Semper, ‘The Development of the Wall’, p. 34 (MS 129, fols. 3–4).

stone construction, only utilised it in their substructures, with walls retaining the principle of matting and tapestry. Although the exterior of buildings was adorned with ornaments in durable terra cotta, metal, or alabaster, the depicted scenes in bas-reliefs resembled those of polychrome tapestries. The evidence for the origins of wall-covering in embroidery was provided by ceremonial events, during which walls were covered by precious and richly decorated tapestries.<sup>116</sup> The eventual Assyrian habit to clad their walls and ceilings in valuable wood and stone was copied by the Persians, who began to exploit the joints of stone panels as ornament and translated the Assyrian wooden structures into stone while preserving the appearance of timber construction. The incomplete Persian 'style' of stone construction was also evident in Egyptian architecture, which, although making full use of its structural capacity, upheld the principle of *wall coating*. Their sand- or limestone structures were clad with polished granite into which 'textile ornamentation' was carved and then painted. Even the stone ceilings of temples simulated tent canopies, as in the Temple of Solomon.

Assyria and Egypt laid the foundation to a Greek perfection of stone construction, which had to transgress its origins and unite the separated elements of construction and ornament. The Greeks therefore did not imitate timber construction but synthesised the stylistic demands of stone: 'The Greek ornaments are emanations of the constructive forms and in the same time they are symbols of the dynamical functions of the parts to which they belong.'<sup>117</sup> Ornament was transparent in its symbolism, an abstract structural symbolism that related to its element of construction and was immediately legible without being defined in external terms or by a literal resemblance of nature.<sup>118</sup> The synthesis of ornamental surface and constructional form was organic in both its relation to form and culture, and Greek stone edifices were not constructed but 'sculptured'. For this reason, stone, including white marble was stuccoed and painted, valued for a polychrome and dematerialising rather than a material effect.<sup>119</sup> When the Romans eventually invented 'real' stone construction, fully realising the potential of vault construction already known to Assyrians, Egyptians, and Greeks, they 'were the inventors of architecture as a self-existing art, which may exist for itself without the assistance of the other branches of art' and replaced the idea of *dress*ing with a masonry motive—and the polychrome principle was only to re-emerge in medieval times.<sup>120</sup> The cyclical return of the *dress*ing principle, attested to an enduring relevance of textile ornaments and, so Semper, ought to be

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<sup>116</sup> The persistence of this motive is evident from the Bayeux Tapestry (1070s); see Semper, 'The Development of the Wall', p. 35 (MS 129, fols. 5–6).

<sup>117</sup> Semper, 'The Development of the Wall', p. 38 (MS 129, fol. 14).

<sup>118</sup> Compare with Semper, 'The Development of the Wall', p. 38 (MS 129, fol. 15). The balance between a realist and symbolic representation in Semper's ornament is discussed by Margaret Olin, 'Self-Representation: Resemblance and Convention in Two Nineteenth-Century Theories of Architecture and the Decorative Arts', *Zeitschrift für Kunstgeschichte*, 49.3 (1986), 376–97 (pp. 377–86).

<sup>119</sup> Compare Semper, 'The Development of the Wall', p. 38 (MS 129, fol. 15).

<sup>120</sup> Semper, 'The Development of the Wall', p. 38 (MS 129, fol. 16).

maintained at all times.<sup>121</sup> The *dressing* or *coating* motive was not limited to the development of wall enclosures but equally evident in the history of metalwork.<sup>122</sup> New materials and technologies offered artistic opportunities to resolve formal and symbolic contradictions but demanded a disintegration of traditions into new formative ‘higher ideas’. Semper enthuses that this reconciliation is ‘the start of a new artistic era, an artistic development even higher than the Hellenic’.<sup>123</sup>

While Semper in his following four lectures at the Department of Practical Art discusses the ‘types’ of ceramics and timber construction, in the final lecture of 1853, ‘On the Origin of Some Architectural Styles’, he argues for architecture as a monumental art.<sup>124</sup> The lecture recounts the ethnographic thesis already furnished in *The Four Elements* by elaborating the historical synthesis of architectural elements. The combinations of architectural style, Semper explains, ‘are different according to the differences between the races and nations, to their natural genius, to their political and religious tendency and development, and chiefly to the clime and nature of the countries in which they live’.<sup>125</sup> In keeping with this socio-political reading of architecture, he traces the development of roof-dominated types, associated with small dynastic and tribal societies that seek protection from nature. The tent was the domicile of nomadic hunters and gatherers, while agricultural lifestyles needed permanent huts, such as the northern European farmhouse that was arranged around a central open fireplace and covered by a large roof. These timber buildings were extended by adding similar roof-structures or constructing solid foundations and a basement that structurally allowed for additional storeys. At the same time, in the southern countries of Egypt and Assyria, a courtyard type developed.

In the theocratic Egyptian society, the temple with its *sekos* was the centre of social life and architectural fundamental type. With daily life characterised by religious rituals and a strict caste system, the spatial distribution of architecture was hierarchical. The expansion of temple compounds, accommodating an ever-increasing number of pilgrims, was one of repeating similar enclosed courtyards. These were at first protected by temporary draperies and eventually covered by solid roofs on columnar supports. The roof was elemental to the articulation of a spatial language and obtained symbolic significance, with the pyramidal

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<sup>121</sup> Compare Semper, *The Four Elements*, p. 126.

<sup>122</sup> The lecture summarised Semper’s unpublished report on the ‘Practical Art in Metal and Hard Materials (ware); its Technology, History and Styles’ of 1852.

<sup>123</sup> Semper, *The Four Elements*, p. 129.

<sup>124</sup> They are the lectures on the ‘Classification of Vessels’ (Klassifikation der Gefäße, 25 November); ‘On Vessel Parts’ (Ueber die Gefäßteile, 2 December); ‘Influence of Materials and their Treatment on the Development of Ceramic Types and Styles’ (Einfluß der Materialien und ihrer Behandlung auf die Entwicklung keramischer Typen und Stile, 9 December); a lecture on timber construction, roof forms, and roof construction (16 December), which only survived in fragments. They were translated and first published in parts by Hans Semper in *Kleine Schriften*. The tentative presentation dates are by Wolfgang Herrmann; see Mallgrave, ‘A Commentary on Semper’s November Lecture’, p. 23.

<sup>125</sup> Gottfried Semper, Semper Archive, MS 138, fol. 2, repr. in Semper, Gottfried, and Harry Francis Mallgrave, ‘London Lecture of December 1853: “On the Origin of Some Architectural Styles”’, *RES: Anthropology and Aesthetics*, 9 (1985), 53–60 (p. 53).

sekos emblematic of the sanctuary and anticipating the erection of pyramids. The progressively solid construction and interiorisation of the once open sanctuary resulted in a sophisticated new system of rituals and sanctity, with artistic decoration and symbolic hieroglyphs becoming an important addition to architecture by providing an added religious and social meaning. While religious signification remained essential to Assyrian architecture, their society was an aristocratic nation of traders. Social hierarchy and rank, as well as trading activity, determined the planning of their encampments, which followed a terrace and courtyard principle that resulted in terraced pyramids. The importance of the temple was equalled, if not surpassed, by the richly decorated royal palace on the summit of the pyramid, after which all other buildings were modelled. However, the gabled roof, despite being adopted in palaces, remained symbolic of divinity and the temple.<sup>126</sup> And with a rising secular society, artistic expression and decorative adornment turned away from religious codification and became noticeably naturalistic and individualistic.

In a related lecture 'On the Relation of Architectural Systems with the General Cultural Conditions' in 1854, Semper presents his anthropological thesis that architecture embodies a particular episteme. Architecture, states Semper, is specific to a nation and its age and, as they were to Quatremère, are artistic expressions of its 'social, political and religious institutions', as 'the forms of society as well as those of art are necessary results of some absolute principle or original idea' that precede them.<sup>127</sup> However, whereas Quatremère defines architecture as an intellectual and metaphysical embodiment of culture, Semper wants to understand how culture is directly formed by and informs the material productions of art and society. In this search, Semper identifies the hearth as the real and symbolic seed of all social forms, from which the first patriarchal tribes germinated into dynastic, absolutist, and then oligarchic societies. During the ancient formation of absolutist and despotic societies, the need to adorn and demand for luxury led to inventions in the technical arts which consolidated traditions and styles, and resulted in the first manifestations of architecture for 'monumental purposes'.<sup>128</sup> Thus, architecture's stylistic expression derived directly from a sophistication of governance and a need for identity and difference.<sup>129</sup>

The Chinese architectural style, for example, arose from a centralist social organisation that totally subordinated the individual to the state. The homogeneity of society and architecture was evident in the emulation of the ancient emperor's palace in minor

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<sup>126</sup> Compare 'On Architectural Symbols', pp. 66–67 (MS 141).

<sup>127</sup> Gottfried Semper, Semper Archive, MS 144, fol. 1, repr. in Gottfried Semper and Harry Francis Mallgrave, 'Lecture of November 29, 1854 "On the Relation of Architectural Systems with the General Cultural Conditions"', *RES: Anthropology and Aesthetics*, 11 (1986), 43–53 (p. 43).

<sup>128</sup> Compare Semper, 'On the Relation of Architectural Systems', p. 43 (MS 144, fol. 3).

<sup>129</sup> In particular, the hierarchical and despotic Chinese and Assyrians societies revealed the 'meaning of the general forms as well as of the specialities of the architectural styles which resulted out of this'. Semper, 'On the Relation of Architectural Systems', p. 44 (MS 144, fol. 6).

dwelling.<sup>130</sup> Lacking the centrality of the hearth (altar) and having developed from the regular layout of the Tartar camp, Chinese architecture maintained a strict separation of its architectural elements: roof, wall, and substructure. Accordingly, the motive of *dressing* underwent little transformation and was easily recognisable in the painted ornament of movable screens and walls, which originated from bamboo lattices and draperies.<sup>131</sup> Assyrian architecture too expressed a socio-political form. Constituted as a strong military and feudal society, it developed the military camp into permanent and hierarchically laid out settlements, designed to fend off enemies. At the same time, the geographical-climatic conditions required an incredible collective effort to cultivate nature by constructing vast systems of canalisation and embankments. Correspondingly, architecture was formed as terraced megastructures, dominated by walls and substructures. With the royal palace serving as a model for less representative buildings, social status was ostentatiously expressed by their adornment, different methods of construction, and ornamentation. Ornament signified social rank, whereas in Chinese architecture the social hierarchy was indicated by scale, as their courtyard-type was given social meaning by the repetition of the same, with the column distances regulated by strict social rules that dictated the proportional size of buildings.

While Chinese architecture represented the original separate state of architectural elements, the Egyptian theocratic society and its architectural model of a courtyard-style temple revealed 'an organic development from inside' and made the Egyptians the 'first inventors of almost all the local arrangements which we know in architecture and which still to our time are current'.<sup>132</sup> In fact, to Semper 'the Egyptians were superior not to the other barbarians only, but even to the Greeks, who adopted only at later times a great part of the Egyptian interior arrangements', although only in secular buildings.<sup>133</sup> Emphasising the Egyptian roots of Greek architecture, Semper however agrees with his predecessors that only the Greeks achieved a true synthesis of architecture, by adopting the styles of Assyrians and Phoenicians and through the synthesis of the four elements of architecture in their temples.<sup>134</sup> While Quatremère distinguished between Egyptian architecture as an

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<sup>130</sup> The courtyard-style palace of the emperor Yao became the symbolic and practical motif of Chinese architecture and was imitated throughout all scales, from the imperial city of Peking to private dwellings; see Semper, 'On the Relation of Architectural Systems', pp. 44–47 (MS 144, fols. 7–19).

<sup>131</sup> For the *dressing* motive, compare with Semper's lecture on 'The Development of the Wall and Wall Construction in Antiquity' of 1853.

<sup>132</sup> Semper, 'On the Relation of Architectural Systems', p. 51 (MS 144, fol. 37). The manuscript indicates that Semper intended in the following lecture (6 December 1854) to discuss Egyptian architecture, but only fragments of this lecture exist.

<sup>133</sup> Semper, 'On the Relation of Architectural Systems', p. 51 (MS 144, fol. 37).

<sup>134</sup> It is especially the roof element that Egyptian architecture failed to integrate, even though the theme of covering produced rich planning variations with hypostyle halls and colonnades. The Assyrian developed the Egyptians structural columns and hypostyle halls by combining the roof and wall elements. But only the Phoenicians introduced the peristyle and utilised architectural orders as a means of planning and design. In the incomplete lecture, Semper indicates his intention to discuss the construction of the Assyrian's. His notes state: 'Explanation of their constructions. On columns and their uses. On their styles as wooden and half complementary or moveable'. In Semper, 'On the Relation of Architectural Systems', p. 51 (MS 144, fol. 34).

'art of building' and the Greek 'art of architecture', Semper differentiates between 'monumental unity' and 'monumental art'. Egyptian architecture had unity and was comparable to 'a large writing tablet, forming a kind of book', with a complete dependency of the 'parts to the ensemble' that lacked individuality.<sup>135</sup> This evokes Quatremère's analogy employed to illustrate the socio-cultural intent of Egyptian architecture, whose buildings 'with all their surfaces destined to receive inscriptions in symbolic characters, they must be regarded as enormous books always open for the education of the public'.<sup>136</sup>

Proposing a greater influence of Egyptian, Assyrian, and Phoenician traditions on Greek architecture, Semper claims in *The Four Elements* that Greek temples were a fusion of Hellenic and Assyrian cult and emerged 'out of this mud hut, with foreign elements added to it'.<sup>137</sup> But consistent with his ethnological interpretation, the Greek artistic achievement depended on a democratic society: 'Only a free people sustained by a national feeling could understand and create such works [...] this harmony could come about only through a free and circumscribed working together of elements of equal value, through a democracy of the arts.'<sup>138</sup> Considering culture a direct socio-political product in its ideology and material formation, the contemporary challenge for the contemporary artist was to find a social and artistic synthesis proper to capitalism. 'For everything will only remain an eerie phantasmagoria until our national life develops into a harmonious work of art, analogous but richer than Greek art in its short golden age. When this happens, every riddle will be solved.'<sup>139</sup>

The re-interpretation of the first principles of architecture in the London lectures indicates a likely content and structure of the elusive third volume of the *Style* on architecture.<sup>140</sup> They adumbrate a 'comparative method' that is half scientific, analysing history as inspired by Cuvier, and half symbolic, tracing the depth structures of culture by following in the footsteps of Klemm. This double reading was seeded in the *Comparative Theory of Building* and germinated in *The Four Elements of Architecture*, but only matured in the London lectures through an analysis of the arts in respect to culture and history. By searching for the origins of architecture in antiquity, it provided an insight into the formation of architecture's disciplinary knowledge and formulated a theory of invention through a doctrine of style based on the persistence of typical motives. The *Style*, as promised in its prospectus of 1859, was essentially an elaboration of the theoretical framework developed

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<sup>135</sup> Semper, 'On the Relation of Architectural Systems', p. 53 (MS 144, fol. 39).

<sup>136</sup> Quatremère, *De l'architecture égyptienne*, p. 59, as cited by Lavin in 'The Transformation of Type', in *Quatremère*, p. 93.

<sup>137</sup> Semper, *The Four Elements*, p. 123.

<sup>138</sup> Semper, *The Four Elements*, p. 123 and p. 78.

<sup>139</sup> Semper, *The Four Elements*, p. 78.

<sup>140</sup> The contents of the lectures 'On the Origin of Some Architectural Styles' and 'On the Relation of Architectural Systems with the General Cultural Conditions' seem to correlate to Semper's planned first chapter in the third volume of *Style* on 'Ancient Art', which was to include sections on the architecture of Assyria, China, and Egypt.

in the London lectures and maintained the principal arguments. After dealing with the internal factors of artistic formation, with 'all functional, material, and structural factors that relate to the problem of style in architecture', including their synthesis in architecture for monumental purposes, the *Style* was to examine the external factors.

To these, however, must be added as the most powerful factors of style in architecture the social structure of society and the conditions of the times, which to express artistically and in a monumental way has always been the most eminent task of architecture.

The comparative method applied to the study of the history of art is the only way to achieve a true knowledge and appreciation of these important moments of the monumental style. A vast field of inventiveness will be revealed to us once we try to make artistic use of *our* social needs as factors in the style of *our* architecture in the same way as has been done in the past; whereas it would hardly ever be possible only through new materials and their use in new methods of construction to bring about a decisive and lasting change in architecture, and even less so through the simple power of a genius who has dreamed up his so-called new style.<sup>141</sup>

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<sup>141</sup> Gottfried Semper, 'Prospectus: Style in the Technical and Tectonic Arts or Practical Aesthetic' (1859), trans. by Mallgrave and Herrmann in *Four Elements and Other Writings*, p. 179.

### 3 THE TRANSFORMATION OF ART-FORMS

When Semper in 1855 accepted the position as head of the architectural department at the new Eidgenössische Polytechnikum in Zurich, he returned to work on the neglected *Comparative Theory of Building*. Having consolidated his theory of style in London, a restructuring of the book was inevitable to incorporate the clarified aspects of his speculations: the correspondence between the typical motives of industrial arts and the four elements of architecture, the principle of *dress* (*Bekleidung*), and his theory of *material transformation* (*Stoffwechsel*).

I told you that I had in mind making essential changes to the plan of my book; I wanted to have the technical arts precede architecture because stylistic laws and symbols that were later employed in architecture were first developed in works of the technical arts and for that reason could most clearly and visibly be shown there in their elementary form; also because the established architectural [...] forms achieved significance and meaning only by being contrasted to the related forms of movable objects, etc., that had been developed in earlier times and were therefore familiar to man; and lastly because most recently the need and demand for an artistic development of the technical arts have more than ever become apparent, as the industrial exhibitions make particularly evident.<sup>1</sup>

The publisher Vieweg, agreed to a new fee and title for the book: *Kunstformenlehre* (Theory of Art-Form). In late 1856, Semper finally submitted the long awaited first manuscript with drawings. But fearing that Vieweg took financial advantage of him, Semper negotiated and signed a new contract with the publisher Friedrich Suchland of Bruckmann in Frankfurt. In the ensuing legal dispute over publishing rights, Semper tried in vain to have his manuscripts returned by Vieweg. Finally, legally prevented to use the intended title and structure, a newly written but similar book was published by Bruckmann in two volumes in 1860 and 1863 under the title of *Style in the Technical and Tectonic Arts; or, Practical Aesthetics: A Handbook for Technicians, Artists, and Patrons of Art*.<sup>2</sup> Semper added to the first chapter on textiles in the *Style* a lengthy treatise on his theory of *dress*, which forced him to discuss the remaining technical arts of ceramics, tectonics, stereotomy, and metallurgy, and their relation to internal factors of form in the second volume, originally planned to include architecture and the external factors of style, and meant that a third volume was needed.<sup>3</sup> While Semper wrote the second volume relatively quickly, the plans

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<sup>1</sup> Semper in a letter to Vieweg (MS 182a, probably a draft for a letter dated 19 June 1856), as quoted by Herrmann in *Semper: In Search of Architecture*, p. 91.

<sup>2</sup> Other titles considered were: *Cultural Historical and Art-Technical Studies on Architecture; Theory and History of Style in Architecture and the Other Technical and Fine Arts in the Relation to Architecture; Practical Aesthetics*; and *The Theory of Art-Forms, or Style and Its Practical Application in the Technical and Structural Arts*.

<sup>3</sup> By then Semper narrowed his definition of tectonics to mean carpentry in relation to architecture.

for a third volume were eventually abandoned in 1877.<sup>4</sup> Therefore, *Style* never fulfilled its great ambition and included only half of Semper's doctrine of style, the theory or rather history of style in the technical arts that outlines the origins of basic forms and symbols and their modification. The second part on the monumental art of architecture, which was promised to provide a method of invention, examine the historico-cultural relation of design to the works of the past, and conclude with a critical analysis of the state of contemporary architecture, was to remain unrealised. The incompleteness of *Style* contributed to the view that Semper was a functionalist and materialist, as a synthesis of the material and formal studies in the industrial arts with the 'practical aesthetics' in architecture was missing.<sup>5</sup>

Many historians have speculated, that if Semper had published the agreed book *Theory of Art-Form* with Vieweg, he would have followed the hierarchy of the technical arts as deriving from the four elements of architecture and outlined in *Science, Industry and Art* and the London lectures as an order of ceramics, textiles, joinery and carpentry, masonry and engineering, and a comparative theory of building.<sup>6</sup> The copyright dispute with Vieweg also seems to have resulted in a curious fact that despite its title, the *Style* never provided a thorough definition of style. Semper and historians provided numerous reasons why he could not write the third volume. Perhaps most convincing is that by elaborating his principle of *dressing* in the first volume on textiles, he pre-empted his most original and important architectural thesis.<sup>7</sup> Semper understood the relations of textiles and architecture in linguistic, ethnological, and material terms, which explains his argument that their ornamental and symbolic forms and motives are shared. The typical motives of *dressing* provide architecture with the means to overcome materialism and transform structural-technical problems into structural-symbolic potential. The Greek creative genius, posits Semper, had 'a higher goal than inventing new artistic types and motives and replace those handed down from ancient times', their aim was to apprehend them spiritually, 'given that they were already materially fixed, in their next, telluric expression and idea; to conceive

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<sup>4</sup> Despite repeated promises that the final volume was progressing, reassuring Bruckmann that it was only a 'revision' of the already drafted *Comparative Theory of Building*, there is only evidence for some notes written in 1869, which seem to correlate to the lecture 'On Architectural Styles' of the same year. For a history of the publication of *Style*, see Herrmann in *Semper: In Search of Architecture*, pp. 88–117; and Mallgrave, *Semper: Architect of the Nineteenth Century*, p. 267–77.

<sup>5</sup> Paul Zucker's assessment of Schinkel, Bötticher, and Semper as providing a proto-functional theory in Germany that leads to modernism, is typical for this reading; see 'The Paradox of Architectural Theories at the Beginning of the "Modern Movement"', *Journal of the Society of Architectural Historians*, 10.3 (1951), 8–14 (p. 8).

<sup>6</sup> Hoping until the middle of 1858 for the return of his manuscripts from Vieweg, which included a preface, introduction, and section on ceramics, Semper in the meantime seems to have continued work on the next chapter on textiles. However, eventually realising that Vieweg would not concede and Bruckmann pressuring him for material, Semper appears to have adapted the manuscript on textiles for the first volume and the unpublished *Theory of Formal Beauty* for the 'Prolegomena' of *Style*.

<sup>7</sup> Semper explained his reluctance to write the third volume with it being difficult for him to remain impartial to contemporary architecture and that he felt under pressure to match the originality of his first volumes. Historians argued that he was too old to master a growing scholarly body of knowledge dealing with architectural history, and that disagreement with some new building styles and construction methods made him increasingly appear a conservative and traditionalist.

them *in a higher sense as a symbolism of form*'.<sup>8</sup> This dematerialisation of form equated to a 'masking of reality'. At first a temporary dressing or concealment of structure motivated by religious and secular festivities, this became permanently and materially embodied in monuments. Semper describes monuments thus as a lasting 'festival apparatus' that memorialises through solidification the principles of textiles (and polychromy) in structural veiling and spatial enclosure. This discloses the real meaning of the monument as spatial production and essentially as pre-architectural, which profoundly questions the academic view of monuments as tectonic phenomena. Semper declares the monument as a truly cultural and collective invention, and artistic drive as motivated by a pleasure of 'theatrical' representation and suspense: a 'masking' but not falsification of reality. In order to intensify and alter the perception of reality, it demands reciprocity between artist and observer, a 'poetic fiction' as Quatremère termed the conventionalised yet evolving agreement underlying the formation of the arts.<sup>9</sup> Both Semper and Quatremère presume that culture occupies a plane of reality that directly intersects with material and its perception, and Semper further instrumentalises this potential of interchangeable cultural and material formation.

I think that the *dressing* and the *mask* are as old as human civilization and that the joy in both is identical to the joy in those things that led men to be sculptors, painters, architects, poets, musicians, dramatists—in short, artists. Every artistic creation, every artistic pleasure, presumes a certain carnival spirit, or to express it in a modern way, the haze of carnival candles is the true atmosphere of art. The destruction of reality, of the material, is necessary if form is to emerge as a meaningful symbol, as an autonomous human creation. [...] The truly great masters of art in every field returned to it, except that in times of high artistic achievement these individuals also *masked the material of the mask*.<sup>10</sup>

This double dissimulation of reality, of structure and material, is the essence of architecture and Semper's doctrine of style. The surface effect of architecture destroys or subordinates the material means of form, until only the typical idea of form as organic form remains, which is represented in the traces of 'superficial' art-form.<sup>11</sup> 'Anything that had no morphological purpose, anything that was foreign or opposed to the purely formal idea, had to be excluded or removed to a neutral ground.'<sup>12</sup> Architecture appears defined in ambiguous terms, on the one hand by absolute form and presence and on the other by total immateriality. Architecture is simultaneously a spatial phenomenon and metaphysical

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<sup>8</sup> Semper, *Style*, I, p. 243.

<sup>9</sup> My use of *theatrical* owes to Mallgrave, *Semper: Architect of the Nineteenth Century*; compare with chapters 'The Masking of Reality in the Arts' and 'Semper and the Birth of Tragedy'.

<sup>10</sup> Semper, *Style*, I, p. 250, n. 85.

<sup>11</sup> The theme of architectural masquerade through dissimulation is developed by Mark Wigley, 'Untitled: The Housing of Gender', in *Sexuality & Space*, ed. by Beatriz Colomina (New York: Princeton Architectural Press, 1992), pp. 367–69.

<sup>12</sup> Semper, *Style*, I, p. 379.

representation, yet Semper considers both as located entirely within the interiority of architecture and as indivisible. Typal motive and stylistic expression, and surface and structure, are to him different layers of the same. The Greeks resolved this quandary by reversing the 'barbarian' tradition of extravagant material *dressing* with a new immaterial symbolic *dressing*: 'As part of this trend the Hellenic architectural principle had to vindicate and nurture *colour* as the subtlest and most incorporeal dressing. This was the most perfect means to dispose of reality, for while it dressed the material it was itself immaterial.'<sup>13</sup> However, Semper does not mean literal or technical immateriality, but a representational tension that requires material substance for its mental closure and perceived disappearance.<sup>14</sup> This conclusion to polychromy underlies the principles of his main theories of *dressing* and *material transformation*, and results in the suspension of materiality and a radical symbolic destruction or double abstraction of reality. The dematerialisation and dissimulation of structure and reality, afforded by a (polychrome) surface effect unites Semper's architectural and Wagner's musical theories, as well as Friedrich Nietzsche's early speculations on Greek music-drama and tragedy, and his demand of stylistic unity.<sup>15</sup>

The complex relationships between representation, symbolism, and culture, between form and content that Semper alludes to with the theatrical mask and the unmasking of typal motives, is a profound problem that has been theorised in architecture since the codification of linear perspective as *perspectiva artificialis* in Alberti's treatise *On Painting* (*Della pittura*, 1435–36), the first theoretical work of the visual arts. '*Perspectiva*', writes Erwin Panofsky, 'is a Latin word which means "seeing through" and designates the transformation and reinterpretation of reality through an imaginary 'picture plane'.<sup>16</sup> Replacing a previous intuitive *perspectiva naturalis* based on observation, *perspectiva artificialis* is mathematically exact, but as Panofsky contentiously adds, is committed to a symbolic (Renaissance) worldview which assures that reality is representable as a finite mathematical pictorial space in which every point is defined and constructible.<sup>17</sup> The abstraction of perspective, the representation of physical and psycho-physiological space as purely mathematical and homogeneous is, despite seeming objective, a fundamental

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<sup>13</sup> Semper, *Style*, I, p. 379.

<sup>14</sup> Fritz Neumeyer, in his observations on the ambiguous aesthetics of the wall argues, like Semper, that materiality is an important prerequisite for the (aesthetic) potency of the wall and its conversation with structure through 'architectural appearance'; see 'Head First Through the Wall: An Approach to the Non-word "Façade"', *The Journal of Architecture*, 4.3 (2001), 245–59 (pp. 249 and 252–53).

<sup>15</sup> Semper's notions of 'organic form' and dramatic 'masking of reality' in his polychrome theory posited a non-structural perception of form, which exerted a great influence on Wagner and Nietzsche, as Fritz Neumeyer highlights by documenting the confluences of their theories in *Der Klang der Steine: Nietzsches Architekturen* (Berlin: Gebr. Mann Verlag, 2001), pp. 15–55 and 93–100. Semper's influence on Nietzsche is also an important theme in Mallgrave's *Semper: Architect of the Nineteenth Century*.

<sup>16</sup> Erwin Panofsky, borrowing from Albrecht Dürer, in *Perspektive als symbolische Form* (Leipzig, 1927). English translation: *Perspective as Symbolic Form*, trans. by Christopher Wood (Cambridge, MA: Zone Books, 1991), p. 27.

<sup>17</sup> This is based on the fundamental assumptions that vision is reducible to a single and immobile eye and that it can be reproduced by a planar cross section of a projected visual pyramid.

distortion of reality and our experience of it. Therefore perspective and our conceptualisation and representation of space and form, can only be understood symbolically as Panofsky explains by citing Ernst Cassirer:

Perception does not know the concept of infinity; from the very outset it is confined within certain spatial limits imposed by our faculty of perception. And in connection with perceptual space we can no more speak of homogeneity than of infinity. [...] Visual space and tactile space are both anisotropic and unhomogeneous in contrast to the metric space of Euclidian geometry.<sup>18</sup>

The symbolisation of the world through a humanist and idealistic perspective is anticipated in *skenographia*, an ancient Greek and Roman term denoting the perspectival regulation of the perception of space in painting, sculpture, and architecture.<sup>19</sup> In *skenographia*, the ambiguity between the perception of reality and illusion emerges through spatial and perceptual manipulation, but equally depends on symbolic representation that requires a common mythological language. Thus cultural and political symbolism and spatial perception merge, with symbolic representation becoming the product of a theatrical and aesthetic environment in which linguistic meanings are negotiated and coded. The conflation of symbolism and reality in scenery is exemplified by Baldassare Peruzzi's drawings of cityscapes, which his student Sebastiano Serlio adapted in 1545 in his theatrical 'tragic' setting that belonged to the genre of ideal cities. Based on Peruzzi and Vitruvius, Serlio's thesis is that the three conventional scenes (tragic, comic, and satirical) observe cultural and political codification and a symbolic language that is represented by ornamental elements. Therefore the ordering of space through the rational descriptions of perspective, suggest a double truthful representation, in both the sense of reality and the ideal. Serlio's drawings of the scenes are in this sense a double illusion and as much illusionistic as they are realistic: an instruction for a construction that is to re-represent the real city, and a simulation of the urban condition as a streets-scene, a *tour de force* of perspectival means. The abstract representation of the city reveals the hidden structures in their formal and social meaning, however, also the artificiality of the reality it is able to represent. What determines the scene, apart from optical simulation, are the requirements defined by genre. The scene does not represent a particular place but generalises a universal, if not ideal, space.<sup>20</sup>

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<sup>18</sup> Panofsky, *Perspective as Symbolic Form*, p. 30, citing from Ernst Cassirer, *Philosophy of Symbolic Forms*, trans. by Ralph Manheim (New Haven: Yale University Press, 1955), II (Mythical Thought), pp. 83–84.

<sup>19</sup> *Skenographia* essentially means scene painting, but in general covers the application of perspectival techniques, false panels, *trompe l'oeil* effects, etc.

<sup>20</sup> The generic nature of Serlio's design is emphasised by his claim that the comic scene must include an inn, a church, a brothel, and a private house or two, thus providing the typical motifs of comedy: private property, sex, religion, the reception of strangers, etc. The comic scene is hence often understood to symbolise the city as a whole and to provide an idea of cityness, including its spatial and socio-political conditions.

The recognition that reality is heightened and only knowable through the abstraction afforded by representation, explains an epistemological exploitation of perspective in painting and architecture. A connection that Semper explicates in material and symbolic terms through his theory of *dressing* and ornament, which relates human rituals and culture to architectural monuments, and social to spatial production. Accordingly, the masking of reality reveals the symbolism underlying material and comprehends its typical idea. In his practice, Semper accordingly pursued a defiant historicism that reinterpreted the Renaissance style, which he believed capable of rich architectural expression and masking, offering an alternative to the dominant *Rundbogen* or neo-Gothic styles in Germany.<sup>21</sup> The architect, he contends, ‘should not discard traditional types and invent new ones “but rather try and express new ideas with the old types. This, and slavishly using old schemata that for centuries have belonged to history, are two different things”’.<sup>22</sup> This means neither a revival nor denial of historical form, but a continuous re-invention and disintegration of traditions.<sup>23</sup> The doctrine of styles hereby serves as the mechanism to analyse and incorporate the variable factors informing artistic becoming and assured coherence. Semper believes that artistic types, ‘like nature’s types they have their own history. Nothing is arbitrary; everything is conditioned by circumstance and relations’.<sup>24</sup> This assumed a teleological outcome and historicity—yet not linearity of history—and a presentness of artistic invention as defined by type and style.

People reproach us architects for a lack of inventiveness—too harshly, since nowhere has a new idea of universal historical importance, pursued with force and consciousness, become evident. We are convinced that wherever such an idea would really take the lead, one or the other of our young colleagues will prove himself capable of endowing it with a suitable architectural dress. Until that time comes, however, we must reconcile ourselves to make do as best we can with the old.<sup>25</sup>

Semper in his typological and morphological studies ‘wanted to clarify on a theoretical level what was perhaps not soluble in practice’, as the classical tradition had not yet been successfully disintegrated in an age of historicism.<sup>26</sup> However his theory of art-forms

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<sup>21</sup> Semper’s many commissions included the Polytechnikum (1864), Neues Hoftheater (1878) in Dresden, and the major development of Vienna’s Ringstraße (Burgtheater, Kunsthistorisches Museum, and Naturhistorisches Museum completed after his death), for which he relocated to Vienna in 1871, but resigned from in 1876 after differences with the executive architect Karl von Hasenauer.

<sup>22</sup> Gottfried Semper, draft for the *Style* (MS 207, fols 34–35), as cited by Herrmann, *Semper: In Search of Architecture*; Gottfried Semper, pp. 160–61.

<sup>23</sup> With a new scholarly interest in Semper’s design work, studies have recently focussed on material, function and stylistic innovation. See for example, Mallgrave’s *Semper: Architect of the Nineteenth Century* examining his larger architectural projects and Mikesch Muecke smaller and less known designs, *Gottfried Semper in Zurich: An Intersection of Theory and Practice* (Ames: Culicidae Architectural Press, 2005).

<sup>24</sup> Semper, ‘Prolegomena’, in *Style*, I, p. 72.

<sup>25</sup> Semper, ‘On Architectural Styles’, p. 284.

<sup>26</sup> Haag Bletter, ‘On Martin Fröhlich’s Gottfried Semper’, p. 153.

exerted a great influence on the materialist and empathy theories coalescing at the turn of the twentieth century, providing a point of reference against which many measured themselves.<sup>27</sup> Perhaps Alois Riegl's (1858–1905) complex relationship with Semper is noteworthy, as his deliberate denigration of Semper as a materialist and functionalist greatly influenced the later reception of Semper and contributed to his fall from grace.<sup>28</sup> Semper's ambitious compromise between a material and psychological understanding of culture and its history was untenable, when their irreconcilable divide emerged with the Modern Movement's doctrine. His architectural theories, however, still resonated in early Modernist writing, for example Otto Wagner's *Modern Architecture* (1896), Adolf Loos's *Das Prinzip der Bekleidung* (1898), and Hendrik Petrus Berlage's *Gedanken über Stil in der Baukunst* (1905). However, the authors of the next generation of Modernist manifestoes who often knew Semper's theories only through Riegl's interpretation, denounced him.<sup>29</sup> This rejection was partially caused by the Modern Movement's anti-historical stance that disavowed the nineteenth-century historicism and denied any debt to its relativising of traditions, which legitimised their avant-garde notions. Forgotten was that Semper conceived the possibility that tradition and history could be suspended, and simultaneously incorporated and subjugated. Semper defined artistic form not as an inevitable typological continuity but a transformative and semi-autonomous stylistic reality that shapes the material of architecture through both structural and cultural means.<sup>30</sup>

A particular method of artistic representation is inherent in each material because each has the properties that distinguish it from other materials, and each demands its own treatment or technique. When an artistic motive undergoes any kind of material treatment, its original type will be modified; it will receive, so to speak, a specific colouring. The type is no longer in its primary stage of development but has undergone a more or less pronounced metamorphosis. If the motive undergoes a new change of material [*Stoffwechsel*] as a result of this secondary or even multiple transformation, the

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<sup>27</sup> For example, while Heinrich Wölfflin's doctoral dissertation 'Prolegomena zu einer Psychologie der Architektur' (1886) borrowed from Semper, August Schmarsow's inaugural lecture 'The Essence of Architectural Creation' at the University of Leipzig in 1893 was a critique of architecture's reduction to mere 'Semperian dressing' rather than a creation of space.

<sup>28</sup> Riegl first venerated and defended Semper against materialist and evolutionary misinterpretations in *Altorientalische Teppiche* (1891) and *Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik* (1893), only to completely reverse his position in *Spätromische Kunstindustrie* published in 1901.

<sup>29</sup> For example, Hermann Muthesius's *Stilarchitektur und Baukunst* (1902) and Peter Behrens' *Art and Technology* (1910). Compare with Mallgrave, *Semper: Architect of the Nineteenth Century*, pp. 356–81. Duncan Berry provides an extensive overview of Semper's influence on his students and next generation in 'The Legacy of Gottfried Semper: Studies in *Späthistorismus*' (unpublished PhD thesis, Brown University, 1989). The specific relation between 'space' and 'cladding' in Semper's theories and those of August Schmarsow, Camillo Sitte, Otto Wagner, and Adolf Loos is examined by Tonkao Panin, 'Space Art: The Dialectic Between the Concepts of Raum and Bekleidung' (unpublished PhD dissertation, 2003).

<sup>30</sup> Martin Fröhlich tried unconvincingly to demonstrate that Semper in practice pursued a stricter typological and serial design; see *Gottfried Semper, Zeichnerischer Nachlass an der ETH Zürich: Kritischer Katalog* (Basel: Birkhäuser Verlag, 1974).

resulting new form will be a composite, one that expresses the primeval type and all the stages preceding the latest form. If development has proceeded correctly, the order of the intermediate links that join the primitively expressed artistic idea with the various derivations will be discernible.<sup>31</sup>

Form and idea are conflated by the continuous cultural interaction and modification of typical motives during stylistic differentiations, which hark back to preceding traditions but require their masking and unmasking. While the work of art is a product of culture and the individual, it is also formed by the synthesis of its internal factors of form, material, and technology, and its external factors, such as geographical-climatic and socio-political context. Semper reformulates the potential of type through the limitations and specificities of style. He succeeds in defining an operative compromise between Quatremère's idealism and Durand's utilitarianism, with type evidenced by style as both an idea and model of form that can be analysed and projected, thus promising a unity of theory and practice.

Semper's notion of *organic form* that underlies his thesis that the development of a work of art and its *material transformation* is explicable by external factors, but foremost through a persistent internal consistency and significance was advanced by Henri Focillon (1881–1943). Influenced by Riegl, Henri Bergson, and Heinrich Wölfflin, Focillon in *The Life of Forms in Art* (1934) argues that a work of art is not only determined by historical, contextual, and technical conditions, but that form refers to itself and its process of becoming.<sup>32</sup> In Focillon terms, the artwork exists in an independent and universal realm of forms, which is abstract and imaginary, therefore, essentially non-imitative and free of models until it becomes affected by the specific means of each art. This condition of a work of art as form is irreducible to a 'diagram', as it does not 'design art' but 'creates it'.<sup>33</sup> This typical condition of form pre-existing stylistic and diagrammatic differentiation is equally conceptual and physical: 'But whereas an image implies the representation of an object, and a sign signifies an object, form signifies only *itself*. And whenever a sign acquires a prominent formal value, the latter has so powerful a reaction on the value of the sign as such that it is either drained of meaning or is turned from its regular course and directed toward a totally new life.'<sup>34</sup>

Once form is recognised as obtaining its significance from within itself or in relation to other forms, and by considering that form always 'assumes substance in a given material', it becomes receptive to different interpretations and able to carry external meanings.<sup>35</sup> Like

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<sup>31</sup> Semper, *Style*, I, p. 250.

<sup>32</sup> 'A work of art is the measure of space. It is form, and as form it must first make itself known to us. [...] Life is form, and form is the modality of life.' Henri Focillon, *La vie de formes* (Paris: Leroux, 1934). English translation: *The Life of Forms in Art*, trans. by Charles Beecher Hogan and George Kubler (New York: Zone Books, 1989), pp. 32–33.

<sup>33</sup> Compare Focillon, *Life of Forms*, p. 33.

<sup>34</sup> Focillon, *Life of Forms*, pp. 34–35.

<sup>35</sup> Focillon, *Life of Forms*, p. 62.

Semper, who claims that a development in the arts is impossible without the renewal of traditions while retaining the original ideas of form, Focillon believes that when 'old meanings are broken down and obliterated, new meanings attach themselves to form. The great network of ornament [...] changes its name without ever changing its shape. The very moment form appears, moreover, it can be constructed in many different ways.'<sup>36</sup> Form is resilient to the 'variation of forms on the same meaning, or the variation of meanings on the same form' and its individuation does not diminish in any way its original significance as form.<sup>37</sup> Focillon provides the artistic motif of 'interlace' as an example for this variation. The interlace has its roots in the snake coil and medical signs, but emerges in different cultures as ornaments with diverse meanings: 'the sign itself becomes form and, in the world of forms, it gives rise to a whole series of shapes that subsequently bear no relation whatsoever to their origin', and it becomes an artistic abstraction of reality, as it 'creates a picture of the world that has nothing in common with the world, and an art of thinking that has nothing in common with thought'.<sup>38</sup> Thus, concurring with Semper, the artistic motive is comparable to a verbal sign permitting different interpretations and communications.<sup>39</sup> The inevitable metamorphoses of plastic forms, the 'mobility of form' as Focillon terms it, accommodates continuous change and renewal without changing the substance of art, and is 'first tested, then made fast and finally disrupted' by style.<sup>40</sup> And style, Focillon explains further, has a contradicting yet related meaning:

Style is an absolute. A style is a variable. The word 'style' in its generic sense indicates a special and superior quality in a work of art: the quality the peculiar eternal value, that allows it to escape the bondage of time. Conceived as an absolute, style is not only a model, but also something whose validity is changeless. [...] In utilizing style as an absolute, we give expression to a very fundamental need: that of beholding ourselves in our widest possible intelligibility, in our most stable, our most universal aspect, beyond the fluctuations of history, beyond local and specific limitations. A style, on the other hand, is a development, a coherent grouping of forms united by a reciprocal fitness, whose essential harmony is nevertheless in many ways testing itself, building itself and annihilating itself.<sup>41</sup>

Generalising, style is the analysis and comparison of forms. While Focillon distinguishes between two kinds of style, Quatremère and Semper differentiate between type as the

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<sup>36</sup> Focillon, *Life of Forms*, p. 36.

<sup>37</sup> Focillon, *Life of Forms*, p. 36.

<sup>38</sup> Focillon, *Life of Forms*, p. 38.

<sup>39</sup> Focillon's concept of language as having possibility to become form but maintaining real and metaphorical independence, are derived from his reading of Arsène Darmesteter's *Life of Words* (1878). According to Darmesteter, language acquires aesthetic value once it becomes formal and concerned with its individual significance and creating its own meaning and contents. Compare *Life of Forms*, p. 40.

<sup>40</sup> Focillon, *Life of Forms*, pp. 41 and 44.

<sup>41</sup> Focillon, *Life of Forms*, pp. 45–46.

universal and style as the specific condition of form. However they all agree with a necessary performative difference that is represented in their distinctions, with Focillon defining style as constituted, on the one hand, by the index value of formal elements and, on the other, by a syntactic system of relationships.<sup>42</sup> This explains how style and form is both dialectic, internal to itself, and an experimental process.<sup>43</sup> Even though style is applicable to ‘everything’ that is ‘qualified by materials and technique: it does not behave uniformly or synchronously in all realms’, as the life of each historical style is at some level ahistorical, characterised by technique and the content of form itself.<sup>44</sup> Styles, despite an implicit diversity, ‘present the same formal characteristics at every epoch and in every environment’ and have a typical constant and universal value.<sup>45</sup> Therefore, the classical state is not exclusive, but internal to the life of a style and its reoccurrence in history.<sup>46</sup>

Corresponding to Semper’s insistence that the organic art of the Greeks presupposes a free society, Focillon argues that the life of forms and life are inseparable. Definite style are expressions of a ‘homogeneous, coherent, formal environment’, which ‘give birth to their own various types of social structure: styles of life, vocabularies, states of awareness’, and therefore the ‘life of forms gives definition to what may be termed “psychological landscapes”, without which the essential genius of the environments would be opaque and elusive’.<sup>47</sup> Forms exist in a concrete yet diverse reality of material—with matter closely linked to technique—and relate to a similar diversity of man, which is unified by intellectual communications, as style, technique, and man’s nature, are the ‘values that clarifies a work of art not only as something that is unique, but also as something that is a living word in a universal language’.<sup>48</sup>

In the ‘Forms in the Realm of Space’, Focillon explains that an artwork is ‘situated’ in, but also defines and creates, space. This is especially evident in the forms of architecture that, as being three-dimensional solids with differentiated internal volume and external mass, are defined by unchangeable spatial data. Despite architecture’s reproducibility through its known ‘typical’ solutions, this ‘despoils architecture of its fundamental privilege: namely, the mastery of a complete space, not only as a mass, but as a mold imposing a new value on the three dimensions’.<sup>49</sup> Therefore, architecture cannot be entirely communicated by drawings and is phenomenal: a fundamental living form.

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<sup>42</sup> Compare Focillon, *Life of Forms*, p. 46.

<sup>43</sup> Compare Focillon, *Life of Forms*, p. 50.

<sup>44</sup> Focillon, *Life of Forms*, p. 51. With reference to Louis Bréhier, Focillon calls this the ‘law of technical primacy’, with an overriding technique establishing a dominant art for each historical style.

<sup>45</sup> Focillon, *Life of Forms*, p. 52.

<sup>46</sup> Compare Focillon, *Life of Forms*, p. 55.

<sup>47</sup> Focillon, *Life of Forms*, pp. 60–61.

<sup>48</sup> Focillon, *Life of Forms*, p. 63.

<sup>49</sup> Focillon, *Life of Forms*, pp. 70–71.

The unique privilege of architecture among all the arts, be it concerned with dwelling, churches or ships, is not that of surrounding and, as it were, guaranteeing a convenient void, but of constructing an interior world that measures space and light according to the laws of a geometrical, mechanical and optical theory that is necessarily implicit in the natural order, but to which nature itself contributes nothing.<sup>50</sup>

Architecture creates its own artificial modes of space that pertain to a particular environment. Yet the environment of architecture engenders unpredictable ‘conditions for historical, social and moral life’ and in this process ‘invents a world all its own’, which limits the effects of context and makes its development non-deterministic.<sup>51</sup> The life of forms and the state of social life can be said to be partially independent, with form but an ‘action itself’ that constitutes the idea of the artist free of time and place.<sup>52</sup> Form is, as Quatremère and Semper observe too, autonomous from history and context—and formal or stylistic specificity—but only in its typical sense. Therefore, the life of art-forms is vitally driven by the artist-individual and the metamorphosis or *material transformation* of form, which continuously ruptures from its constituent history. The simultaneous material, social, and cultural reading of forms through type and style is common to Quatremère, Semper, and Focillon’s theories that deconstruct and synthesise the internal and external factors of a work of art. They believe that a theory of art-form discloses the universality of form, without which its adaptation and authorial transformation is impossible. Anticipating Jacques Derrida’s argument that the artwork is not deducible from its ‘structure of expectation’ but emerges from a process of creation and invention existing outside the constraints of history, they propose an abstract and applied system of architecture capable of creating syntactic solutions.<sup>53</sup>

All these families, environments and events that are called forth by the life of forms act in their turn on the life of forms itself, as well as on the strictly historical life. There they collaborate with moments of civilization, with both natural and social environments, and with human races. This immense multiplicity of factors is in complete opposition to the harshness of determinism,

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<sup>50</sup> Focillon, *Life of Forms*, pp. 74–75.

<sup>51</sup> Focillon, *Life of Forms*, p. 149. However Focillon concedes that architecture is inevitably defined by its wider context and environment; see pp. 147–48.

<sup>52</sup> Compare Focillon, *Life of Forms*, pp. 152–54.

<sup>53</sup> Derrida defines the ‘structure of expectation’ as the ‘historical, ideological, and technical conditions that make possible’ a work of art, but warns of the deficiency of any historical analysis that limits itself to the interpretation of these conditions. ‘If there is a work, it is because, even when all the conditions that could become the object of analysis have been met, something still happens [...] If there is a work, it means that the analysis of all the conditions only served to, how shall I say, make room, in an absolutely undetermined place, for something that is at once useless, supplementary, and finally irreducible to those conditions.’ Derrida in, Peter Brunette and David Wills, ‘The Spatial Arts: An Interview with Jacques Derrida’, in *Deconstruction and the Visual Arts: Art Media, Architecture*, ed. by Peter Brunette and David Wills (New York: Cambridge University Press, 1994), p. 28.

into which, by breaking it down into endless action and reaction, it introduces cleavages and discords at every turn.

For, within this great imaginary world of forms, stand on the one hand the artist and on the other hand form itself. Even as the artist fulfils his function of geometrician and mechanic, of physicist and chemist, of psychologist and historian, so does form, guided by the play and interplay of metamorphoses, go forever forward, by its own necessity, towards its own liberty.<sup>54</sup>

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<sup>54</sup> Focillon, *Life of Forms*, p. 156.



## PART III: TYPE AND THE CITY

If (as the philosopher maintain) the city is like some large house, and the house is in turn like some small city, cannot the various parts of the house—atria, *xysti*, dining rooms, porticoes, and so on—be considered miniature buildings?

Leon Battista Alberti, *On the Art of Building in Ten Books* (1485)

*Our description of the city will be concerned primarily with its form. This form depends on real facts, which in turn refer to real experiences: Athens, Rome, Paris. The architecture of the city summarizes the city's form, and from this form we can consider the city's problems.*

*... Thus typology presents itself as the study of types of elements that cannot be further reduced, elements of a city as well as of an architecture.*

Aldo Rossi, *The Architecture of the City* (1966)

# 1 RECOURSE TO TYPOLOGY

*Just as walls, columns, and so on, are the element of which buildings are composed, buildings are the elements of which cities are composed.*

*As the general dispositions of cities may vary in a thousand ways [...] and as the principles to be followed in their composition are the same as in the composition of each building; we shall say nothing of the cities as wholes.<sup>1</sup>*

Semper's unity of symbolic representation and material production based on type and style inadvertently re-emerged bastardised with the Modern Movement's representational functionalism and was articulated by Hermann Muthesius as *typing* (*Typisierung*) and by Walter Gropius as a *standard*. Reducing form to a material and technical function, both notions largely derived from aspects of economy. The merging of planning with standardisation—of life-styles, building types, and production processes—created a distinct conceptual co-dependency between type-forms and prototypes, but also a disciplinary separation of architecture from urban planning. Standardisation further resulted in a proliferation of functional diagrams and land-use planning systems. Inspired by the doctrine disseminated by the Deutscher Werkbund, instigated by Muthesius in 1907, Gropius developed his dogma of 'standardisation' and 'rationalisation' during his directorship of the Bauhaus (1919–28).<sup>2</sup> Gropius believed that the *typical* in architecture could be captured by standards and then applied to the cellular organisation of the city.<sup>3</sup> His adoption of type-forms in *The New Architecture and the Bauhaus* (1955), however, effectively introduced a material and technological aestheticism fulfilled by the logic of mass-production. Deriding this impoverished aesthetic, Klaus Herdeg blamed Gropius's teaching at Harvard for a legacy of buildings conceived as literal functional diagrams and characterised by non-design—only superficially decorated to engage the eye.<sup>4</sup>

Several Modernist architects, especially Le Corbusier in *The City of Tomorrow and its Planning* (1925) and Ludwig Hilberseimer in *Groszstadt Architektur* (1927), manifest Gropius's principles of standardisation. Le Corbusier in his body of work develops a logical relationship and hierarchy between architectural prototypes and urban plans that became emblematic for the Modern Movement's idea of the city. His 'scientific' approach exemplified in *Towards a New Architecture* (1923), has apparent similarities with Durand's

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<sup>1</sup> Durand, *Précis*, p. 143.

<sup>2</sup> The 'typological' thinking of the Bauhaus and Gropius is discussed by Diane Painter in 'Typology and Urban Design' (unpublished PhD thesis, University of Sheffield, 1989).

<sup>3</sup> He first postulated this in the 'Programme for the Establishment of a Company for the Provision of Housing on Aesthetically Consistent Principles' (1910) and reiterated his position in *The New Architecture and the Bauhaus* (1955). The programme is reprinted in *Architecture and Design 1890–1939*, ed. by Tim and Charlotte Benton (New York: Whitney Library of Design, 1975), pp. 189–90.

<sup>4</sup> Compare Klaus Herdeg, *The Decorated Diagram: Harvard Architecture and the Failure of the Bauhaus Legacy* (Cambridge, MA: MIT Press, 1983).

*Précis*, the precursor to functionalist tenets and economic considerations. In agreement with Durand, Le Corbusier predominantly understands construction in metaphorical terms, but while Durand retained an ambiguous relationship to aesthetic intentions, Le Corbusier sees aesthetics as more important than utility, even reintroducing a conventional proportional system in his *Modulor* (1948).<sup>5</sup> Le Corbusier's critical distinction to Durand's taxonomical reduction is his exploitation of type as synergies of multiple typological effects that regulate buildings as a 'system of functions'—no longer a system of architecture—with function defined as dynamic and its relation to structure and spatial organisation as no longer a given.<sup>6</sup> Despite contradicting Modernism's dogma of *form-follows-function*, this separation of function from structure makes a *plan libre* possible, which cannot derive from genre but requires typological synergies. Typological reasoning also resolves the quandary between rational and aesthetic aims by translating precedent forms into a new formal and aesthetic language, as epitomised by the Maison Citrohan, Immeubles Villas, and Cartesian Skyscrapers, which originate from the structural diagram of the Dom-Ino.<sup>7</sup> These prototypes permit a generic visualisation of the city and an instant proliferation of architecture according to Gropius's doctrine of standardisation, with its efficacy demonstrated in projects such as a *Ville Contemporaine* (1922), *Plan Voisin* (1925), *La Ville Radieuse* (1935), and realised in the capital city Chandigarh (from 1951).

Gropius's cellular analogy of the city also exerted a great influence on Japanese Metabolism and the coterie of architects led by Kenzo Tange by providing an argument for total architecture. Fumihiko Maki in 'Some Thoughts on Collective Form' (1965) terms the collapse of the urban into architecture 'megastructure', a large collective architectural form that houses all the functions of the city and engages with urban conditions through architectural strategies.<sup>8</sup> The acknowledgement of the overlap of architecture with the city coincided with parallel studies by Team 10 and their analogous concept of 'mat-building' based on the Arab Kasbah, which interprets typology as an organisational system of flexible functions and forms that are endlessly extendable. The Modernist typological studies advance the abstract-functional potential of taxonomic diagrams, first fully explored by Durand's morphologies and, although commonly functional-formal in conception, were later appropriated by Neorationalism in the 1960s.

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<sup>5</sup> 'Architecture has another meaning and other ends to pursue than showing construction and responding to needs (and by "need" I mean utility, comfort and practical arrangement). ARCHITECTURE is the art above all other which achieves a state of platonic grandeur, mathematical orders, speculation, the perception of the harmony which lies in emotional relationships.' Le Corbusier, *Vers une Architecture* (Paris: Cres, 1923). English translation: *Towards a New Architecture*, trans. by Frederick Etchells (Oxford: Architectural Press, 1946; repr. 1974), pp. 102–03.

<sup>6</sup> Compare Bruno Reichlin, 'Type and Tradition of the Modern', *Casabella*, 509/510 (1985).

<sup>7</sup> The projects deriving from the *plan libre*, such as Villa Garches (1927), reveal the depth they owe to classical precedents, in this case the Villa Malcontenta by Palladio, as Colin Rowe posits in *The Mathematics of the Ideal Villa and Other Essays* (1976).

<sup>8</sup> Maki's proposition inspired a number of reviews of the Modern Movement's mega-projects, including Reyner Banham's *Megastructure: Urban Futures of the Recent Past* (1976), Kenneth Frampton's *Megaform as Urban Landscape* (1999), and Hashim Sarkis's *Le Corbusier's Venice Hospital* (2002).

The reciprocity between type and the city, however, is perhaps propounded in its most extreme by Karel Teige's *The Minimum Dwelling* (1932), which contains a strong critique of fellow Modernists and their technical planning doctrine. Influenced by Ernst May, Alexander Klein (*Das Einfamilienhaus*, 1934), and the Congrès International d'Architecture Moderne (CIAM) II of 1929, he argues that the city could be conceptualised and reconstructed from its smallest fundamental type: the dwelling. His analysis of dwelling is motivated by the conviction that its solution, linked by him to a social and political question, could transform the concept and structure of the contemporary city and realise a new society.

Modernism, despite its polemic against history, was fully aware of traditions and 'chose to keep open the ambiguity between type and model because of the workability of the latter and the formal authority of the former'.<sup>9</sup> The contradictory recourse by Modernism to type and precedents was evident in Louis Kahn's candid admission that type has a deeper significance to establish meaning, as he revealed in 'Form and Design' (1961). His ideal 'form-realisation' relies on typological processes and, like Le Corbusier, has Platonic and metaphysical undertones that are unexplainable in functionalist terms. Similarly, Alvar Aalto in his design clearly develops a typological thinking in his use of iconography.<sup>10</sup> Nevertheless, the Modern Movement ideologically opposed theories of type and a necessary engagement with history.

The theoreticians of the Modern Movement rejected the idea of type as it had been understood in the nineteenth century, for to them it meant immobility, a set of restrictions imposed on the creator who must, they posited, be able to act with complete freedom on the object. Thus, when Gropius dispensed with history, claiming that it was possible to undertake both the process of design and positive construction without reference to prior examples, he was standing against architecture structured on typology.<sup>11</sup>

Yet, recourse to a typological discourse and the historical process, in response to the Modernist typology as a classification of functions, seemed inevitable with the growing critique of the Modern Movement's prototypes and urban plans. Functional zoning was blamed for an estrangement of architecture from the city, with the completion of urban plans increasingly left to independent designs in later development phases, which contributed to a suburbanisation of cities, destruction of traditional public spaces, social divide, and low densities. The Modern Movement's interest in the city largely derived from a pre-urban concept of regularisation, which according to Françoise Choay is a process that conceives the city as an object and applies an analytical method to the study of this object

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<sup>9</sup> Micha Bandini, 'Typological Theories in Architectural Design', in *Companion to Architectural Thought*, ed. by Ben Farmer and Hentie Louw (London: Routledge, 1993), pp. 387–95 (p. 389).

<sup>10</sup> Compare Demetri Porphyrios, 'The Retrieval of Memory: Alvar Aalto's Typological Conception of Design', *Oppositions*, 22 (1980), 55–73.

<sup>11</sup> Moneo, 'On Typology', p. 32.

and its elaboration as a project, while primarily concerned with the city as a functional 'body', with its cellular structure, circulation, and hygiene.<sup>12</sup> Though urbanism was anticipated by pre-urbanist social theories, it was profoundly driven by social progress. The notion of 'urbanisation' therefore only emerged in the second half of the nineteenth century with Ildefons Cerdà, who coined the term in his *Teoría General de la Urbanización* of 1867. Cerdà regards urbanisation as an anti-aesthetic, differentiated tool to systematically deal with the operative principles of a juridical and economic type. He abandons the amphibological notion of the 'city' in favour of his neologism *urbanisation*, as it signifies a new understanding of the urban and clarifies the ambivalence between the physical and political structure of a state or settlement, which was burdened by the historical meaning of *civitas* and *polis*.<sup>13</sup> While Camillo Sitte in his influential *Der Städtebau nach seinen künstlerischen Grundsätzen* (1889) upholds an interest in the civic meaning of the city, Cerdà is predominantly interested in the city as a technical and material entity of buildings.<sup>14</sup> Therefore he consciously appropriates the Latin word *urbs*, indicating a belonging to the city, in *urbanisation* to mean 'simply and generically a grouping of buildings with no specific relationship to its size, which is of almost total indifference of the application of the fundamental principles of urbanization, nor to its hierarchy, since urbanizing science can recognise none'.<sup>15</sup> With urbanisation emphasising physical processes, Cerdà's theory offers a rational basis for a new normative discipline of scientific urbanism, thought of as a process of modernisation and, as Choay argues, merges Darwin's evolutionary theory with Thomas More's utopian typology of urban public space and Alberti's rules of combinational generation.<sup>16</sup>

Cerdà's scientific urbanism was perpetuated by the Modern Movement, which by the 1960s was progressively criticised for disregarding the human dimension and rights of citizens—deliberately shunned by Cerdà—and endorsing large-scale interventions by city planners.

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<sup>12</sup> Compare Françoise Choay, *The Modern City: Planning in the 19th Century* (New York: Braziller, 1969), p. 27.

<sup>13</sup> In its Latin roots, the term *civitas* (city or state) derives from *civis*, denoting the collective of citizens and the community, comparable to an earlier Greek ideal notion of *polis* that defines the city as a public and political space formed by a homogeneous body of citizens in a city-state, and as incorporating the notions of *polity* and *politics*, thus conflating the concept of the physical city with its political organisation and governance. However, *civitas*, meaning originally only the political rights and duties of Roman citizenship, started to connote a general political organisation, and increasingly the physical structure and region occupied by a community. Compare Ildefons Cerdà, *The Five Bases of the General Theory of Urbanization*, ed. by Arturo Soria y Puig and trans. by Bernard Miller (Milan: Electa, 1999), p. 81

<sup>14</sup> Sitte criticised scientific urbanism for focussing on mobility and hygiene, proposing an aesthetic approach that returned to the qualities of ancient Greek public spaces; compare Camillo Sitte, *Der Städtebau nach seinen künstlerischen Grundsätzen* (Wien, 1889). English translation: Collins, George, and Christiane Crasemann Collins, *Camillo Sitte: The Birth of Modern City Planning: With a Translation of the 1889 Austrian Edition of his City Planning according to Artistic Principles* (New York: Rizzoli International Publications, 1986, repr. Mineola: Dover Publications, 2006), pp. 141–42.

<sup>15</sup> Cerdà, *The Five Bases*, p. 84.

<sup>16</sup> Alberti's *On the Art of Building*, according to Françoise Choay, is a key instaurational text of architecture, providing a counterpart to Thomas More's *Utopia* (1416), while belonging to a genre existing prior to later theories of urbanism. See *La Règle et le Modèle: Sur la théorie de l'architecture et de l'urbanisme*, (Paris, Seuil, 1980) English translation: *The Rule and the Model: On the Theory of Architecture and Urbanism* (Cambridge, MA: The MIT Press, 1997).

In particular its impact on American cities was blamed for their decline, with the emerging 'urban design' movement in the 1960s and 70s demanding an urban sociology that should replace or at least complement the domination of the field by technical requirements.<sup>17</sup> The movement's early key proponents, who include Kevin Lynch, Jane Jacobs, Gordon Cullen, and Christopher Alexander, tried to propagate architectural solutions as alternatives to top-down planning, which they hoped would influence urban renewal and changes in planning policy, aiming to reclaim the city for its citizens by returning to the design of distinct places.<sup>18</sup> Central to their ambitions was the restoration of the social and symbolic function of public spaces, which in most cases implied a preservation of, or return to, traditional space typologies. Despite Eric Mumford's recent attempt in *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937–69* (2009) to 'correct' architectural historiography, claiming that urban design was in fact established by the leaders of Modernism, with politicians and developers responsible for the destruction of historical cities, the American discontent with the Modern Movement's planning doctrine was shared in Europe.<sup>19</sup>

Aldo Rossi in *The Architecture of the City (L'architettura della città, 1966)* attacks Modernist town planning and attempts to articulate an alternative idea of modernity that can reinstate architecture as irreducible to the concept of the city. Rossi returns to a concern with history and eighteenth-century architectural theory, re-discussing the conventions and *genius loci* of architecture recently rejected. He reconsiders the question of type at both a theoretical and operative level, wanting to restore the synthesis between analysis and design and re-establish architecture as a culturally specific but autonomous discipline. However, when Neorationalism—forming at the Istituto Universitario di Architettura di Venezia (IUAV) led by Rossi, Carlo Aymonino, and Giorgio Grassi—revisits Quatremère's theory of type, it is no longer in relation to style, as in Semper's enquiries, but in regards to the historical and preindustrial European city. Style had become untenable after the incessant quest for novelty by the avant-garde Modern Movement, making a reflection on traditional forms and

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<sup>17</sup> While considerations of *urban design* existed long before the mid-twentieth century, the term was formally established by Harvard University. First in a conference organised by José Luis Sert in 1856 and then in an Urban Design Programme launched in 1960. 'The term urban design is used at Harvard in quite a limited and specific sense to mean an area of interaction between the three professions of architecture, landscape architecture and city planning [...] In the Harvard program, urban design operates on two scales: the conceptual system and the visual scene.' Jaqueline Tyrwhitt, 'The Architect and the City', *Journal of Architectural Education*, 17.3 (1962), pp. 100–01.

<sup>18</sup> See for example, Kevin Lynch (*The Image of the City, 1960*), Jane Jacobs (*The Death and Life of Great American Cities, 1961*), Gordon Cullen (*The Concise Townscape, 1961*), and Christopher Alexander's studies into a generative 'pattern language' (*Notes on the Synthesis of Form, 1964; A Pattern Language, 1977; and The Timeless Way of Building, 1979*).

<sup>19</sup> Mumford argues that key members of CIAM, including Walter Gropius, Siegfried Gideon, Josep Lluís Sert, Louis Kahn, George Holmes Perkins, William Wurster, and others, were involved in the formulation of urban design issues. He claims that in fact this Harvard-centred Urban Design group formed the new discipline during the crucial period after World War II from the 1940s to the 1960s. He further contends that the CIAM was greatly concerned with the quality of life in cities and neighbourhoods, and instrumental in forming the discourse of urban design. See *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937–69* (New Haven: Yale University Press, 2009).

types necessary. As Rossi writes, ‘the typological moment, the moment of typological choice, was and is—and for me still is—stronger than the formal stylistic choice [...] style recedes in the face of these fundamental questions of architecture’.<sup>20</sup>

## 1.1 THE EARLY ITALIAN DEBATE

The typological debate in the 1960s was provoked by a questioning of the Modernist functionalist doctrine and a return to a historical understanding of the city by Ernesto Nathan Rogers, Saverio Muratori, and Giulio Carlo Argan in Italy. Although arguably only shifting the balance between functionalism and typology, with an intrinsic relationship existing at least since the eighteenth century, their contentions created a new dialogue concerned with the nature of the historical object and architectural project.<sup>21</sup> Anthony Vidler coined the discourse of an emerging Neorationalism the ‘third typology’ and defined three distinct historical phases in the use of typologies.<sup>22</sup> In his editorial ‘The Third Typology’ (1976), he associates the first with the Enlightenment, when the rational order of nature formed the basis of design, as defined by Laugier’s paradigm of the primitive hut. The second emerged with the Modern Movement’s alignment of design with the processes of mass-production in a ‘quasi-Darwinian’ selection. The third typology was advanced by Rationalism and no longer required a validating external ‘nature’, but pursued the continuity of architectural form and history found in the traditional city. This ‘ontology of the city’ understood the city itself as typology, operating through three levels of meaning derived from an experience of form, choice of specific fragments, and re-composition of these fragments in a new context. The rationalist typology was, according to Vidler, free from social or positivist concerns and achieved its aim of transforming selected types not through a rigorous process but a strategy of metaphoric opposition.

Instrumental to Rationalism’s efforts to clarify the relations of history, culture, and the city in theory and practice was Ernesto Nathan Rogers (1909–1969), a co-founder of the Milanese BBPR Architectural Studio, professor of architecture at the Milan Polytechnic, editor of several architectural magazines, and senior member of the CIAM. Programmatic to his revision of the Modern Movement, whose essential tenets he upholds, is the renaming of the magazine *Casabella* to *Casabella continuità* (as its editor from 1953 to 1964), highlighting the importance of historical continuity. The significance of continuity arises from his conviction that if ‘we wish to represent the totality of the culture which we

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<sup>20</sup> Rossi in *Progetto Realizzato* (Venice: Marsilio, 1980), p. 158, trans. by Bandini in ‘Typology as a Form of Convention’, p. 78.

<sup>21</sup> Vittorio Magnago Lumpugnani argues that the architectural theories of the last three centuries are defined by the changing concepts of typology and functionalism and their relationship to each other; see ‘Das Ganze und die Teile: Typologie und Funktionalismus in der Architektur des 19. und 20. Jahrhunderts’, in *Modelle für eine Stadt* ed. by Lumpugnani, Internationale Bauausstellung Berlin: Die Neubaugebiete, 1 (Berlin: Siedler, 1984), pp. 83–117.

<sup>22</sup> Vidler, ‘The Third Typology’, 1–4. Vidler’s editorial was reprinted in *Rational Architecture: The Reconstruction of the European City / Architecture rationnelle: La reconstruction de la ville européenne* (Brussels: Archives d’Architecture Moderne, 1978).

necessarily share in, we cannot possibly ignore the contributions of the past'.<sup>23</sup> Addressing the need to formulate a progressive architecture following the demise of the Modern Movement and Italian fascism with its monumental references to classicism, Rogers returns to regionalism. He demands that architecture has to deal with reality and be specific to its spatial-temporal situation, which requires respect for the immediate physical context and a continuity of the historical process. Accordingly, he writes in 'Preexisting Conditions and Issues of Contemporary Building Practice': 'To consider the context means to consider history.'<sup>24</sup> Invention in these terms is not unconditional and originality only emerges in a context in two ways, as a pre-existing 'original act' that forms a coherent consistency belonging to the past and as an existing 'original creation' found in the present. These two contextual conditions are part of a connected development: 'That which, however, disintegrates history unifies it in a sense of continuity whereby the past is projected into present occurrences and the latter are joined together in finding their roots in anterior facts.'<sup>25</sup> Rogers thus unwittingly shares Semper's view that invention is a creative act necessitating a prior disintegration of traditions. Architecture cannot arise from a polemical premise of newness or without the contributions of the past, but demands a rational process of historicising form—comparable to or found in a typological process. This defines 'modern' not as a rupture with history but as a reading of history from the perspective of the present. Understanding architecture through its synthesis with the larger socio-cultural context, its historical continuity and form is always related to that of the city and, equally, that individual creations by architects always refer back to the collective. 'Forms must convincingly document the subtlest ethical claims of collective and individual man, continuing the ancient discourse.'<sup>26</sup>

The desire to define the historical context through ideological, economic, and social aspects, motivated a number of explicit typological urban studies, notably *Studi per una operante storia urbana di Venezia* (1959) by Saverio Muratori (1910–1973). His 'operational history' of the city was influenced by the French school of urban geography and analysed the form of the city and its history by studying the existing morphology in relation to building types. To Muratori, type is 'a "structure of permanent relations" that single initiatives simply adopt through a *unitary and synthetic* consciousness', positing that these unchanging characteristics and formal unity can be rediscovered by urban analysis.<sup>27</sup>

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<sup>23</sup> Ernesto N. Rogers, 'The Phenomenology of European Architecture', *Daedalus*, 93.1 (1964), 358–372 (p. 360).

<sup>24</sup> Ernesto Nathan Rogers, 'Le preesistenze ambientali e i temi pratici contemporanei', *Casabella-Continuità*, 204 (February-March 1955), 3–6. English translation: 'Preexisting Conditions and Issues of Contemporary Building Practice', in *Architecture Culture 1943–1968: A Documentary Anthology*, ed. by Joan Ockman and Edward Eigen (New York: Rizzoli 1993), pp. 200–04 (p. 203).

<sup>25</sup> Rogers, 'Preexisting Conditions and Issues', p. 203.

<sup>26</sup> Rogers, 'Preexisting Conditions and Issues', p. 203.

<sup>27</sup> Giorgio Pigafetta, *Saverio Muratori architetto: Teoria e progetti* (1990), cited by Pier Vittorio Aureli in 'The Difficult Whole: Typology and the Singularity of the Urban Event in Aldo Rossi's Early Theoretical Work. 1953–1964', *Log*, 9 (2007), 39–61 (p. 55).

We need to acquire a sharper understanding of architecture and any form of art [...] we need to embrace the whole reality of a buildings as a manifestation of a collective formal intuition—i.e., as types—which contribute to a particular architectural environment. This means that we have to conceive of individual architectural expression in all of their phases of development, each of which adopts a previous form and includes it as an integral part in a new and more elaborate structure able to encompass and express a whole history and tradition.<sup>28</sup>

Muratori's study of Venice examines the form of urban fragments by comparing regular building types such as dwellings. His conclusion to the study is a hierarchical order that connects the city to its architecture through specific typo-morphological relations, and provides the basis for a theory of design development and form. He insists that building types only achieve spatiotemporal specificity in a real cultural context, while the urban fabric obtains its relevance in regards to larger urban structures, with the entire urban organism only comprehensible from a historical perspective.<sup>29</sup> Accordingly, the building process is a 'spontaneous' but culturally conditioned sequence of constructional phenomena in history, which makes its analysis possible and obligate individual expression to the collective.<sup>30</sup> Studying urban form through a typo-morphological analysis, it suggests a typological design method that derives from a reading of fabrics and types in a particular context, which can then be projected as a historically contingent form. Type thus is the material generator of the city and its elements. Muratori's influential teaching in the 1960s combined historical analysis with a typological design method that was deemed operative in the contemporary city.

However, Giulio Carlo Argan (1909–1992) in 'On the Typology of Architecture' (1962) was the first to return to a discussion of Quatremère's notion of type. Argan first establishes two limitations of types, that ideal types cannot form a standard against which an artifact is valued, and that the impact of ideological content on types is indeterminable in its causality. This is further complicated by Quatremère's formal 'vagueness' of type, which is expressed by its distinction from the material model and making type ineffective to a formal determination necessary for design. To resolve this predicament, Argan reasons that type 'is never formulated *a priori* but always deduced from a series of instances', emerging as a regressive 'root form' that is 'common to every unit of the series' and deriving from comparable functional and formal precedents.<sup>31</sup> This reductive typological analysis defines to Argan its fundamental function to reveal a historical and evolutionary process of

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<sup>28</sup> Muratori as quoted in Pigafetta's *Saverio Muratori architetto*, trans. by Aureli in 'The Difficult Whole', p. 56.

<sup>29</sup> Compare Bernard Leupen, et al, *Design and Analysis* (Rotterdam: 010 Publishers, 1997), p. 137.

<sup>30</sup> Compare Giancarlo Cataldi, 'Designing in Stages: Theory and Design in the Typological Concept of the Italian School of Saverio Muratori', in *Typological Process and Design Theory*, ed. by Attilio Petruccioli (Cambridge, MA: Aga Khan Program for Islamic Architecture, 1998), pp. 35–55.

<sup>31</sup> Argan, 'On the Typology of Architecture', p. 565.

architecture, and makes it available to design. The historical process conflates separated content and form, as ideological content becomes subsumed by architectural form over time, and furthermore, 'when a "type" is determined in practice or theory of architecture, it already has an existence as an answer to a complex of ideological, religious or practical demands which arise in a given historical condition of whatever culture'.<sup>32</sup> This assumption leads Argan to proclaim that once a type is verified as the reduction of a typological series: 'It has to be understood as the interior structure of a form or as a principle which contains the possibility of infinite formal variation and further structural modification of the "type" itself.'<sup>33</sup> This destabilises Quatremère's separation of type and model, suggesting that models through a process of regression can effectively transform into types.

Argan's bias towards formal interpretation and tectonics is motivated by an ambition to establish typology as a working method for architects. He first contends that (historical) types are less useful to determine function than configuration, as functional types only emerged in the second half of the nineteenth century but did not alter the fundamentally internalised ideological content that architectural forms retain despite their formal variation. Second, he argues that the conventional classification of types according to configuration, structure, and decoration coincides with the natural order of resolving an architectural project—from plan to structural system to surface treatment. Having justified the schematic instrumentality of types, Argan needs to explain the scope of artistic creativity, and states that although types are tied to a historical process which establishes a rigid typological scheme, with the 'reduction of preceding works of art to a "type", the artist is freed from being conditioned by a definite historical form, and neutralizes the past. He assumes that what is past is absolute and therefore no longer capable of developing.'<sup>34</sup> This purging of formal specificity and the associated value judgment of models before they become formally 'vague' types, de-historicises form and makes it possible to creatively determine a new value and form within the limits set by a notional 'typological grid'. Even though formal composition still takes recourse to models, their value judgments always occur at a typological level and in comparison to conventions established by their underlying typological scheme. Invention and formal definition, is conditioned by typology and history and, according to Argan, a 'historical invention'.<sup>35</sup> Consequently, he believes that architectural typology is comparable to iconography as a reinvention of past images, themes, and values within a contemporary context, assuming that iconographies imply an ideological consistency and systematic classification of (symbolic) content.

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<sup>32</sup> Argan, 'On the Typology of Architecture', p. 565.

<sup>33</sup> Argan, 'On the Typology of Architecture', p. 565.

<sup>34</sup> Argan, 'On the Typology of Architecture', p. 565.

<sup>35</sup> While Argan in 'On the Typology of Architecture' writes that, with regards to history, the position of the artist, has two aspects, that of typology and formal definition, in his entry 'Typology' for the *Enciclopedia Universale dell'Arte* (vol XIV, 1966) he clarifies this as 'two moments: that of typology and that of historical invention'. As cited by Bandini in 'Typology as a Form of Convention', p. 75.

Argan's reductive instrumentalisation of history as teleological and constant in formal types, however, contradicts Quatremère's critical, ahistorical, and conceptual notion of type, which envisions a greater contingency of types to be articulated within and against the limitation of conventions through separate material models—clearly distinguishing between content and form. Therefore the tension between socio-cultural context, conventions, and history are a prerequisite to Quatremère's typological efficiency, as it is to Semper, who clearly distinguishes between persistent typological motives and their material transformation, whereas Argan demotes invention to the reinterpretation of a formal typological series that is historically predetermined.<sup>36</sup> Argan's influential argument revived a typological concern, but also significantly contributed to its demise as a 'low level theory' appropriated by practising architects.<sup>37</sup>

Greatly influenced by Rogers, Muratori, and Argan, the relationship between history, typology, and the traditional city was explored by the next generation of Italian architects. Carlo Aymonino (1926–2010), the chair for Organisational Characteristics of Buildings at the IUAV, and Rossi, his assistant (1963–65) published an annual programme report that included a number of important essays on urban morphology and building typology.<sup>38</sup> They would become programmatic for the so-called 'Venice Group'.<sup>39</sup> Already in these early writings, the difference between Rossi and Aymonino's concept of typology was evident. In a conference organised by Aymonino in 1965 at the IUAV, Rossi presents 'Tipologia, manualistica e architettura' and Aymonino 'La formazione del concetto di tipologia edilizia'.<sup>40</sup> Both cite Quatremère's distinction between type and model in his dictionary of architecture and Durand's *Précis*, the latter in support of the argument that typological methods are effective at an architectural and urban scale. While agreeing that types are the irreducible elements of the city, their selective references to Argan highlight an important

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<sup>36</sup> Oechslin levels a similar critique against Argan for obfuscating typology and reducing it to a method that misrepresents Quatremère's relation of type to history and form; see 'Premises for the Resumption of the Discussion of Typology', pp. 36–53.

<sup>37</sup> See Bandini in 'Typology as a Form of Convention', p. 75, who defines 'low level theory' as 'weak in explanatory power'.

<sup>38</sup> Istituto universitario di architettura di Venezia, *Aspetti e problemi della tipologia edilizia: Documenti del corso di caratteri distributivi degli edifici. Anno accademico 1963–1964* (Venice: Editrice Cluva, 1964); Istituto universitario di architettura di Venezia, *La formazione del concetto di tipologia edilizia: Atti del corso di caratteri distributivi degli edifici. Anno accademico 1964–1965* (Venice: Editrice Cluva, 1965); and Istituto universitario di architettura di Venezia, *Rapporti tra la morfologia urbana e la tipologia edilizia: Atti del corso di caratteri distributivi degli edifici. Anno accademico 1965–1966* (Venice: Editrice Cluva, 1966). Rossi advanced his idea of typology in the following seminar papers: 'Considerations on the Relationship between Urban Morphology and Building Typology' (1964), 'Typological Problems and Housing' (1964), 'Methodological Problems of Urban Research' (1965), 'Typology, Manuals, and Architecture' (1966, and 'The City as Fundamental for the Study of Building' (1966).

<sup>39</sup> Pier Vittorio Aureli distinguishes between this early group, the 'Scuola di Venezia' (Rossi and Aymonino with Constantino Dardi, Gianugo Polesello, Emilio Mattioni, and Luciano Semerani), the later 'Gruppo Architettura' (including Aymonino, Dardi, Gianni Fabbri, Raffaele Panella, Polesello, and Semerani), and the 'Venice School' formed around Manfredo Tafuri; compare *The Project of Autonomy: Politics and Architecture within and against Capitalism* (New York: Princeton Architectural Press, 2008), pp. 13–14.

<sup>40</sup> Both presentations were reprinted in *Rapporti tra la morfologia urbana e la tipologia edilizia* (1966) and excerpts are in 'Focus: Zur Rolle der Typologie', *Arch+*, 37 (1978), 39–47.

difference. Rossi understands typology as an analytical and cultural category to study the form of the city, and following a reading of Quatremère's type as an essential idea, concurs with Argan that 'type is a constant, it can be found in all the areas of architecture. It is therefore also a cultural element and as such can be sought in the different areas of architecture; typology thus becomes broadly the analytical moment of architecture and can be characterized even better at the urban level.'<sup>41</sup> Rossi further explains that typology always impinges on the city, as buildings are only a moment of the whole, the city, which is fundamentally a man-made fact. This definition of type is republished verbatim in *The Architecture of the City*. As Luciano Semerani, a colleague at the IUAV recalls, Rossi's early notion of typology 'referred to studies of geography and natural science, and to anthropological interpretations of life and human culture that see the coincidence between species and forms as having an inbred, predetermined structure'.<sup>42</sup>

In comparison, Aymonino sees typology not as a category, but as an instrument to order the elements of the city. Through a historiographical analysis of the formation of building types and their reciprocity to societal demands and organised activities, he reformulates the potential of Argan's typological series as substantiated by the projects of the Modern Movement to effect the formation of building typologies and urban morphology. Type is to him 'the reference point of the emerging urban structure', but recognises that 'the boundary between "type" and "model" would often be weak and the prototype will later become the type to be confirmed in the subsequent built examples'.<sup>43</sup> As Aymonino later clarifies in 'Type and Typology' (1985), building typology defines 'the study of the possible associations of elements in order to attain a classification of architectural organisms by types'.<sup>44</sup> He adds that elements are part of the whole, but are separately analysable. They are by typology identified either as autonomous phenomena and stylistic or formal procedures, or as urban phenomena in organisational and structural terms. Classification hereby enables the comparison of phenomena through the abstraction of examples to their commonality in respect to history and form. Aymonino subsequently enlarges his initial definition of building typology to the 'study of the artificial organisational and structural elements (meaning not only buildings but walls, avenues, gardens etc—the whole built fabric of the city) with the aim of classifying them in relation to the urban form of a specific historical period (or a particular urban form, which is the same thing)'.<sup>45</sup> Consequently, two modes of classification can be distinguished. First, the classification by formal types, or an 'independent typology' constituting a critical method to analyse and compare individual artifacts through their reduction to a common scheme, as demonstrated by Rudolf

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<sup>41</sup> Aldo Rossi, 'Tipologia, manualistica e architettura', as cited by Bandini in 'Typology as a Form of Convention', p. 78.

<sup>42</sup> Semerani, 'Arrive e Partenze', in Aldo Rossi, *Il Teatro e la Città* (Milan: Edizioni Unicopli, 2003), as cited by Aureli, 'The Difficult Whole', p. 55.

<sup>43</sup> Carlo Aymonino, *Il significato della città* (1976), p. 77, as cited by Bandini in 'Typological Theories in Architectural Design', p. 391.

<sup>44</sup> Aymonino, 'Type and Typology', p. 49.

<sup>45</sup> Aymonino, 'Type and Typology', p. 49.

Wittkower's studies of Renaissance buildings. Second, a classification by functional types, or an 'applied typology' that has a historical definition, which provides an analysis of the whole by relating its different parts and by describing structural constants or constituent elements and types in context and in regards to the urban. Criticising Argan for oversimplifying the relationship between history and form, Aymonino's separation of analysis from design is significant, proposing that applied typology only functions dynamically and in dialectic terms by permitting an understanding of how specific types transform the city through a synthesis of the urban, its history, and inventions conceived by individual authors through architecture.<sup>46</sup> Using architectural examples by Brunelleschi and Alberti—claiming that they were envisioned at a city scale—Aymonino writes: 'There is no need to extend the unitary co-ordination of space to the whole city, since those architectures demonstrate visibly their ability to beam their rational qualities over the polystratified medieval fabric.'<sup>47</sup>

The difference between Rossi and Aymonino is reiterated in a collection of essays in *La città di Padova: Saggio di analisi urbana* (1970) and reveals essentially a different understanding of autonomy. Aymonino insists on the independence of analysis from design, with building typology and urban morphology synthesised by applied typologies, which allow the dialectic assessment of building designs and functional elements in regards to the formation of the urban, but do not justify design itself. To Aymonino, the problem of architecture is analysable but not resolvable by typology. In contrast, Rossi sees type as autonomous and capable of mediating between building typology and urban morphology, allowing an analogous design reasoning to emerge. He clearly formulates his position in *The Architecture of the City* (1966), which was contemporaneous to two other important books arguing for a new rational basis of architecture: Vittorio Gregotti's *Il territorio dell'architettura* (1966), and Giorgio Grassi's *La costruzione logica dell'architettura* (1967).

## 1.2 ROSSI'S THE ARCHITECTURE OF THE CITY

Aldo Rossi (1931–1997) was a successful architect and designer, and prolific educator and writer shaping Neorationalism. He studied at the Politecnico di Milano (1949–59) under Rogers and began writing for *Casabella continuità* in 1955, becoming an editor in 1961. Rossi started teaching at the Scuola Urbanistica, Arezzo as Ludovico Quaroni's assistant (1963) and then at the IUAV assisting Aymonino (1963–65), before taking up numerous professorial appointments, with the most permanent position held at the IUAV (1975).<sup>48</sup>

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<sup>46</sup> Aymonino claims that Argan's following statement only applies to independent typology: 'The aim behind typological grouping is neither artistic valuation nor historical definition in that works of a very high level and common buildings of any period and place may enter the same class of typology.' See, 'Type and Typology', p. 50

<sup>47</sup> Aymonino, 'Type and Typology', p. 49. He refers to Santa Maria del Fiore, San Lorenzo, San Spirito, and the rotunda of Angeli.

<sup>48</sup> Rossi held other professorships at Politecnico di Milano (1965–71), Eidgenössische Technische Hochschule, Zurich (1972–75), as well as visiting professorships in Spain and the United States of America, including Cooper Union (1977) and Yale School of Architecture (1980). Rossi widely published and exhibited his

As curator of the XV Triennale in Milan (1973) and editor of the accompanying catalogue *Architettura Razionale*, Rossi brought together the protagonists of an unofficial Tendenza movement.<sup>49</sup> The exhibition consolidated the varied practices and theories labelled under Neorationalism that shared the position of architecture as a formal and autonomous discipline deriving its reasons from a typological and morphological analysis of the city as a large artifact. Massimo Scolari wrote that Tendenza saw architecture as ‘a cognitive process that in and of itself, in the acknowledgment of its own autonomy, is today necessitating a refounding of the discipline; that refuses interdisciplinary solutions to its own crisis; that does not pursue and immerse itself in political, economic, social, and technological events only to mask its own creative and formal sterility’.<sup>50</sup> And Rossi proclaimed in his introduction to *Architettura Razionale*: ‘We must stretch towards the typological question, by pursuing a precise aim which should be considered as an integral part of design, because it is *design*. This is the only way in which we will be able to win over the meaningless typological lists produced by the academicians.’<sup>51</sup> The Tendenza therefore proposed architectural design as a rediscovery, taking place within a received repertoire of forms, and involving a framework of analysis found in the structure of the city.

The exhibition attracted international attention and generated interest in Rossi’s *The Architecture of the City* (L’architettura della città). First published in 1966, the book was based on his seminars for Aymonino’s programme at the IUAV, in particular ‘Architecture for Museums’, which published in 1966 outlines the principal arguments of the forthcoming book. Rossi argues that architecture like politics is subjective, but has a personal responsibility and choice, and that the architecture of the city is defined by the principles of architectural design theory: ‘They are firstly the study of monuments, secondly the argument on form and the physical world, and lastly the study of the city; or better a new bilateral conception of urban architecture.’<sup>52</sup> With architecture signifying a mediation of urban events, its transformation from a natural to a man-made work (of art) requires, so Rossi, both an individual and collective will.

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projects, with built work including the San Cataldo Cemetery at Modena (1985), the Gallaratese 2 (1973) housing project in Milan, Teatro del Mondo (1980) for the Venice Biennale, and Quartier Schützenstrasse in Berlin (1998) as part of the Internationale Bauausstellung. He wrote an extensive number of articles and essays, with his two main books, *The Architecture of the City* (1966) and *A Scientific Autobiography* (1981), published in English. In 1990, he was awarded the Pritzker Prize in Architecture.

<sup>49</sup> The key figures of the Tendenza were Aldo Rossi, Giorgio Grassi, Massimo Scolari, and Ezio Bonfanti. For details of the triennale and its contributors, see Geoffrey Broadbent, *Emerging Concepts in Urban Space Design* (London: Van Nostrand Reinhold, 1990), pp. 178–83.

<sup>50</sup> Massimo Scolari, ‘Avanguardia e Nuova Architettura’, in *Architettura razionale*, ed. by Massimo Scolari et al (Milan: Franco Angeli, 1973), trans. by Stephen Sartarelli as ‘The New Architecture and the Avant-Garde’, in *Architecture Theory Since 1968*, ed. by K. Michael Hays (Cambridge, MA: MIT Press, 2000), p. 131.

<sup>51</sup> Aldo Rossi, ‘Architettura razionale’, in *Architettura razionale*, trans. By Luigi Beltrandi as ‘Rational Architecture’, in *Aldo Rossi: Selected Writings and Projects*, ed. by John O’Regan et al (London: Architectural Design, 1983), pp. 54–57 (p. 57).

<sup>52</sup> Aldo Rossi, ‘Architettura per i musei’ (seminar at IUAV, 1966). English translation: ‘Architecture for Museums’, in *Aldo Rossi: Selected Writings and Projects*, ed. by John O’Regan, et al (London: Architectural Design, 1983), pp. 14–21 (p. 19).

Therefore architecture is created with the forming of the city and in time dwellings and monuments are created. Dwelling and monuments, private and public events, are the reference terminology for the study of the city which have imposed themselves from the beginning and constitute the principles of classification of an Aristotelian analysis of the city. Architecture and the city detach themselves from any other science because they propose themselves as an adaption of nature, having been once natural elements.<sup>53</sup>

'Architecture for Museums' insists on an intrinsic relationship between architectural theory and practice, asserting 'that the first principle of theory is the necessity to persist with the same themes', since the task of architects is 'to focus on the theme to be developed, to choose a method of analysis internal to architecture and to try to always solve the same problem'.<sup>54</sup> This thesis of repetition as an instrument of rationality exists throughout Rossi's work. While he further suggests that the 'autobiography of the artist' is a driving force of design, this argument is minimised in *The Architecture of the City* in favour of an analytic architectural theory and urban science. The book is an attempt to formulate a theoretical position and didactic methodology, and concludes Rossi's evolving realist-rationalist agenda since the mid-1950s.<sup>55</sup> A member of the Italian Communist Party, Rossi was influenced by Marxist historical materialism, and greatly stimulated by the critical debates in *Casabella continuità*, for which he wrote on a diverse range of topics that resurface in the book: from reflections on architectonic language, architecture as a problem of historical knowledge, society and tradition, and questions of innovation and composition in architecture, to related studies of the locale, the plan, monument, and rituals.<sup>56</sup>

*The Architecture of the City, in fact has a precise meaning worth recalling in as simple a way as possible: to consider the city as architecture means to recognize the importance of architecture as a discipline that has a self-determined autonomy (and thus is not autonomous in an abstract sense),*

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<sup>53</sup> Rossi, 'Architecture for Museums', p. 17.

<sup>54</sup> Rossi, 'Architecture for Museums', as cited by Micha Bandini in 'Aldo Rossi', *AA Files*, 1 (1981–1982), 105–11 (p. 108). Compare with translation in *Rossi: Selected Writings and Projects*, p. 16.

<sup>55</sup> Aureli in 'The Difficult Whole' distinguishes three periods in Rossi's early formative years. First, 1953–57 as a period of realist attitude in which Rossi investigates the multilayered forms of tradition and, inspired by neorealist cinema, proposes that architecture similarly can be understood in terms of exemplary and typical events. The second period, 1958–63, is characterised by the writings for *Casabella* and a search for rationalism that defines disciplinary knowledge. Rossi sees this rationalism not as normative, but wants to define architectural forms in relation to more general urban themes. In the final period, 1964–66, Rossi is dedicated to typological studies in order to define a methodological theory.

<sup>56</sup> Rossi contributed to thirty-one articles in the magazine. Prior to *The Architecture of the City*, Rossi closely collaborated with Ernesto Nathan Rogers, Luciano Semerani, Francesco Tentori, Silvano Tintori, Vittorio Gregotti, Carlo Aymonino, Guido Cannella and others, resulting in a number of critical texts, notably 'Il linguaggio di Perret' (1955), 'Il concetto di tradizione nell'architettura neoclassica milanese' (1956), 'L'influenza del romanticismo europeo sull'architettura di Alessandro Antonelli' (1957). The different developed themes and publications are detailed by Carlo Olmo, 'Across the Texts', trans. by Jessica Levine, *Assemblage*, 5 (1988), 90–121.

*constitutes the major urban artifact within the city, and, through all the processes analyzed in this book, links the past to the present. Architecture so seen is not diminished in terms of its own significance because of its urban architectural context or because a different scale introduces new meanings; on the contrary the meaning of the architecture of the city resides in a focus on the individual project and the way it is structured as an urban artifact.*<sup>57</sup>

*The Architecture of the City* is to begin with a critique of the Modern Movement, especially its functionalist abstraction. However, it is also a revision of a rationalist doctrine that understands rationality as a relational structure, as this limits formal invention and forces a dependence on social content to explain and justify form. Rossi contends that formal invention arises from serial developments occurring between the relational structures defined by urban morphology and building types, and is produced by, and consistent with, architectural form. Through this formal relation, he suggests, architecture gains autonomy from social sciences—but not from social and political reality—necessitating a structural coherence that is reasoned from within architecture. Contrary to the conception of architecture as belonging to the fine arts by means of shared figuration, a position principally upheld by the Modern Movement, architecture has a ‘self-determined autonomy’ that is uniquely tied to reality and rationalism: ‘Such an argument presupposes that the architectural artifact is conceived as a structure and that this structure is revealed and can be recognized in the artifact itself.’<sup>58</sup> As stated in ‘Architecture for Museums’, this proposition is based on two related theses. First, architectural principles are immutable and in their origin ahistorical, whereas architectural solutions occur within typological limits and constantly change in response to events.<sup>59</sup> Quoting Viollet-le-Duc, this formal stability is ‘due to the rational and seducing character of architectonic terms. *If unity has to exist in architecture, it cannot happen by applying a number of different forms to it, but only in the search for that form that is the expression of—and is prescribed by reason.*’<sup>60</sup> Accordingly, the second thesis is that architectural form is logical and limited in its repertoire. Form is ‘a precise sign that is found in reality and is the measure of a process of transformation. In this way architectural form is something closed and perfect, still part of a logical terminology.’<sup>61</sup> This statement evokes Quatremère’s belief that abstraction is specific to a discipline and a gauge of artistic achievement and coherence. The possible autonomy of architecture is, in both instances, conditional to an unquestionable relationship of theory to design practice.<sup>62</sup>

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<sup>57</sup> Rossi, ‘Preface to the Second Italian Edition (1969), in Rossi, *The Architecture of the City*, p. 165.

<sup>58</sup> Rossi, *The Architecture of the City*, p. 40.

<sup>59</sup> Rossi, ‘Architecture for Museums’, p. 18.

<sup>60</sup> Rossi, ‘Architecture for Museums’, pp. 18–19.

<sup>61</sup> Rossi, ‘Architecture for Museums’, p. 21.

<sup>62</sup> Already in 1961 Rossi wrote about design: ‘The situation is such that it contains an ideological commitment before a technical one, and also such that, as happens in these cases, theoretical study and practical action cannot be separated.’ In ‘La città e la periferia’ (1961), as cited by Olmo, ‘Across the Texts’, p. 96.

Although *The Architecture of the City* refutes the methodologies of Modernism, it maintains its tenets and an interest in the architectural project—affirmed by the aim to reformulate the ‘Modern Movement’s legacy and its significance’ as a project of modernity.<sup>63</sup> The book is not just a reaction against a proliferating urban planning doctrine but also against a polemic new urban scale that is based on a concept of city-region.<sup>64</sup> Rossi demands a return to factual and concrete analysis able to mediate between fundamental questions of architecture and urban science. Eisenman, the co-editor of the book’s translation in 1982 describes this shift as follows: ‘For Rossi’s generation it was no longer possible to be a hero, no longer possible to be an idealist; the potential for such memories and fantasies had been taken away forever.’<sup>65</sup> Or, as Rossi remarks himself, it was impossible to ‘concern ourselves with the architecture of the city—in other words, architecture itself—without a general framework in which to relate urban artifacts’.<sup>66</sup> Later in *A Scientific Autobiography* (1981) he added: ‘To what then, could I have aspired, in my craft? Certainly to small things, having seen that the possibility of great ones was historically precluded.’<sup>67</sup>

Rossi finds this general framework in neo-Enlightenment humanism. He declares that a ‘rational’ analysis of the city is possible and formulates a different notion of modernity. Contending that the permanence of urban artifacts and their form prevail over function—reversing the ‘naïve’ functionalist dogma of form-follows-function—the structures of architecture and the primary elements of the city are comprehended in terms of their singularity and continuity of form: their historical and typological contingency. The principal thesis of *The Architecture of the City* is therefore the city as a series of man-made real facts, more specifically, singular urban artifacts, which are architectural elements with a particular form that construct—a term also understood in the sense of reasoning—the city over time. The *individualità del fatto urbano* denotes urban ‘facts’, both the ‘individuality’ of urban artifacts’ and the ‘singularity of the urban event’, and signifies the corresponding formal and socio-political meaning of architecture and the city in Rossi’s writing.<sup>68</sup> The city of Split in Croatia is emblematic of this relationship between architecture and city, as Split developed within the precise form of Diocletian’s Palace while adapting to a multiplicity of new functions.<sup>69</sup> Architecture therefore is a ‘permanent, universal, and necessary artifact’ and a ‘concrete form of society’, manifesting the collective will to improve the living

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<sup>63</sup> Rossi, *The Architecture of the City*, p. 165.

<sup>64</sup> A detailed study of the historical and critical context in which Rossi wrote *The Architecture of the City* is given by Mary Louise Lobsinger, ‘The New Urban Scale in Italy: On Aldo Rossi’s *L’architettura della città*’, *Journal of Architectural Education*, 59.3 (2006), p. 28–38.

<sup>65</sup> Eisenman, ‘Editor’s Introduction’, in Rossi, *The Architecture of the City*, p. 4.

<sup>66</sup> Rossi, *The Architecture of the City*, p. 101.

<sup>67</sup> Aldo Rossi, *A Scientific Autobiography*, trans. by Lawrence Venuti (Cambridge, MA: The MIT Press, 1981), p. 23. Rossi began notes for this book in 1971.

<sup>68</sup> See Aureli, ‘The Difficult Whole’, p. 39, n.3.

<sup>69</sup> See Rossi, ‘Comments on the German Edition’, in *The Architecture of the City*, p. 179.

environment, but also expressing individual aesthetic intentions.<sup>70</sup> As real (arti)facts, architecture and city are not defined by technocratic (town) planning criteria but formal relations, which demand a new analytical method and theory of urban artifacts: an urban science. Accordingly, the architecture of the city implies two complementary facts, the city as a large man-made complex, a 'city of parts', and urban artifacts, which are the individual elements of the urban totality. A continuous exchange between urban artifact, representing the 'ultimate verifiable fact of this reality', and urban totality is fundamental to Rossi's conception of architecture.<sup>71</sup>

Rossi's reading of the city opposes any qualitative difference between the scales of architecture and the urban, which opposes the control of architecture by urban planning or the reduction of urban problems to questions of scale. In fact, he disputes form having any scale whatsoever. The city as 'total architecture' is based on three fundamental arguments. First, permanences, the enduring urban elements such as monuments, retain their formal stability and defining role in a city's formation despite continuous transformations of function and the larger urban system. Permanences allow the comparison of otherwise unrelated historical phenomena, because the city only has a 'before and an after' in the sense of temporal development but not when comparing the idea of the ancient and modern city. This means that the city is always a man-made object with enduring qualities and has either already become, or is becoming, subject to an analogous process that channels the diversity of its history through memory.<sup>72</sup> Second, some primary elements 'retard' or 'accelerate' the urban process.<sup>73</sup> While, for example, monuments are always primary elements and architectural signs of the collective, other more common primary elements are originally defined by 'fixed activities' as public elements belonging to the collective—including 'stores, public and commercial buildings, universities, hospitals, and schools'.<sup>74</sup> Primary elements are catalysts of spatial transformation with an impact beyond the city on the region. Stimulating ceaseless transformative processes, they obtain a different significance: 'Frequently they are not even physical, constructed, measureable artifacts; for example, sometimes the importance of an event itself "gives place" to spatial transformations of a site.'<sup>75</sup> Third, regardless of formal differences, parts of the city are spatially continuous and have 'binary' typological and morphological relationships that develop during recurrent and formative (historical) moments. These spatial continuities

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<sup>70</sup> Rossi, *The Architecture of the City*, p. 21. This paraphrases an earlier explanation in 'Architecture for Museums' that architecture is 'a creation inseparable from life and society', the city, and aesthetic intentions; compare *Selected Writings and Projects*, p. 17.

<sup>71</sup> Rossi, *The Architecture of the City*, p. 29.

<sup>72</sup> Compare Rossi, *The Architecture of the City*, pp. 63 and 126.

<sup>73</sup> Rossi, *The Architecture of the City*, p. 63.

<sup>74</sup> Rossi, *The Architecture of the City*, p. 86. He further explains that 'fixed activities' are to primary elements what the house is to the residential area.

<sup>75</sup> Rossi, *The Architecture of the City*, p. 87.

register the moments and transformations defining the development and totality of the city, and the 'unity of these moments is the urban unity as a whole'.<sup>76</sup>

Rossi's proposition of total architecture relativises the 'generative-functional' system of urban spaces established by the Modern Movement. Conforming to a Platonic abstraction of the city according to political, social, and economic disciplines, the generative-functional approach disregards the reality of artifacts. Therefore, Rossi favours an Aristotelian analysis of urban reality through urban geography and architecture, which sees the city as constituted by spatial structures and artifacts that result from an interrelated social and physical construction of the city.<sup>77</sup> *The Architecture of the City* accordingly interprets the city as formed by the dialectic between collective and private interests, which are manifest in architecture and explicated by an analysis of urban artifacts. Although urban science—the study of urban constitution and formation, as well as the analysis of permanence and modification—is generally part of human sciences and cultural history, a focus on its inherent formal values defined by construction and architecture allows it to exceed the constraints of scientific and historical urban studies. Rossi therefore understands urban science as operating above disciplinary divisions and as a simultaneous study of the city that considers the formal architectural construction and the social signification of urban places and events. The formation of the city hereby is read through collective urban artifact and their indivisible individual form.<sup>78</sup> The complicity between collective and individual form, formalised by architecture throughout the city's historical formation, is the foundation for a theory of urban artifacts and architecture's fragile autonomy.

We can study the city from a number of points of view, but it emerges as autonomous only when we take it as a fundamental given, as a construction and as architecture; only when we analyze urban artifacts for what they are, the final constructed result of a complex operation, taking into account all of the facts of this operation which cannot be embraced by the history of architecture, by sociology, or by other sciences.<sup>79</sup>

The structure, singularity, and evolution of urban artifacts are fundamental to a 'quantitative evaluation of analytic material' in the city, and call attention to a considerable flaw in urban planning. Urban interventions that follow generic planning criteria are ineffective to

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<sup>76</sup> Rossi, *The Architecture of the City*, p. 64.

<sup>77</sup> Compare with 'La città come fondamento dello studio dei caratteri degli edifici' (1966), in which Rossi contrast two fundamental readings of the city. The position of functional urban spaces with its economic, political, and social systems, which result respectively in functional zoning, the comparison of the political form of the city, and the study of social groups and areas that define the urban system. This is contrasted with understanding the city as spatial structures, which describes, defines, and classifies the city as artifact and through urban geography. Trans. as 'The City as the Basis for the Study of the Characters of Buildings' in *Aldo Rossi: Selected Writings and Projects*, pp. 26–33.

<sup>78</sup> Compare Rossi, *The Architecture of the City*, pp. 57 and 113.

<sup>79</sup> Rossi, *The Architecture of the City*, p. 22.

delineate architecture, which as an integral part of the city is always defined by the singularity of place: the *locus solus*. Besides, the *locus* is itself an artifact in which time, space, and events coalesce, forming both singular and universal relationships between a location and its buildings. This unity, Rossi enthuses, was exemplified in the Greek city, when the ‘inseparable relationship with the modes of being and behavior of human beings’ was integrated with urban artifacts in time and space, leading to a ‘clarifying of those forces that are at work in a permanent and universal way in all urban artifacts’.<sup>80</sup> The Greeks recognised a cultural construction of the city by man that corresponded to its physical formation. Knowledge of these invariant ‘essential themes’, Rossi claims, however remains accessible in the contemporary city through the traces of ‘manufacture’. This reasoning is confirmed to him by Francesco Milizia (1725–1798), to whom architecture signified a moving from natural imitation to ‘historical vision’, understanding architecture as having an artificial nature and value expressed by labour: ‘Although architecture in reality lacks a model in nature, it has another model derived from man’s natural labor in constructing his house.’<sup>81</sup> The understanding of urban phenomena through *manufacture* or labour makes a comparative method effective and necessary to the analysis of urban artifacts and the city.

The comparative method—by definition a historical method—reveals the complexity of urban artifacts and ‘allows the verification of hypothesis on the city, as the city is a repository of history’.<sup>82</sup> Rossi proposes two parallel applications of the historical method, one that studies the city as man-made and material object constructed over time and another focussed on the real and ideal formation and structure of its urban artifacts. This simultaneously considers chronological and atemporal effects, and analyses the characteristics and continuities in a dynamic relationship between the parts of the city, which is particularly discernible in permanences. However, permanences are not simply determinants of urban history. They are either ‘propelling’, like the Palazzo della Ragione in Padua, and through continuous transformation vitally contribute to urban development, or, are ‘pathological’, such as the Alhambra, which has become a set-piece disconnected from the urban system. The significance of permanences is equivalent to ‘that which fixed structures have in linguistics; this is especially evident as the study of the city presents analogies with that of linguistics, above all in terms of the complexity of its processes of transformation and permanence’.<sup>83</sup> The structuralist argument—which in Rossi’s view delimits and defines urban sciences—owes to the *Course in General Linguistics* (1916) by Ferdinand de Saussure. As knowledge arises from facts created by man, it is historical; and in architecture, which is bound to the development of the city, a comparative analysis gives priority to the vitality of history through which permanence is clarified and at times transformed. This reasoning also emerged in Quatremère and Semper’s theories, as

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<sup>80</sup> Rossi, *The Architecture of the City*, p. 24.

<sup>81</sup> Francesco Milizia, *Principj di Architettura Civile* (1781), cited by Rossi in *The Architecture of the City*, p. 27. Compare to the same citation and its explanation in Rossi’s ‘Architecture for Museums’, p. 17.

<sup>82</sup> Rossi, *The Architecture of the City*, p. 127.

<sup>83</sup> Rossi, *The Architecture of the City*, p. 22–23.

history, despite becoming useful to analysis only through historical specificity, ultimately establishes ahistorical facts. But, whereas to them a historical reading ought to be specific to the period examined and form is discontinuous, Rossi reads history from the perspective of the present and understands form, although historically specific, as continuous.

Having claimed that architecture's facts are unexplained by social sciences, this is soon contradicted by subsequent statements. The primary thesis of urban continuity and permanence, but also Rossi's definition of history, *de facto* derive from a sociological thesis by Maurice Halbwachs (1877–1945). According to Halbwachs's distinction between history and memory, history is a recorded and fixed 'memory' concerned with changes occurring relative to historical periods, whereas individual and collective memories are evolving repetitions of the past that transgress the temporal and spatial limits of history.<sup>84</sup> Even if diverse collective memories are formed by individual autobiographical memories that, unlike history, depend on direct experiences, these are contextualised by a framework of social groups or milieus to which the individual belongs. The social interactions constitute a reciprocal process of remembrance, whereby personal consciousness and interests are subsumed by collective memories in a continuous recreation and reinterpretation of the past. According to Halbwachs, the difference of collective memory from history 'is a current of continuous thought whose continuity is not at all artificial, for it retains from the past only what still lives or is capable of living in the consciousness of the groups keeping the memory alive.'<sup>85</sup> With collective memories resulting from communications in the present, a relevance of the past is only recognised when persisting in contemporary collective memory, otherwise it is preserved as history. Therefore, Eisenman misconstrues Rossi's basic premise borrowed from Halbwachs, when stating the reverse that 'memory begins when history ends'.<sup>86</sup>

Adopting Halbwachs's concept of an active past in collective memory that is not historical, Rossi understands the permanences of architecture as 'a past that we are still experiencing' and as dependent on a sustained relevance of the urban artifact to urban development, whereby they become characterised by the *locus*, the space, time, and events that are also the context of Halbwachs's social group.<sup>87</sup> The necessary invariance of permanences in the historical process emerges as a singularity found in the essential 'idea' of the building, and is part of an urban collective memory and consciousness that arises with the spatial development of the city. Only in this sense does history become reducible to collective memory, and is formed at the particular moments when in the city during 'the course of its construction, its original themes persist, but at the same time it modifies and renders these themes more specific'.<sup>88</sup> This can be deemed a typological clarification

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<sup>84</sup> See Maurice Halbwachs, *Les cadres sociaux de la mémoire* (1925) and *La mémoire collective* (1950).

<sup>85</sup> Maurice Halbwachs, *The Collective Memory* (New York: Harper & Row, 1980), p. 80.

<sup>86</sup> Rossi, *The Architecture of the City*, p. 11.

<sup>87</sup> Rossi, *The Architecture of the City*, p. 59.

<sup>88</sup> Rossi, *The Architecture of the City*, p. 21.

reconciling the singular qualities of architecture and the collective nature of the city, and is revealed 'in the relationship between the public and private sphere, between public and private buildings, between the rational design of urban architecture and the values of *locus* or place'.<sup>89</sup> Therefore the importance given by Rossi to a rational definition of primary elements and their permanence as disclosing the reasons of architecture: 'Although such works arise as a means of constituting the city, they soon become an end, and this is their being and their beauty. The beauty resides both in the laws of architecture which they embody and in the collective's reasons for desiring them.'<sup>90</sup>

As Halbwachs states, collective memories are a social 'record of resemblances', modified by changing group relations. Concurring, Rossi argues that collective memories are formative to the city, yet formed by a changing dynamic of urban development. Expanding Halbwachs's thesis, the city is a framework in which individual memories and artifacts partake in the formation of collective memory and history of the city. This is evident in monuments representing, as the 'willed expression of power', both a collective idea of the city and the actions by individuals, creating a complex context of continuity between the past and the present.<sup>91</sup> As already posited in 'Architecture for Museums', the study of monuments finally refers to a mediation of architectural events and is less a history than a survey: 'The architectural survey of a monument constitutes the only way of comprehending the characteristics of a certain type of architecture.'<sup>92</sup> The monument represents the 'fixed point of human creation; tangible signs of the action of reason, and collective memory', in other words, the 'biography of the artist and the history of society'.<sup>93</sup> Collective memories become expressed as permanences, as that which is common-to-all, and act as a stabilising reference to architecture in a continuous process of urban change. Therefore, the importance of permanences is unexplained by isolated historical moments but emerge from an ahistorical instrumentality and multi-layered structural significance.

The value of history seen as collective memory, as the relationship of the collective to its place, is that it helps us to grasp the significance of the urban structure, its individuality, and its architecture which is the form of this individuality. The individuality ultimately is connected to an original artifact—in the sense of Cattaneo's principle; *it is an event and a form*. Thus the union between the past and the future exists in the very idea of the city that it flows through in the same way that memory flows through the life of a person; and always, in order to be realized, this idea must not only shape but be shaped by reality. This shaping is a permanent aspect of a city's unique artifacts,

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<sup>89</sup> Rossi, *The Architecture of the City*, p. 21.

<sup>90</sup> Rossi, *The Architecture of the City*, p. 126.

<sup>91</sup> Rossi, *The Architecture of the City*, p. 131.

<sup>92</sup> Rossi, 'Architecture for Museums', p. 20.

<sup>93</sup> Rossi, 'Architecture for Museums', p. 23.

monuments, and the idea we have of it. It also explains why in antiquity the founding of a city became part of the city's mythology.<sup>94</sup>

The mythology alluded to relates to Halbwachs's conviction that knowledge of the past is not only obtained through historiography and biography, but equally through other mnemonic devices such as symbols and rituals, which constitute a particular physical and social form. Similarly, Rossi states: 'For if the ritual is the permanent and conserving element of myth, then so too is the monument, since, in the very moment that it testifies to myth, it renders ritual forms possible.'<sup>95</sup> This returns him to the well-rehearsed argument that ancient Greece had a mythological relationship to nature, which facilitated a transition from nature to culture. With reference to Karl Marx and Marcel Poëte, Rossi posits that in the Greek city, architecture was inseparable from socio-political development and provided the first examples of an urban science and theory of urban artifacts. The timeless conceptualisation of the city was expressed by the Greek notion of *polis* representing an intrinsic relationship between the city and its region that knew no distinct limits other than those defined by its citizens and the state. The ideal place of the *polis* with its bond between city, citizens, and a cultivated nature, is in Rossi's view the origin of all cities and resolves the contradiction between the city as formed by the collective and the demands or desires by individuals. The Greeks thought of the city as a 'mental place' that was intellectually constructed according to the criteria of a most suitable political organisation and moral utility. While Rossi accepts that this humanist model is an ideal no longer attainable, which explains his siding with Aristotle's analysis of the city in favour of Plato's political discussion, he still detects its disguised presence in the modern city.

Any Western city that we analyze has its origins in Greece; if Rome is responsible for supplying the general principles of urbanism and thus for the cities that were constructed according to rational schemes throughout the Roman world, it is Greece where the fundamentals of the constitution of the city lie, as well as of the type of urban beauty, of an architecture of the city; and this origin has become a constant of our experience of the city. The Roman, Arab, Gothic, and even the modern city have continuously emulated this constant, but only at times have they penetrated the surface of its beauty. Everything that exists in the city is both collective and individual; thus the very aesthetic intentionality of the city is rooted in the Greek city, in a set of conditions that can never recur.<sup>96</sup>

Even though the socio-spatial synthesis of the Greek city is unfulfilled by the contemporary city, Rossi believes that a theory of urban artifacts discloses permanent phenomena which

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<sup>94</sup> Rossi, *The Architecture of the City*, p. 131.

<sup>95</sup> Rossi, *The Architecture of the City*, p. 24.

<sup>96</sup> Rossi, *The Architecture of the City*, p. 134.

link modern artifacts to their classical roots, and the desire but impossibility to retrieve them is a tension explicit in the ambiguities of Rossi's work. The aesthetic intentions of the man-made city are revealed by the permanences of architecture, and are testament to the origins of the modern city in a Greek ideal. Therefore, there is no 'before and an after', only a constant (Greek) idea of the city.

Urban artifacts—a building, a street, and a district—are to Rossi structuring elements of the city with their own history and form. Importantly, the functional transformation of urban artifact over time attests to the limited value of function to the study of the city. Although Rossi admits that 'we must still come to grips with the whole of functionalist theory', he assures that it will be transcended if 'we recognize the importance of both *form and the rational processes of architecture*', which to him represent a multitude of values irreducible to function and organisation.<sup>97</sup> A rational and formal study of urban artifacts is consequently the precondition to any urban theory and design. The prevailing structure, once functions become obsolete, is the form and its relation to space and time, bestowing a particular quality on the urban artifact, 'which is principally a function of its placement, its unfolding of a precise action, and its individuality'.<sup>98</sup> These qualitative singularities are acquired during a historical process of formation, when historical moments impress certain characteristics on the form of an artifact.

I repeat that the reality I am concerned with here is that of the architecture of the city—that is, its form, which seems to summarize the total character of urban artifacts, including their origin. Moreover, a description of form takes into account all of the empirical facts we have already alluded to and can be quantified through rigorous observation. This is in part what we mean by urban morphology: a description of the forms of an urban artifact. On the other hand, this description is nothing but a moment, one instrument. It draws us closer to a knowledge of structure, but it is not identical with it.<sup>99</sup>

The urban artifact is therefore more than its physical form and material, and while this relates architectural typology to urban morphology, the singularity of the urban artifact consists within time and space as a multiplicity of functions.<sup>100</sup> Presence, architecture's impression and experience as a reality, is equally significant to the knowledge of an urban artifact. The parallel social structure of urban artifacts shifts their significance to a quality of uniqueness, which is comparable to that characterising a work of art. Urban artifacts are constructed by material, but at the same time more than an artwork: 'although they are conditioned, they also condition'.<sup>101</sup> The urban artifact has a collective life and is a product

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<sup>97</sup> Rossi, *The Architecture of the City*, p. 118.

<sup>98</sup> Rossi, *The Architecture of the City*, p. 87.

<sup>99</sup> Rossi, *The Architecture of the City*, p. 32.

<sup>100</sup> Compare Rossi, 'Comment on the German Edition', in *The Architecture of the City*, p. 179.

<sup>101</sup> Rossi, *The Architecture of the City*, p. 32.

of the public, unlike the work of art, which is individual and a product *for* the public. From this arises a conceptual ambiguity of the urban artifact as having two complementary and contradictory dimensions, one that establishes it as a rational object of singularity and another that claims it as a humanist subject of the collective.

Although urban artifacts and artworks have analysable structural values, they are difficult to define, as this, according to Rossi, depends on the ambiguity of language. Yet, he thinks it possible to determine a general 'logical geography' based on the concept of *manufacture*. Denoting a city constructed by labour, *manufacture* provides the rational means to descriptive classification, enabling one to 'define and classify a street, a city, a street in the city; then the location of this street, its function, its architecture; then the street systems possible in the city and many other things'.<sup>102</sup> *Manufacture* supports the proposition that descriptive classification, and therefore typology, is important to urban sciences by linking urban elements to the urban totality, which as a manufactured series of facts represent the human condition and history. 'Hence, the relationship between place and man and the work of art—which is the ultimate, decisive fact shaping and directing urban evolution according to an aesthetic finality—affords us a complex mode of studying the city.'<sup>103</sup>

Based on this concept of *manufacture*, Rossi proposes type as the deep structure of architecture arising from a transformation of the environment according to man's different needs and aesthetic aspirations: 'I would define the concept of type as something that is permanent and complex, a logical principle that is prior to form and that constitutes it.'<sup>104</sup> This description owes to Quatremère, whose dictionary entry 'Type' Rossi quotes at length. However, Rossi is more explicitly concerned with types efficacy to design and he interprets it, similar to Quatremère, as containing a constant structuring principle: the typical rule.<sup>105</sup> While Quatremère distinguishes the model from type, Rossi adds a distinction between model and architecture, in order to clarify the role of type in the design of architecture through models. In a text written around the same time as *The Architecture of the City*, Rossi posits that 'design takes the model into consideration, but is not founded upon it. A model can never pretend to have the dignity of form. [...] Thus while we can say that the garden city is a model, it seems more problematic to us to say that architecture is a model.'<sup>106</sup> The effect of type on architecture is displaced and enacted by the model, conferring a relative autonomy on architecture from type. This concession legitimises a

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<sup>102</sup> Rossi, *The Architecture of the City*, p. 33.

<sup>103</sup> Rossi, *The Architecture of the City*, p. 34.

<sup>104</sup> Rossi, *The Architecture of the City*, p. 40.

<sup>105</sup> Rossi further believes that Francesco Milizia (*Principj di Architettura Civile*, 1781) anticipated a definition of type by stating: 'The comfort of any building consists of three principal items: its site, its form, and the organization of its part.' Argan in 'On the Typology of Architecture' argued for a similar relation between typology and the architectural design process as the sequence of plan, structural system, and surface treatment.

<sup>106</sup> Emilio Mattioni, Gianugo Polesello, Aldo Rossi, and Luciano Semerani, "Città e territorio negli aspetti funzionali e figurativi della pianificazione continua", in *Proceedings of the X Congresso INU* (1965), cited by Olmo, 'Across the Texts', p. 97.

compromise between Quatremère's absolute concept of type and Durand's operativity of the model. While a structural concept of architecture relies on persistent types, these are communicated through models, introducing a distance that authorises the singularity of architecture. With typal rules transposed into architectural form via models, they remain normative yet formally unspecific—but at the cost of separating Quatremère's notion of type as both a structuring and socio-cultural form through a temporary division into internal typal structure and external socio-cultural formation. Regardless, type as a constant structural principle must apply to all architecture and is eventually re-unified as an event or urban phenomena, as a persistent 'image' within collective memories.<sup>107</sup> Accordingly, 'typology becomes in this way the analytical moment of architecture, and it becomes readily identifiable at the level of urban artifacts', it is the instrument mediating between architecture and city, singularity and collective, through typological reduction.<sup>108</sup>

Thus typology presents itself as the study of types of elements that cannot be further reduced, elements of a city as well as of an architecture. The question of monocentric cities or of buildings that are or are not centralized, for example, is specifically typological; no type can be identified with only one form, even if all architectural forms are reducible to types. The process of reduction is a necessary, logical operation, and it is impossible to talk about problems of form without this presupposition. In this sense, all architectural theories are also theories of typology, and in an actual design it is difficult to distinguish the two moments.<sup>109</sup>

Despite architecture's reducibility to constant types, the effect of predetermined types on architecture is ambiguous and, to an extent, architecture remains ambiguous. The transposition of constant types to architecture, Rossi argues like Argan, is conditioned by a tension between structural principles, necessities, and context: 'it reacts dialectically with technique, function, and style, as well as with both the collective character and the individual moment of the architectural artifact'.<sup>110</sup> Paraphrasing Quatremère, Rossi then asserts: 'Ultimately, we can say that type is the very idea of architecture, that which is closest to its essence. In spite of changes, it has always imposed itself on the "feelings and reason" as the principle of architecture and of the city.'<sup>111</sup> This typal idea forms a 'nucleus' receptive to both aesthetic intentions and necessity, while explicating the structural and formal transformation of architecture. With the structure of urban artifacts in Rossi's

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<sup>107</sup> This ambiguity between structure and image is evident in the reception of Rossi's concept of typologies. For example Moneo insists that Rossi's type is an image and not a structure, trying to make it consistent with his later poetical works dominated by drawings; compare 'Aldo Rossi', in *Theoretical Anxiety*, p. 104. In contrast, Aureli concludes in his study of the early Rossian theories, 'type is architecture as a *structural* and *formal* fact, that is, as a complex *experience*'; see 'The Difficult Whole', p. 41.

<sup>108</sup> Rossi, *The Architecture of the City*, p. 41.

<sup>109</sup> Rossi, *The Architecture of the City*, p. 41.

<sup>110</sup> Rossi, *The Architecture of the City*, p. 41.

<sup>111</sup> Rossi, *The Architecture of the City*, p. 41.

scheme arising from the tension of continuity and individuality, its typological analysis has to surpass a 'naïve functionalism' that reduces type to a static concept of organisation and disregards the complexity of form and urban context.<sup>112</sup> In notes for a lecture given around the same time, Rossi elaborates: 'Typology is best defined as a particular aspect of architecture, originally conditioned and modified by social-historical evolution. [...] The individualization of typology represents in architecture the reflection of reality in historical form.'<sup>113</sup> Thus, the social and historical are internal to the structure of typology, which appears in a process of perpetual repetition and variation.<sup>114</sup> In an interview published in 1997, he would repeat the double aspect of typology:

When an architect claims that typology is a rigid affair and that it does not agree with artistic freedom, then he is demonstrating his ignorance and stupidity. Typology is a technical term, which has always been used in architecture to define specific types of buildings and the various ways in which they are built. The typology of the palace is gradual, established over the course of centuries. The Renaissance palaces follow this typology, and yet Renaissance architecture is exceptionally manifold. Milizia said of the architects who have not been able to complete their work: 'They did not grasp the general idea of the work', and this according to the typology.<sup>115</sup>

Seeking to resolve the problem of description and classification, Rossi turns to the French tradition of urban geography and Enlightenment theory, as they unlike Modernist functionalism provide 'a continuous reading of the city and its architecture and have implications for a general theory of urban artifacts'.<sup>116</sup> Rossi's arguments benefit from urban geography in several ways. He is first interested in the human geography of Jean Tricart (1920–2003), who in an analysis of the city according to social content and prior to advancing a sociological study, defines the physical limits of places by proposing in *Cours de géographie humaine* (1963) an order of street, district, and city. Despite disagreeing with Tricart's premise that the character of urban artifacts changes at different scales, Rossi adopts his basic principle to study urban artifacts in relation to their place. He identifies the inhabited real estate at the street scale as a determinant of the city, defined by topographical changes and the legal right to develop the land. Describable in morphological terms, its relation to blocks and houses, the land gives a descriptive

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<sup>112</sup> Compare Rossi, *The Architecture of the City*, p. 48.

<sup>113</sup> Aldo Rossi, 'Architettura del realismo', 14, in Aldo Rossi Papers, Box 1, Folder 18, as cited by Lobsinger, 'That Obscure Object of Desire', p. 53.

<sup>114</sup> Compare Michael Hays, *Architecture's Desire: Reading the Late Avant-Garde* (Cambridge, MA: MIT Press, 2010), pp. 29–35. Hays interprets Rossi's typological idea in the thesis of the analogical city and illustrated by Canaletto's capriccios, as an epistemological claim, 'insofar as the analogue is at once a means of analysis, a method of design, and necessary prior condition for practice'.

<sup>115</sup> Aldo Rossi and Bernard Huet, 'Architecture, Furniture and Some of My Dogs', *Perspecta*, 28 (1997), Architects. Process. Inspiration, 94–113 (p. 107).

<sup>116</sup> Rossi, *The Architecture of the City*, p. 48.

classification that is not functional but geometric and topographic.<sup>117</sup> This morphological description further incorporates criteria that equal the core concerns of classification and deal with urban artifacts in accordance with '1. objective facts; 2. the influence of the real-estate structure and economic data; 3. historical-social influences'.<sup>118</sup> Adding to this the real-estate structure and economic factors registering historical-social influences, a classification by social content and socio-economic context is established. The interaction between typological form, landform, and political form structure a comprehensive formal description of the city, and reveals that architectural form, contrary to his initial declaration, is to Rossi inconceivable without a political and historical framework.<sup>119</sup>

Rossi then turns to Marcel Poëte (1866–1950) and his concept of persistence of street and plan, which he adopts as an essential thesis of permanences. Poëte in his scientific studies defines urban artifacts as constants verifiable in their details, thereby allowing conclusions towards the larger urban structure and its historical construction.<sup>120</sup> As Rossi summarises Poëte's concept of urban artifact: 'Their raison d'être is their continuity: while geographic, economic, and statistical information must also be taken into consideration along with historical facts, it is knowledge of the past that constitutes the terms of the present and the measure of the future.'<sup>121</sup> Critical to Poëte's notion of the geographic region are the morphology of streets and the persistence of monuments and plans, which regulate the continuity of development and its direction of growth. They provide a 'certain constancy of themes, and this constancy assures a relative unity to the urban expression'.<sup>122</sup> Supporting this position, Georges Chabot establishes the city as a totality that can be analysed through the behaviour of its fragments.<sup>123</sup> Similarly, Pierre Lavedan advances a concept of persistence as the generator of plans, from which the transformation of the urban and its urban artifacts can be understood.<sup>124</sup> Based on these complementary concepts of persistence, Rossi declares that urban artifacts are alive, with 'propelling' permanences maintaining an influence on the city through their vital form and relation to the *locus*. Given that the qualities of permanences and monuments are often indistinguishable, Rossi understands them as sharing the 'capacity to constitute the city, its history and art, its being

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<sup>117</sup> Compare Rossi, *The Architecture of the City*, p. 49.

<sup>118</sup> Rossi, *The Architecture of the City*, p. 49.

<sup>119</sup> 'When this analysis of social content is applied with particular attention to urban topography, it becomes capable of providing us with a fairly complete knowledge of the city; such an analysis proceeds by means of successive syntheses, causing certain elementary facts to come to light which ultimately encompass more general facts. In addition, through the analysis of social content, the formal aspects of urban artifacts take on a reasonably convincing interpretations, and a number themes emerge that play an important role in the urban structure.' Rossi, *The Architecture of the City*, p. 50.

<sup>120</sup> See Poëte's *Introduction à l'urbanisme* (1929) and *Une vie de cite: Paris de sa naissance à nos jours* (1924–31).

<sup>121</sup> Rossi, *The Architecture of the City*, pp. 50–51.

<sup>122</sup> Rossi, *The Architecture of the City*, p. 51.

<sup>123</sup> Rossi refers to Chabot's *Les Villes: aperçu de géographie humaine* (1948).

<sup>124</sup> See Lavedan's *Géographie des villes* (1936), *Histoire de l'urbanisme*, (1926–52) and *Les villes françaises* (1960).

and memory'.<sup>125</sup> However, since permanences are clarified by an isolated historical analysis often requiring a limited reading of historical periods, it is necessary for urban sciences to challenge this restriction and to consider broader historical terms and serial developments.

Subsequently turning to a discussion of eighteenth-century Enlightenment theories, Rossi identifies three central arguments that he incorporates into *The Architecture of the City*. First, that architectural principles 'could be developed from logical bases, in a certain sense independently of design; therefore the treatise took shape as a series of propositions derived serially from one another'.<sup>126</sup> Correspondingly, Rossi understands practice and theory as independent, but rationally connected by serial developments of relational structures, which are either defined by architectural or argumentative facts. Second, that any element is conceived as 'part of a system, the system of the city, therefore it was the city that conferred criteria of necessity and reality on single buildings'.<sup>127</sup> Rossi likewise refers to a 'city of parts' in which singular urban artifacts make up the totality of the city. Third, that form is distinguished as 'the final manifestation of structure, from the analytical aspect of structure; thus form had a "classical" persistence of its own which could not be reduced to the logic of the moment'.<sup>128</sup> The principle of persistence is analogous to Rossi's notion of permanences and an invariant typological theme that structures form, although only dialectically responding to context and history. This connects the third to the second argument, as the construction of the parts and the city has permanence that is not only relevant to the present but also the future city.

Especially Milizia's theory is significant to Rossi, and symptomatic for the neoclassical realisation of content in architecture and a rise of civil rationalism. Rossi implements Milizia's differentiated classification according to relationships that establish a 'general idea of the city' without being reducible to function, organisation, or form, instead deriving from a distinction between private and public, between the different qualities of housing in the residential area and individual or institutional buildings, which Milizia terms 'principal elements'. Milizia's urban classification is premised on character rather than genre, which Rossi reads as a correlation between urban morphology and building typology, as formal expressions occurring at different but complementary scales. Milizia expresses these relationships in a simple statement that Rossi repeats several times: 'to speak of a beautiful

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<sup>125</sup> Rossi, *The Architecture of the City*, p. 60.

<sup>126</sup> Rossi, *The Architecture of the City*, pp. 52–53.

<sup>127</sup> Rossi, *The Architecture of the City*, p. 53. This common neoclassical point of view is evident in Durand's *Précis*, but also in Quatremère's architectural dictionary. As Helen Rosenau observes, Quatremère recognises in the entry 'Ville' the importance of planning to a much larger extent than Diderot and emphasises the significance of architecture to the formation of the city; see 'Neo-classicism and Quatremère de Quincy', in *The Ideal City: Its Architectural Evolution in Europe* (London: Methuen, 1983), pp. 135–49.

<sup>128</sup> Rossi, *The Architecture of the City*, p. 53.

city is also to speak of good architecture'.<sup>129</sup> As Rossi suggests, Milizia's modernity is evident in his recognition of the city as a collective complex composed by different purposive structural elements, which is analysable through a typological reduction but remains independent in its typological formation. Thus Milizia, and by extension Rossi, is able to claim that the individuality inherent to the process of architectural composition is maintained despite recourse to typology. This confirms architecture as a man-made fact insufficiently explained by abstract organisation or metaphors of natural organicity that functionalist classification disseminates, requiring in its place a different structural analysis.

Such classifications presuppose that all urban artifacts are created to serve particular functions in a static way and that their structure precisely coincides with the function they perform at a certain moment. I maintain, on the contrary, that the city is something that persists through its transformations, and that the complex or simple transformation of functions that it gradually undergoes are moments in the reality of its structure. Function here is meant only in the sense of complex relationships between many orders of facts. I reject linear interpretations of cause and effect because they are belied by reality itself. This interpretation certainly differs from that of 'use' or of 'functional organization'.<sup>130</sup>

Having defined the principles of his urban science, Rossi proceeds with a specific analysis of the structure of the city based on his theory of urban artifacts.<sup>131</sup> While for this analysis the temporality of urban development and the role of primary elements are significant, it is the assumption that 'all those elements which we find in a certain region or within a certain urban area are artifacts of a homogeneous nature, without discontinuities' that legitimises Rossi's claim of an isolated geographic area providing knowledge of the larger region.<sup>132</sup> The predominantly spatial continuities, however, do not imply a uniform or singular idea of the city. To the contrary, they are fundamental and formal characteristics structuring the formation of distinctly different areas. This underscores the importance of continuities to the analysis of historical moments and their effect on the city by offering a means of comparison and a definition of permanences.

The analysis takes place in a study area, often a vertical slice (*recinto*), which is clearly defined against the urban totality and its larger elements, for example, streets that through spatial, topographic, historical, and sociological differences determine the limits of comparison.<sup>133</sup> In general terms, the study area is 'a concept that takes in a series of

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<sup>129</sup> Rossi citing Milizia's *Principj di Architettura Civile* (1781) in *The Architecture of the City*, p. 53. He however also acknowledges that this conception of the city, unlike that of the Gothic city, does not allow for the uniqueness of urban artifacts creating uniformity—as already indicated by Voltaire.

<sup>130</sup> Rossi, *The Architecture of the City*, pp. 54–55.

<sup>131</sup> 'The city will be seen as an architecture of different parts or components, these being principally the *dwelling* and *primary elements*.' Rossi, *The Architecture of the City*, p. 61.

<sup>132</sup> Rossi, *The Architecture of the City*, p. 63.

<sup>133</sup> Rossi, *The Architecture of the City*, p. 63.

spatial and social factors which act as determining influences on the inhabitants of a sufficiently circumscribed cultural and geographical area' and constitutes 'a particular moment in the study of the city and as such gives rise to a true and proper urban ecology, which is a necessary prerequisite for studies of the city'.<sup>134</sup> Although the study area allows comprehensive knowledge of an elementary part of the city, and an indirect analysis of urban artifacts and the larger urban form, Rossi posits that the unity of the city is conditional to a historical process in which the memory of the city is formed. The unity demands a specificity of design that is only achievable in urban interventions limited to a part of the city, in which they can be completely resolved in plan and, significantly, also in their three-dimensionality.<sup>135</sup> The architect therefore restricts considerations of the larger region to general development plans.

However, the historical process points to a problematic argument that Rossi shares with many postmodern theories. With the rediscovery of history, the present and future become an extension of the past, thus by definition limited. This presumes that only historical form has relevance and that the modern city lacks unity. This position is both typologically and historically untenable. From a typological perspective, material form is only one criterion amongst many, as Quatremère's theory of type argued. In addition, material is irrelevant to the continuity of form, as Semper demonstrated. The reduction of history to formal continuity is an oversimplification that restricts the meaning of type. Based on the Italian and central European historical city, the identified problems and observations are limited and cannot be generalised.<sup>136</sup> The continuity of type, or rather typal motives, is non-linear and requires, as Semper argued, a disintegration of tradition and therefore the demolition of historical material form.

With spatial and social factors key to the definition of a study area, the residential district is its logical extension. As evident in Tricart or Fritz Schumacher's theories, the city is here

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<sup>134</sup> In regards to urban morphology, 'the study area would include all of those urban areas that have a physical and social homogeneity', with homogeneity often defined in typological terms. Rossi, *The Architecture of the City*, pp. 64–65.

<sup>135</sup> This argument was developed by Rossi with Gianugo Polesello, Emilio Mattioni, and Luciano Semerani. 'The spatial and formal aspects of the territory can be located in the global plan only with difficulty, because the action of totally remodelling the territory becomes abstracting and demiurgical. The spatial and formal aspects emerge more clearly in specific plans and have their own dimension in the sectoral plans...: it is typical of the sectoral plan and the intervention plan to propose physical modifications of the field.' In 'Città e territorio negli aspetti funzionale e figurative della pianificazione continua', in *Atti del X convegno dell'Istituto Nazionale di Urbanistica* (Trieste: INU, 1965), p. 290, as cited by Olmo, 'Across the Texts', p. 97. Rossi refers to a comparable argument by Aymonino in 'Analisi delle relazioni tra i servizi e le attrezzature': 'with "the end of the system of horizontal usage [zoning provisions], and with purely volumetric-quantitative building utilization [standards and regulations], the architectural section... becomes one of the governing images, the generating nucleus of the entire composition.'" In *The Architecture of the City*, p. 118.

<sup>136</sup> Rossi's preoccupation with the historical city is still evident in later texts such as 'Architettura e città: passato e presente' (1972); trans. as 'Architecture and City: Past and Present' in *Aldo Rossi: Selected Writings and Projects*, pp. 48–53.

predominantly understood as made up by parts and by its social content.<sup>137</sup> The residential district is so delimited by urban landscape, social content, and function, but also economic factors. Being vital to urban development, the residential district is responsive and anticipates changes to the urban structure, forms to an extent a city within the city. As such, it questions functional zoning indifferent to the specificity and synthesis of urban parts, which are essential manifestations of particular urban life and situations.<sup>138</sup> The city, as Hugo Hassinger's urban geography of Vienna (1910) or Kevin Lynch's study of hierarchical 'imageability' in *The Image of the City* (1960) conveys, is defined by *characteristic parts*: centres, primary elements, and a polynodal network of relations that exist between different centres and peripheries. Rossi inspired by, but also critical of, Lynch, emphasises the structural architecture of the city rather than its image.<sup>139</sup> His idea of the city as architecture suggests that its parts are distinct urban artifacts whose singularity is unexplainable solely by imageability.

Important parts of the city are dwelling areas. With social and economic patterns, especially capitalist speculation, converging, they are an essential force in urban formation and growth. 'The form in which residential building types are realized, the typological aspect that characterizes them, is closely bound up with the urban form, and the house, which materially represents a people's way of life, the precise manifestation of a culture, is modified very slowly.'<sup>140</sup> As housing is often the most typical urban artifact and its morphological and structural components relatively permanent, it is emblematic of the city. To support this argument, Rossi studies the range and transformation of housing typologies in Berlin, its blocks, semi-detached, and detached houses, and their impact on a changing urban morphology, with the nineteenth-century *Mietskasernen* displacing Gothic and seventeenth-century houses, which are themselves replaced by the *Siedlungen* of rationalist architecture in the 1920s. However, Rossi has to admit that these typological innovations did not affect architecture in spite of synthesising past and modern housing models. The architecture of the *Siedlung* remained truthful to the established models of the English Garden City and Le Corbusier's Ville Radieuse, even assuming their social and political theory. Although emblematic, the dwelling area is thus only a partial structure of the city and for a comprehensive understanding of urban formation need to be supplemented by the analysis of primary elements: 'The union of these primary elements with an area, in terms of location and construction, permanence of plan and permanence of building, natural artifacts and constructed artifacts, constitutes a whole which is the physical structure of the city.'<sup>141</sup> The relationship between primary elements, defined by

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<sup>137</sup> Rossi identifies a concept of a city and its parts in Fritz Schumacher's plans for Cologne (1921) and Hamburg (1930).

<sup>138</sup> Rossi in particular objects to the zoning schematic developed by Robert Park and Ernest Burgess for Chicago (1923).

<sup>139</sup> As Paolo Ceccarelli claims in an interview with Aureli, Rossi's title for *The Architecture of the City* was inspired by Lynch's book; see, *The Project of Autonomy*, p. 87, n. 88.

<sup>140</sup> Rossi, *The Architecture of the City*, p. 70.

<sup>141</sup> Rossi, *The Architecture of the City*, p. 86.

their form, and dwelling area, shaped by the land, is comparable to a sociological distinction between public and private spheres and their formative roles for urbanity.<sup>142</sup> Yet, the private residential area requires for its functioning public amenities and infrastructures, thus relies on primary elements that represent the necessary public, urban, and collective permanences. Primary elements, which include monuments, fixed activities, and events, form a fundamental relationship between urban artifact and architecture. They are catalysts accelerating and characterising spatial transformation. This dynamic unfolds with urban growth, whereby monumental or historical structures are transformed in their relation and function to the city, as in the case of the amphitheatre in Nîmes, the Vila Viçosa in Portugal or the abbacy of Saint-Germain-des-Prés in Paris.<sup>143</sup> Throughout these transformations—which are often but not necessarily coupled with functional changes—the form of primary elements persist and become significant on their own account, gaining a different meaning as formal and political individuation. ‘Thus, when primary elements assume the value of monuments either because of their intrinsic value or because of their particular historical situation, it is possible to relate this fact precisely to the history and the life of the city.’<sup>144</sup> With primary elements concretised by their form and characterising the idea and structure of a city at certain moments, even—or especially—a *plan* can therefore be considered a primary element and architecture.<sup>145</sup> The plan is thus understood less fixed than diagrammatically representative of a state of development, and its premise of modifiability is fundamental to any urban operation as well as an indicative quality of primary elements.

While a morphological study of the city reveals urban development by relating primary elements and urban artifacts to their area and history in formal terms, Rossi concedes that architecture as a human creation is most importantly defined by its presence, construction, and history. The vitality of history, which is indirectly expressed by collective memory, necessitates an essentially humanist dynamic between city, architecture, and society: ‘*Urban artifacts have their own life, their own destiny.*’<sup>146</sup> This brings Rossi to Claude Lévi-Strauss’s qualitative notion of space, which demands a concept of quality in urban artifacts and supports an urban psychology already outlined by Lynch. Based on it Rossi re-establishes the humanist unity between subject and object that he questioned at the beginning of the book and puts man and his desires at the centre of his reading of the city. ‘To conclude, I wish to emphasize the *quality* and *destiny* which distinguish monuments, in the geographical sense, from primary elements. With these two parameters as guides, studies on both the behavior of human groups and the individual in the city can be much enriched.’<sup>147</sup>

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<sup>142</sup> Rossi owes this interrelation between public and private sphere and its relation to urbanity to Hans Paul Bahrdt’s *Die moderne Großstadt* (1961), which he cites in *The Architecture of the City*, p. 86.

<sup>143</sup> Rossi further elaborates the transformation of primary elements in *The Architecture of the City*, p. 92.

<sup>144</sup> Rossi, *The Architecture of the City*, p. 100.

<sup>145</sup> Rossi owes his understanding of the plan as architecture to Lavedan’s *Géographie des villes* (1936). Compare Rossi, *The Architecture of the City*, p. 100.

<sup>146</sup> Rossi, *The Architecture of the City*, p. 101.

<sup>147</sup> Rossi, *The Architecture of the City*, p. 101.

In the second chapter of *The Architecture of the City*, Rossi concludes his 'analytical method' that closely resembles Durand's formalist analysis and belief in the public and private utility of architecture. Like Durand, who established a system of elements from which both architecture and city are constructible—with his method enabling a knowledge of form through the analytical-diagrammatic deconstruction and reconstruction of elements in the process of disposition—Rossi states that his method, 'presented as a theory of urban artifacts, stems from the identification of the city itself as an artifact and from its division into individual buildings and dwelling areas', in other words, from recognising a city of parts.<sup>148</sup> Rossi directly applies Durand's principle that knowledge of parts gives knowledge of the whole, while this knowledge is, as in Le Roy's case, less concerned with stylistic or historical chronology than the analysis of formal relations and morphological sequences. However there are significant differences between Durand and Rossi. While Durand propounds a functionalist classification of form, framed by a division of the city and its architecture into genres, Rossi rejects the efficacy of functionalism to formal classification and develops alternative categories based on *manufacture*, which he associates with notions of purpose and character. The disparity between a scientific and humanist rationalism is also evident in their understanding of history. Durand outlines a *natural history* in which history itself is relativised and Rossi a *collective history* that is socio-political and intimately linked to a historical and cultural process. While Durand is able to instrumentalise history in the analysis of the present and its linear projection into designs of the future through structural continuities defined by function, Rossi's displaced concept of history as formal permanences validated by collective memories is effectively directed towards the past. Architecture's future is to him foreseeable by history and formal invention limited by received types. Challenging this stability is the *locus*, which through its singularity restructures typology and demands an individuation of architectural form. Architecture's uniqueness, which according to Durand resides in the differentiation of form, is enlarged by Rossi to mean a difference of real qualities appropriate to a *locus*.

Rossi's concept of the *locus*, despite appearing under the theory of urban artifacts, can be considered a principal theory encompassing the entire history of architecture and architectural form. The *locus* relates the singularity of an urban artifact to its specific 'situation' and site, the spirit of place and classical concept of *genius loci*.<sup>149</sup> It marks the geographic singularity that constitutes architecture's uniqueness. The *locus* is a 'singular point' constructed by space and time and a spatial signification of events that embody the collective cultural history and the social and political discourse expressed by typicality.<sup>150</sup> In Focillon terms, this denotes a 'psychological place' formed by art as a landscape, which

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<sup>148</sup> Rossi, *The Architecture of the City*, pp. 20–21. Compare to Durand's statement in the *Précis*: 'Just as the walls, columns, &c., are the element which compose buildings, so buildings are the elements which compose cities.' As cited by Rossi in *The Architecture of the City*, p. 35.

<sup>149</sup> Rossi sees in particular Palladio's villas as an example of an architecture conditioned by its 'situation', but also refers to Milizia, and Viollet-le-Duc,

<sup>150</sup> Rossi owes his understanding of 'singular points' to Maximilien Sorre. I refer to 'typicalities' as used by Carl in 'Type, Field, Culture, Praxis', pp. 38–45.

alters the understanding and reality of the past by making transformation possible.<sup>151</sup> According to Rossi's interpretation of Focillon, 'the building, the monument, and the city become human things par excellence; and as such, they are profoundly linked to an original occurrence, to a first sign, to composition, permanence, and evolution, and to both chance and tradition'.<sup>152</sup> With the event and the marking of the event by architecture composing the structure of *locus*, history in this sense defines the singularity of architecture.

Thus, the close relationship that once was present between forms and elements proposes itself again as a necessary origin; and so while on the one hand architecture addresses its own circumscribed domain, its elements and its ideals, on the other it tends to become identified with an artifact, and the separation which occurred at its origin and which permitted it to develop autonomously no longer is recognizable.<sup>153</sup>

However, only when architecture is confronted with its realisation and urban history, does the ambiguous relationship of its autonomy to the social emerge. While architecture's principal formation can be said to be autonomous, its subsequent development is oriented towards and modified by the social. The *locus* then becomes a substitute of architecture's autonomy or the moment of its displacement. This explains Rossi's interest in Focillon's notion of place and Loos's concept of the tomb and monument as the only architecture belonging to the arts, as they support his argument that monuments illustrate architecture's resistance to the displacement of their autonomy by becoming a permanent work of art.<sup>154</sup> A monument is signified by nothing other than itself, by its self-determined autonomy, and has permanence independent of its function. Whereas functional architecture is commonly modified over time, the monument is receptive to functional transformation. In fact, functional redundancy strengthens the uniqueness of its architectural form, and in comparison to temporary function it becomes legible as permanent. Thus, the permanence of architecture is indebted to the historical process, and monuments act as the main record of urban history. While context implies to Rossi a literal preservation of history as an image, he believes it necessary to consider a spatial and formal continuity informed by the character of *locus*, which suggests that monuments should be preserved as total and complex urban artifacts.<sup>155</sup>

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<sup>151</sup> Focillon asks in *The Life of Forms in Art* (1939): 'But is not the essential attribute of any environment that of producing, of shaping the past according to its own needs?' As cited by Rossi in *The Architecture of the City*, p. 106.

<sup>152</sup> Rossi, *The Architecture of the City*, p. 106.

<sup>153</sup> Rossi, *The Architecture of the City*, p. 107.

<sup>154</sup> As Rossi writes in regards to Loos: 'The mound six feet long and three feet wide is an extremely intense and pure architecture precisely because it is identifiable in the artifact. It is only in the history of architecture that the separation between the original element and its various forms occurred.' *The Architecture of the City*, p. 107.

<sup>155</sup> The Roman Forum is to Rossi exemplary of this dialectic between permanence and historical transformation, as the change from a marketplace to a square led to its clarification as a public urban space

Rossi's attempt to generalise his argument of formal permanences by applying it to all urban artifacts, however fails to convincingly eliminate the problem of function, as his examples are primary elements of the preindustrial city either that are effectively perceived as monuments—are buildings without a conventional function—or housing areas, in which function is commonly unchallenged. But especially in the industrial and post-industrial city, the form and modification of infrastructures, institutions, housing, and amenities according to functional organisation and economics is evident, making it impossible to deny that economic and political functions often overcome formal restrictions and significantly determine the urban development and character. For example, the typological innovations that Rossi describes in Berlin as leading to the city's morphological transformation, are equally explained by socio-political changes and functional organisation implemented by planning instruments. A similar argument can be made for Haussmann's renovation of Paris in the second half of the nineteenth century, or Cerdà's extension plan for Barcelona in 1859. Even though Rossi when discussing the evolution of urban artifacts admits that economic and political forces dominate urban transformation and are linked to planning, particularly evident in the phenomena of expropriation, he believes that these produce plans that are urban artifacts themselves. He therefore maintains that the historical and modern city is qualitatively and structurally indistinguishable by considering them as man-made objects, and that cities with predominantly modern artifacts are untypical. In fact, Rossi objects to the 'romantic socialist' assumption that the growth caused by the Industrial Revolution created a new urban problem of large cities, arguing for a 'continuity of urban problems', which is proven by the fact that in some large industrial cities, such as London, Paris, Milan, and Turin, either urban problems pre-existed or the problem of industry never occurred.<sup>156</sup> This denies that changing modes of production, which are unexplainable by continuities, radically modify the idea and construction of the city. Yet the Renaissance, Gothic, or Modernist idea and form of the city and their quality of space, is fundamentally different from the classical city that Rossi desires. Indeed, the traditional European city evoked by Rossi no longer exists and his reading refers to the European post-war city.<sup>157</sup> While the fact that any city consists of architectural artifacts and that their design is necessarily bound to disciplinary principles permits their comparison, it does not validate the formal continuity or serial development insisted on by Rossi. As such, his position is a paradoxical denial of history.

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that transcends functional organisation. The Forum is a unique collective form containing a persistent classical idea of form and, unlike urban design, is unexplained in terms of 'context' if understood as a continuity of functional relations but concretised by the analysable reality of architecture and its relationship to the *locus*—and thus the city.

<sup>156</sup> Compare Rossi, *The Architecture of the City*, p. 154.

<sup>157</sup> Compare Michael Hays, 'Prolegomenon for a Study Linking the Advanced Architecture of the Present to That of the 1970s through Ideologies of Media, the Experience of Cities in Transition, and the Ongoing Effects of Reification', *Perspecta*, 32 (2001), Resurfacing Modernism, 100–107 (p. 102). Yet Hays justifies this contradiction by arguing that Rossi consciously thematises the vanished European city as a loss in his original thesis that announces the end of an avant-garde.

Semper, for example, realised that the Romans replaced tectonic with stereotomic construction, affirming the extraneous nature of formal and material permanence to tupal continuities. The study of *techné* was therefore critical to reveal the specificity of *material transformation* by clarifying the continuity or discontinuity of tupal motives. Semper presents an obvious methodological precedence unknown to Rossi. In addition, when Rossi alludes to the importance of technics, stating that ‘the principal moment of an architectural artifact is in its technical and artistic formation, that is, in the autonomous principles according to which it is founded and transmitted’, like Quatremère and Semper, he refers to the disciplinary means and principles that give coherence and limits to individual works of art.<sup>158</sup> However, Rossi then cites Durand and adopts his argument that architecture by being technical and fulfilling utility gives pleasure.<sup>159</sup> This is significant as Durand himself contested the importance of pleasure to architecture, only accepting it as a minor affect subsumed by the principle of utility and, by implication, functionalism. Rossi’s reliance on Durand reveals a recurrent source of contradiction. Enticed by Durand’s methodological clarity and instrumentalisation of form—which contrasts with Quatremère’s unwillingness to explicate design and formal problems—Rossi misinterprets Durand’s comparative method as a historical method and his genres as illustrating a self-determined autonomy of types. He is therefore confronted with the deficiencies of this ‘typological’ method and analysis, which is most apparent in the functionalist aberration he despises. Rossi is unable to recognise that Durand’s reduction of function to geometry underlies functionalism by merging them in a formal organisation to which function is assigned. Indebted to Durand’s means of analysis, Rossi’s definition of type and typological efficacy throughout *The Architecture of the City* consequently remains inconsistent and self-referential in formal terms, requiring him to increasingly rely on the social content of French urban geography to enable a complementary analytic of material. This reveals a limitation of Rossi’s morphological method, borrowed from Durand, as requiring a complementary tupal analysis, which consistent with Quatremère and Semper’s theories is incomplete without a social and cultural reading of form.

Discussing urban geography, Rossi develops what he terms ‘architecture as science’. Urban geography as anticipated by Viollet-le-Duc, generally identifies typological constants, particularly in housing, which as formative elements of the city are meant to explain urban formation. This synthesis of architecture and city profoundly recognises the structure of the city as a human artifact. Architecture as a science accordingly defines structure both as a material reality and shaped by collective events and individual actions that are formative to the city. The study of the city, understood as formed by a complex unity with its parts and

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<sup>158</sup> Rossi, *The Architecture of the City*, p. 127. He similarly claims that: ‘Intelligence and technique (example and practice) are what makes *making* possible, the outcome is the liberation of the personal element.’ The ‘Architecture for Museums’, p. 24.

<sup>159</sup> ‘We are far from thinking that architecture cannot please; we say on the contrary that it is impossible for it not to please, so long it is treated according to its true principles [...] an art such as architecture, an art which immediately satisfies such a large number of our needs [...] how could it fail to please us?’ Durand, *Précis*, as cited by Rossi, *The Architecture of the City*, p. 127.

the historical process, therefore leads to knowledge of the collective nature and individual choices defining urban artifacts. The relation between collective and individual will in architecture 'is unique with respect to the other technics and arts. In fact, architecture presents itself as a vast cultural movement: it is discussed and criticized well beyond the narrow circle of its specialists; it needs to be realized, to become part of the city, to become "the city"'.<sup>160</sup> Pre-existing as an autonomous structure, when architecture is realised it forfeits its autonomy and becomes defined by the *locus*. Then it engages with the specific meaning, reason, and history through choices given by architectural style. At this moment, architecture takes on a different universality and is less disciplinary than cultural, establishing an urban science premised on relational structures.

The world of architecture can be seen to unfold and be studied as a logical succession of principles and forms more or less autonomous from the reality of *locus* and history. Thus, architecture implies the city; but this city may be an ideal city, of perfect and harmonious relationships, where the architecture develops and constructs its own terms of reference. At the same time, the actual architecture of this city is unique; from the very first it has a characteristic—and ambiguous—relationship that no other art or science possesses. In these terms we can understand the constant polemical urge of architects to design systems in which the spatial order becomes the order of society and attempts to transform society.<sup>161</sup>

The ambiguity of architecture is partially resolved by its synthesis with the *locus* and a collective social, of which it becomes the material symbol: 'An interpretation of symbolic architecture in these terms can inform all architecture; it creates an association between the event and its sign.'<sup>162</sup> Indicating the possibility of choice in collective and individual terms, it means that urban artifacts now 'constitute forms rather than continue them', and necessitate a 'total vision of analysis and design'.<sup>163</sup> But choice, although specific to a 'certain reality', remains limited to received architectural elements and forms, as explained in 'Architecture for Museums': 'Choice in architecture presumes a fixed terminology, some specified elements, that constitute an objective argument; Roman monuments, Renaissance Palazzi, Gothic cathedrals, constitute architecture and are part of its construction. As such they will not come back as history and memory, but as elements of design.'<sup>164</sup> Architectural theory, history, and design thus constitute 'a system where the world of form is as logically clear as any other architectural notion, by considering this as meaning as transmittable in architecture as in any other form of thought'.<sup>165</sup>

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<sup>160</sup> Rossi, *The Architecture of the City*, p. 113.

<sup>161</sup> Rossi, *The Architecture of the City*, p. 113.

<sup>162</sup> Rossi, *The Architecture of the City*, p. 115.

<sup>163</sup> Rossi, *The Architecture of the City*, p. 118.

<sup>164</sup> Rossi, 'Architecture for Museums', p. 21.

<sup>165</sup> Rossi, 'Architecture for Museums', p. 25.

Having discussed the structure, character, and design of urban artifacts, Rossi contemplates their evolution. He claims that cities completely change every fifty years and that the forces of transformation can be isolated for analysis. Commonly the transformative forces of the capitalist city are explained by planning and controlled by economics. Rossi revisits the economic studies by Halbwachs on expropriation and Hans Bernoulli on land ownership. Halbwachs when studying expropriation realised that economic factors have general characteristics regardless of scale and context, but entirely depend on social and physical context in their actual effect on urban districts.<sup>166</sup> Socio-economic urban transformations are consequently driven either by a historical sequence by which a series of urban artifacts appear or by the actions of individuals. The three essential hypotheses by Halbwachs are summarised by Rossi as a connection between 'economic factors and the design of the city', the effect of individuals on urban transformations, and the 'urban evolution as a complex fact of social order which tends to occur according to highly precise laws and orientations of growth'.<sup>167</sup> To this Rossi adds expropriation itself, which is an urban phenomenon consolidating important moments in the evolution of a city. Expropriation promotes already existing economic tendencies and urban social movements by forcing what appears as abrupt spatial changes but, Rossi and Halbwachs believe, is the necessary means to adjust the physical urban structure to current economic dynamics and growth patterns, linking past to future urban development. The development, even if not entirely realised, is commonly captured in important urban plans, such as the ones by the Commission of Artists and Haussmann for Paris, the Napoleonic Plan for Milan, and Cerdà's Eixample for Barcelona.

Closely related to Halbwachs's study of expropriation is the thesis of land ownership in *Die Stadt und ihr Boden* (1946) by Hans Bernoulli. He identifies private property ownership and the inevitable parcellation of land as detrimental to urban development. Attributable to the division of large property holdings by the state, nobility, and clergy following the French Revolution, land was privatised and became subject to speculation. As a result, communities lost control over urban development. Repudiating Bernoulli and siding with Halbwachs, Rossi contends that the privatisation and subdivision of land was vital for the evolution of Western capitalist economies, only varying in its response to political context and choices. The financial law of 1808 in Berlin, owing to Adam Smith, showed: 'These phenomena had to do, in sum with the working out of a general law to which all bourgeois states were subject, and as such it was positive.'<sup>168</sup> Rossi then formulates an important critique. Unlike Bernoulli's romantic and socialist analysis of industrialisation suggests, this did not create a new urban problem, but was a general condition of bourgeois society applicable to all cities regardless of their scale. To Rossi this thesis is supported by Friedrich Engels in his articles 'Zur Wohnungsfrage' (1872–73), who states that

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<sup>166</sup> See Halbwachs's doctoral dissertation *Les Expropriations et le prix des terrains à Paris: 1860–1900* of 1909 and its enlarged study in *La population et les tracés de voies à Paris depuis un siècle* of 1928.

<sup>167</sup> Rossi, *The Architecture of the City*, pp. 143–44.

<sup>168</sup> Rossi, *The Architecture of the City*, p. 154.

industrialisation only exacerbated an already existing housing predicament affecting all oppressed classes throughout history. As Rossi concludes, 'Engels also rejects the notion that the phenomenon of industrialism is necessarily bound up with urbanism; in fact, he declares that to think that spatial initiatives can affect the industrial process is a pure abstraction, and practically speaking a reactionary point of view'.<sup>169</sup>

This however distorts Engels's argument. Despite ultimately believing in a political solution and objecting to a technical answer to social problems—rejecting Pierre-Joseph Proudhon's view of industrialisation and demand that the working class should be given individual ownership of their housing as reactionary—he suggested that expropriation and the abolition of differences between town and country, and capitalism and wage labour, would provide a temporary solution to the housing crisis. While to Engels the problems have a socio-political and economic origin, Rossi writes: 'Ultimately, however, behind and beyond economic forces and conditions lies the problem of choices; and these choices, which are political in nature, can only be understood in light of the total structure of urban artifacts.'<sup>170</sup> Therefore, to understand urban transformations as caused by industrialisation and the increasing separation of living and working in cities by changes of function, modes of production, and transportation is to Rossi only partially true, 'it has its most evident limitations in its description of artifacts, lapsing into a sort of "naturalism" of the urban dynamic whereby the actions of men, the constitution of urban artifacts, and the political choices that the city makes are all assumed to be involuntary'.<sup>171</sup> This assumption, so Rossi, is contradicted by Engels's definition of the housing problem and by the question of a 'new urban scale'. Both establish continuities and argue that 'there is ultimately a relationship between any single architectural project and the destiny of the city', which is not 'utopian or abstract but evolves from the specific problems of the city', forming a collective artifact between the city and its architecture.<sup>172</sup> While the increased size and notion of *megalopolis* by Jean Gottmann raise interesting hypotheses for the study of the city-to-region relation, Rossi contests that 'this "new scale" can change the substance of an urban artifact. It is conceivable that a change in scale modifies an urban artifact in some way; but it does not change its *quality*'.<sup>173</sup> Even though dimensions increase, a scalar shift is unproductive, as the relationships of types are analogical and unaffected by size to him. Therefore, Rossi rejects planning and claims that only one qualitative scale exists: that of architecture. This analogical character of type is important and reiterated by Rossi. He sees his position confirmed by Giuseppe Samonà's proportional balance between man and spaces, and Milizia or Durand's argument that the city and its architecture are a collective and interrelated complex of comparable structures at different scales.<sup>174</sup>

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<sup>169</sup> Rossi, *The Architecture of the City*, p. 155.

<sup>170</sup> Rossi, *The Architecture of the City*, p. 141.

<sup>171</sup> Rossi, *The Architecture of the City*, p. 159.

<sup>172</sup> Rossi, 'Introduction to the First American Edition', in *The Architecture of the City*, p. 18.

<sup>173</sup> Rossi, *The Architecture of the City*, p. 160.

<sup>174</sup> Rossi refers to Samonà's 'Tavola rotonda sulle componenti urbanistiche e gli strumenti di intervento', in *La città territorio. Un esperimento didattico sul centro direzionale di Centocelle in Roma* (1964).

To reduce metropolitan problems to problems of scale means to ignore completely the existence of a science of the city, in other words to ignore the actual structure of the city and its conditions of evolution. The reading of the city I have proposed here with reference to primary elements, historically constituted urban artifacts, and areas of influence permits a study of the growth of the city in which such changes of scale do not affect the laws of development.<sup>175</sup>

As Eisenman observes in his introduction to *The Architecture of the City*, Rossi's dissolution of scale results in an ambivalent relationship between architecture and city, which is justified by disciplinary autonomy, from within architecture, and derives from external metaphors borrowed from the 'Albertian humanist relationship and a fifteenth-century conception of the object'.<sup>176</sup> Rossi remains thus unable to resolve the contentions that motivate his scientific study of the city in the beginning of the book. Namely the incapacity of planning sciences to rationally define and describe urban artifacts without taking recourse to analogical reductions, such as functionalist explanations, and the failure to overcome the constraints defined by 'the history of architecture, by sociology, or by other sciences'.<sup>177</sup> Proposing an empirical study of urban artifacts and universal structures of typology, Rossi finds himself return to social content and humanist desires. This contradiction persists in Rossi's theory and emerges as a conflict between architecture's autonomy and analogy. It appears as an incongruity between singularity and collectivity, and between typological and social contents, which contrary to Rossi's assertions are never quite synchronised with either their *locus* or his theory of urban artifacts. That is, not in the rational terms proposed, but possibly analogically. As Rafael Moneo explains, the concepts presented in *The Architecture of the City* 'are vague, imprecise, diffuse', failing to demonstrate the promised 'scientific objectivity', yet also 'enormously attractive to my generation' by looking at the relationship of architecture to the city in an entirely different way.<sup>178</sup>

The ambiguities are reiterated in Rossi's whimsical conclusion to *The Architecture of the City*, when he asserts that politics by being fundamental to the concept of the *polis* are essential to the formation of any city as a human creation, thus equating urban history and political development.<sup>179</sup> '*Politics constitutes the problem of choices*. Who ultimately chooses the image of the city if not the city itself—and always and only through its political institutions. To say that this choice is indifferent is a banal simplification of the problem.'<sup>180</sup>

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<sup>175</sup> Rossi, *The Architecture of the City*, p. 160.

<sup>176</sup> Eisenman, 'Editor's Introduction', in Rossi, *The Architecture of the City*, p. 9.

<sup>177</sup> Rossi, *The Architecture of the City*, p. 22.

<sup>178</sup> Moneo, 'Aldo Rossi', in *Theoretical Anxiety*, p. 104.

<sup>179</sup> Compare Aymonino, who claimed that his generation understood urban history in relation to political development rather than architectural history from an art-historical perspective. *Il significato della città* (2000), as referred to by Aureli, in *The Project of Autonomy*, p. 56.

<sup>180</sup> Rossi, *The Architecture of the City*, p. 162.

Cities as collective manifestations are therefore always political, however, Rossi also maintains that 'the city has as its ends itself alone, and there is nothing else to explain beyond the fact of its own presence in its own artifacts. This mode of being implies a will to exist in a specific way and to continue in that way.'<sup>181</sup> Rossi then problematically posits that the construction of the city and the effects of time are pre-empted in their analysis and outcome, despite acknowledging that the city is also unpredictable in its formation as it is shaped by individuals and the collective will. In addition, he declares a 'correct' and 'authentic' way that conforms to the idea of a city and the general laws of urban dynamics. And he makes it clear, that this idea of the city is the paradigm of the classical city, is: analogous to the ideal represented by the Greek *polis*.

### 1.2.1 THE ANALOGOUS CITY

As much as the city is a temporal-spatial phenomenon formed by permanences, its meaning is produced by historical and socio-political changes that become embedded into a collective consciousness. Inaccessible to empirical cognition, this mnemonic repository however allows Rossi the retrieval of coherence between architecture, city, and society that existed in the Greek *polis*. Confronted with the specific demands of a *locus*, the socio-political and formal aspects of an urban artifact are correlated by the composition of architecture, when type-forms obtain their reason. While this suggests a reconciliation of theory and practice, which is repeatedly acknowledged by Rossi, any methodical explanation of design practices is notably absent in *The Architecture of the City*.<sup>182</sup>

Although this book is about the architecture of the city, and considers the problems of architecture in itself and those of urban architecture taken as a whole to be intimately connected, there are certain problems of architecture which cannot be taken up here; I refer specifically to *compositional problems*. These decidedly have their own autonomy. They concern architecture as a composition, and this means, that they also concern style.<sup>183</sup>

Nevertheless, Rossi provides a definition of style in his book. Architecture at certain moments becomes a style, 'when it is capable of synthesizing the whole civil and political scope of an epoch, when it is highly rational, comprehensive, and transmissible', as exemplified by the Greeks.<sup>184</sup> Contrasting with Semper's view that typological knowledge derives from stylistic analysis, Rossi expounds that style is but a secondary synthesis and always preceded by a typological choice, despite style implying clearly defined epochs. Concerning the typological choice, Rossi writes in his translation of *Architecture: Essai sur*

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<sup>181</sup> Rossi, *The Architecture of the City*, p. 162.

<sup>182</sup> For example in Rossi's 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 169. Hans Kollhoff claims that Rossi was aware of the contradictions in his work arising from an avant-garde architectural practice and theory of urban conventionality; see 'Architettura Razionale—ein Nachruf', in *Die Idee der Stadt*, ed. by Uwe Schröder (Tübingen: Ernst Wasmuth Verlag, 2009), 1, pp. 146–71 (p. 155).

<sup>183</sup> Rossi, *The Architecture of the City*, p. 116.

<sup>184</sup> Rossi, *The Architecture of the City*, p. 116.

*l'art* of 1967, Boullée 'presents the question of character and theme as decisive; that is to say, he presents a choice that precedes the architectural project, and in doing so he necessarily presents in first place the typological aspect of architecture'.<sup>185</sup> Boullée's rational poetics, so Rossi, gave an aesthetic autonomy to the architectural project, but was at the same time constrained by a logical system and an a priori typological choice.<sup>186</sup> This explains typology as having a structural value for an underlying a constitutional choice that presides over architecture—with a lack of typological rigour signifying disorder.<sup>187</sup> That this choice is independent from the realised work is essential, reinforcing Rossi's thesis of the city as the result of collective abstract and political choices enacted by the individual factual choice in the design of architecture.<sup>188</sup>

Thus Rossi in his seminar 'Architecture for Museums' stressed the need for a design theory that rationally explains the making of architecture. 'The creation of a design theory is the first objective of an architectural school for all other types of research. A design theory is the most important and creative moment of every architecture.'<sup>189</sup> Coinciding with his own shift from theorising to practicing architecture in the late 1960s, Rossi undoubtedly felt the need to clarify the relations of design and typology.<sup>190</sup> Therefore in the second Italian edition of *The Architecture of the City* (1969) he notes: 'After I wrote the book and from the concepts I postulated in it, I outlined the hypothesis of the *analogous city*, in which I attempted to deal with theoretical questions concerning design in architecture.'<sup>191</sup> While analogy seems incompatible with his claims of architectural autonomy, Rossi insists that analogy is integral to design and the synthesis of theory with practice.

Explicating an 'analogous system' of design, he gives the example of Canaletto's three capriccios of Venice as constructing a seamless urban fiction based on three monumental projects by Palladio (Rialto Bridge, Basilica, and Palazzo Chiericati)—either unrealised or imagined in Venice. These capriccios depict a recognisable and '*analogous Venice* formed of specific elements associated with the history of both architecture and the city',

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<sup>185</sup> Aldo Rossi, 'Introduzione a Boullée', in Etienne-Louis Boullée, *Architettura: Saggio sull'arte*, trans. by Rossi (Padua: Marsilio Editori, 1967); repr. in Rossi, *Scritti scelti sull'architettura e la città, 1956–1972*, as cited by Olmo, 'Across the Texts', p. 104.

<sup>186</sup> Rossi's analysis of Boullée equipped him with three important concepts that influenced his practice of architecture: a rational and autonomous system in which culture (architecture) is an autonomous expression of the sublime, an autobiographical reading, and a metaphorical, artistic interpretation. Compare Katharina Brichetti, 'Boullées Wirkung of Rossis Theorien', in *Das Gedächtnis der Stadt: Von Boullée bis Rossi* (Dortmund: Verlag Dorothea Rohn, 2006), pp. 61–81.

<sup>187</sup> Compare Aldo Rossi, 'Due progetti' (introduzione al S. Rocco e al Gallaratese), *Lotus*, 7 (1970), pp. 62 and 64, as cited by Olmo, 'Across the Texts', p. 106.

<sup>188</sup> Compare Rossi, *The Architecture of the City*, p. 96.

<sup>189</sup> Rossi, 'Architecture for Museums', p. 15.

<sup>190</sup> Micha Bandini has identified four periods in Rossi's career with shifting interests, that of writing for *Casabella* from the mid-1950s to 60s, his editorship of 'Polis' for the publisher Marsilio in the late 60s, a concentration on projects and drawing since 1969, and a final phase defined by his international influence; see 'Aldo Rossi', pp. 105–11.

<sup>191</sup> Rossi, 'Preface to the Second Italian Edition', in *The Architecture of the City*, p. 166.

irrespective of their fictional origins.<sup>192</sup> As Rossi claims in 1969, this reveals ‘how a logical-formal operation could be translated into a design method and then into a hypothesis for a theory of architectural design in which the elements were preestablished and formally defined, but where the significance that sprung forth at the end of the operation was the authentic, unforeseen, and original meaning of the work’.<sup>193</sup> Re-discussing Canaletto’s analogous method in the essay ‘An Analogical Architecture’ (1976), Rossi adds, it ‘forms a city recognizably constructed as a locus of purely architectonic values’.<sup>194</sup> Consistent with his earlier arguments, the freedom of typological choice is mediated and realised by a historical process of design over time, in which it enters into union with the spatiotemporal urban events or images shared by a collective through its memories associated with a place, the *locus*. Typology thus exists simultaneously within architecture as an ahistorical, structural, and logical form, but also external to it as an image formed by aspects of time, history, and labour (*manufacture*). And analogy points to these contradictory layers of typology and time by corresponding the beginning and end of the design process devolved to the urban formation. Yet analogy also derives its meaning from the legibility of a necessary typological reduction and the partaking in the collective formation of an idea of the city. The typo-historical synthesis of the ‘analogous city’ represents therefore the ‘overlapping of the individual and the collective memory’, and coincides with ‘the invention that takes place within the *time* of the city’.<sup>195</sup> In other words, analogous design is an unpredictable dynamic process determined by the biographies of the city and the individuals that belong to it. Michael Hays understands Rossi’s typology as a diagrammatic mechanism embodying the conceptual thought and material reality constituting the city, which itself is a “biographical” diagram’ recording the manifold collective and individual traces.<sup>196</sup>

Thus typology is, first, a record, a trace, a presentation of those marks of events that allows them to be most fully experienced and comprehended, rendering thinkable situations otherwise given only in affective terms. And the City can be thought of as the medium or matrix in which particular types are suspended and vehiculated. Second, it is the instrument—the ‘apparatus’, Rossi calls it—that analyzes and operates on this medium and material of any city’s history.<sup>197</sup>

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<sup>192</sup> Rossi, ‘Preface to the Second Italian Edition’, in *The Architecture of the City*, p. 166.

<sup>193</sup> Rossi, ‘Preface to the Second Italian Edition’, in *The Architecture of the City*, p. 166. He rephrased the importance of analogy in a later introduction in 1978: ‘Analogy expresses itself through a process of architectural design whose elements are preexisting and formally defined, but whose true meaning is unforeseen at the beginning and unfolds only at the end of the process. Thus the meaning of the process is identified with the meaning of the city.’ Rossi, ‘Introduction to the First American Edition’, in *The Architecture of the City*, p. 18.

<sup>194</sup> Aldo Rossi, ‘An Analogical Architecture’, *Architecture and Urbanism*, 56 (1976), repr. in *Aldo Rossi: Selected Writings and Projects*, pp. 58–64 (p. 59).

<sup>195</sup> Rossi, ‘Introduction to the First American Edition’, in *The Architecture of the City*, p. 18.

<sup>196</sup> Hays, *Architecture’s Desire*, p. 40.

<sup>197</sup> Hays, *Architecture’s Desire*, p. 40.

Returning to Rossi's notion of analogy, which he explains through Canaletto's 'fiction', thus belongs to a Renaissance tradition of *ut pictura poesis*, it is worthwhile to examine its difference to Quatremère's concept of poetic fiction. Analogy is a proportional correspondence between two things permitting an easily cognised transfer of meaning. It commonly serves to explain something complex. In contrast, Quatremère's concept of fiction derives from general abstraction and allegory. Whereas analogous objects according to classical theory have comparable relations, ideas, and patterns, thus have a transparent connection, allegories are figures of rhetoric and extended metaphors in which continuous parallel meanings and systems of ideas are organically explored and become abstracted or symbolised in emblematic representation. This difference between analogy and allegory is evident in the concepts of type by Quatremère and Rossi. To Quatremère, type is an idea that is first of all not formal, but abstractly organises material—not in a functional sense, but by establishing dynamic sets of relations and meanings. Even though type conceptually pre-exists, it is sensitive to changes in context, which transforms models and ultimately architecture. Quatremère however never provides examples of this contingent typological process of transformation, only its reasons and the architectural system that defines it. Contrasting with this undefined form and design process, Rossi understands type as conveying an immutable structure that finds itself in a continuous process of formation in parallel with that of the city, with invention occurring as the gradual transformation of pre-existing material. To Rossi this is an explicit historical process oriented towards the past, thus '*the history of architecture is the material of architecture*'.<sup>198</sup>

Rossi then further emphasises typology as fundamental to design, as the typological discourse—identified by classification, architectural knowledge, and typological form—is the means to analyse the relationship between architecture, its variable models, and constant types.<sup>199</sup> This connection as, for example, in the case of the Albertian urban house, refers both to a specific and factual object in the construction of the city and a general disciplinary work that is part of the abstract classifications and meanings of typologies in architecture. The typological analysis amalgamates the processes of architecture with the construction of the city, reconciling contextually specific singularity and the collective. From this interrelationship of typology with land ownership and topography, an exchange between particular and general form arises, resulting in general typological form.

Typological form refers, then, to a form which, either as a result of its being chosen during certain periods or the implications ascribed to it, has ended up by assuming the synthetic character of a process which exactly manifests the form itself. Architectural innovations always reveal particular tendencies, but they do not constitute typological invention if we realize that typology is shaped

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<sup>198</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 170.

<sup>199</sup> Compare the Portuguese introduction to *The Architecture of the City* (1971)

only through a long process of time and possesses highly complex links with the city and society.<sup>200</sup>

For that reason, Rossi claims that although Palladio's functional transgression of classical typology depicted in the capriccios gives rise to architectural inventions, it does not alter 'immutable characteristics', which validates typology as an invariable and effective source of design. Therefore, 'the presence of *form*, of architecture, *predominates over questions of functional organization*' and typological form is 'indifferent' to the organisation of buildings.<sup>201</sup> An example of this constancy between architecture and city-form is the Diocletian's Palace, as 'Split discovered in its own typological form an entire city, and thus the building came to refer *analogically* to the form of a city'.<sup>202</sup> But this also discloses, that despite categorically discarding a naïve functionalism, Rossi resorts to a no less naïve formalism, which is evident when he provides an example that, unlike Diocletian's Palace or Palladio's architecture, is not yet recognised as a historical or historiographical monument. Suggesting that Le Corbusier's 'streets in the sky' in the Unité d'habitation represent a continuity of pre-established typology, and connect architectural with urban form, the typological analogy is incoherent. The relationship of the corridor to the edge and programmes is superficially formal and, even when accepting Rossi's thesis of functions irrelevance to typological analysis, fundamentally lack the basic urban situations or significance defining a street.<sup>203</sup> Rossi's analogy between typological form and architectural design is thus often contrived and incapable of either establishing a methodical design or clarifying the 'vagueness' of typal form, although stating that typology is 'above all an architectural language, it does not take the place of technical and social questions, but enables us to have a very clear explanation of them'.<sup>204</sup> Arguably outlining a highly individual framework of composition, the processes of transposition remain unresolved and Rossi relies on form to explain itself: 'The analogous city meant a system of relating the city to established elements from which other artifacts could be derived. At the same time, the suppression of precise boundaries in time and space allowed the design the same kind of tension that we find in memory.'<sup>205</sup> Rossi goes further to claim that in the 'analogous system designs have as much existence as constructed architecture; they are a frame of reference for all that is real'.<sup>206</sup> This proposition, as he makes clear in his article 'An Analogical Architecture', is borrowed from a definition of analogy by Carl Gustav Jung:

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<sup>200</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 171.

<sup>201</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 174.

<sup>202</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 174.

<sup>203</sup> A related observation is made by Charles Jencks, who believes that Rossi lacks an understanding of symbolism and the importance of social backgrounds in the reading of codes, and like the Modernist's 'naively perceives only the meanings he see and assumes they, and not other ones, are simply *in the building*'; *The Language of Post-Modern Architecture*, 6th edn (London: Academy Editions, 1991), p.77.

<sup>204</sup> Aldo Rossi, 'L'Habitation et la ville', *L'Architecture d'Aujourd'hui* (July–August 1974), 31, as cited by Olmo, 'Across the Texts', p. 107.

<sup>205</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 176.

<sup>206</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 176.

I have explained that 'logical' thought is what is expressed in words directed to the outside world in the form of discourse. 'Analogical' thought is sensed yet unreal, imagined yet silent; it is not a discourse but rather a meditation on themes of the past, an interior monologue. Logical thought is 'thinking in words'. Analogical thought is archaic, unexpressed, and practically inexpressible in words.<sup>207</sup>

Jung equips Rossi with a different meaning of history, not conceived as facts but as a series of affective objects that become analogically subsumed by memory or design, such as Palladio's projects in Canaletto paintings. Writing in *Man and his Symbols* (1964), Jung declared: 'The individual is the only reality. The further we move away from the individual toward abstract ideas about homo sapiens, the more likely we are to fall into error.'<sup>208</sup> Rossi similarly sees his work owing to recurring dreamlike 'associations, correspondences, and analogies', and regards 'the object, the product, the project, as being endowed with its own individuality that is related to the theme of human and material evolution', or in Walter Benjamin's words, it is '*unquestionably deformed by relationships with everything that surrounds me*'.<sup>209</sup> What drive Rossi's efforts are then perhaps autobiographical experiences that reveal permanent meanings common-to-all. The material deformation and superimposition of new meaning onto existing archetypal objects (barns, stables, sheds, workshops, etc.) reveal universal and persisting emotional and factual values, confirming that their 'characteristic features' emerge from a rational process of reduction that conforms to common meaning. This 'objective logic' validates to Rossi an analogical design practice, in which autobiographical experiences and interests inevitably lead to a clarification of constant technological, architectural, and typological questions, which he asserts always relate back to the larger but specific context. Being meditations on archetypal objects, design takes place within the space of inventoried archaic forms and their changing collective memories. Design therefore requires a logical, formal, and rational analytic of material.

Discussing his own projects, Rossi however relies on descriptions, emblems, symbolic allusions, and personal analogies, with spatial references succumbed to stereotypes that lack the rigour of a spatial, programmatic, and formal analysis for which he argued in *The Architecture of the City*.<sup>210</sup> The instrumentalisation of analysis, presumed to recover architecture from its functional reduction through a rational synthesis of architecture's pre-existing autonomy with its *locus* of realisation, is substituted now by what Rossi proclaims to be poetry. For example, the project for the Modena Cemetery (1971) is described as a

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<sup>207</sup> Rossi, 'An Analogical Architecture', in *Rossi: Selected Writings and Projects*, p. 59.

<sup>208</sup> Carl Gustav Jung, *Man and his Symbols* (New York: Dell Publishing, 1968), p. 45.

<sup>209</sup> As cited by Rossi, 'An Analogical Architecture', in *Rossi: Selected Writings and Projects*, p. 60.

<sup>210</sup> Compare for example with Aldo Rossi, 'The Blue of the Sky' (1971), trans. in *Oppositions*, 5 (1976), repr. in *Aldo Rossi: Selected Writings and Projects*, pp. 40–47; and Aldo Rossi, 'Thoughts About My Recent Work', *Architecture and Urbanism*, 65 (1976), 83.

'house of the dead' and refers to an archetypal civic typology—suggests a compelling, obvious metaphor of common human experiences. At the same time, this retreats to Loos's definition of architecture as being only that of tombs and monuments. Typology rather than being structural becomes effectively a collective image: 'This project for a cemetery complies with the image of a cemetery everyone has.'<sup>211</sup> As Moneo writes about the project, 'the image Rossi gives us today of a cemetery, although inspired by well-known typologies, is produced as a mental image and only from this viewpoint can it have a sense otherwise lost in the retina hardened by the commonplace of everyday experience'.<sup>212</sup> Although Rossi argues for the design being rational and producing a purified and intensified reality, it is articulated as a typological-geometric reduction and a representational image that forfeits a material analytic—in a quasi anti-design stance motivated by the 'compulsion' to repeat'.<sup>213</sup> Rossi uses repetition as a strategy of rationalisation, in which typological recurrence is a mechanism to strip away meaning until architecture becomes 'silent', which points to a desire to both regain and ahistoricise the past as a new event.<sup>214</sup> The typological repetition is evident in a number of projects, from a Central Business District proposal in Turin (Locomotiva 2, 1962) to the realised Gallarate 2 housing in Milan (1969–73), the San Cataldo Cemetery at Modena (1971–78), which relates to his projects for monuments in Cuneo (1962) and Segrate (1965), all underscoring his analogical argument of formal permanence and scale. But the conflict between collective interests and individualisation is, according to Moneo, only resolvable by understanding architecture as a multilayered civic endeavour in which the city and its architecture are a totality. However, the city remains absent, even excluded, from the Modena Cemetery (both as a project and in its realisation), a phenomenon also apparent in many other projects by Rossi that fetishise a part-to-part relation.<sup>215</sup> One can perhaps partially explain this inconsistency with the change of Rossi's position, interests, and priorities in the late 1960s to the early 1980s, when the rationalist arguments of his early formative years was succeeded by a prominent humanism in tension with the desires of individual freedom and collective meaning. As Rossi in his contemplations on *The Architecture of the City in A Scientific Autobiography* (1981) confesses:

I wanted to write a definitive work: it seemed to me that everything, once clarified, could be defined. I believed that the Renaissance treatise had to

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<sup>211</sup> Rossi, 'The Blue of the Sky', in *Aldo Rossi: Selected Writings and Projects*, p. 41.

<sup>212</sup> Rafael Moneo, 'Aldo Rossi: The Idea of Architecture and the Modena Cemetery', *Oppositions*, 5 (1976), 1–30 (p. 18).

<sup>213</sup> Rossi, *A Scientific Autobiography*, 54.

<sup>214</sup> For a discussion of the changing theme of repetition in Rossi and its relation to typology, see Lobsinger, 'That Obscure Object of Desire', 38–61.

<sup>215</sup> Rossi explains that the cemetery relates to the city by creating a public, architectural place that becomes absorbed by the collective and thus the city; see 'The Blue of the Sky', *Oppositions*, 5 (1976), 31–34 (p. 34). Peter Eisenman argues that the cemetery as a series of parts plays with typological and architectural preconceptions. It applies a scale to the building *elements* that is unexpected, and relates to the public place that is created, thus, becomes an urban artifact; see 'Texts of Analogy: Aldo Rossi, Cemetery of San Cataldo, 1971–78', in *Ten Canonical Buildings 1950–2000* (New York: Rizzoli, 2008), pp. 178–98.

become an apparatus which could be translated into objects. I scorned memories and at the same time, I made use of urban impressions: behind feelings I searched for the fixed laws of a timeless typology. I saw courts and galleries, the elements of urban morphology, distributed in the city with the purity of mineralogy. I read books on urban geography, topography, and history, like a general who wishes to know every possible battlefield. [...] Like a lover sustained by my egotism, I often ignored the secret feelings I had for those cities; it was enough to know the system that governed them. Perhaps I simply wanted to free myself of the city. Actually, I was discovering my own architecture.<sup>216</sup>

The fragmentary reflections in *A Scientific Autobiography* are intended to explain the problematic relationship between factual and fictional readings of architecture, with its title and intent borrowed from the *Scientific Autobiography* by Max Planck, in which biography and scientific endeavours merge. The conflation of the subjective and objective is a form of analysis signifying to Rossi the meaning of 'scientific'. He detects—in a Freudian slip—in Planck's writings but also Dante's *Commedia* a scientific and autobiographic search for death and happiness, which he interprets as a 'continuation of energy', which in architecture reveals itself by the fact that: 'In the use of every material there must be an anticipation of the construction of a place and its transformation.'<sup>217</sup> This tension is captured by the Italian word *tempo*, denoting both an atmosphere and chronology, as it compares to the persistence of architectural form and its challenge by continuous literal modifications of its material and function over time. This double reading of architecture justifies the contrasting of individual themes with permanent architectural themes through analogies, resulting in a reflective repetition and variation of the same. Rossi's biographical experiences, associations, and insights accordingly are meant to present archetypal forms as memories in which objects, history, and biography unite.<sup>218</sup> This proposition that objects and time can be understood from a simultaneous rational and biographical perspective is increasingly important to Rossi.<sup>219</sup> To explain a relationship of form and history, Rossi however mythologises the zoological method of analysis by Cuvier. He analogously relates the formation of architecture to a skeletal structure, to 'a skeletal mediation or meditation on bones', with fragments implying a rational reading of the whole structure and its development: giving knowledge of time and history.<sup>220</sup> Thus the significance of fragments, which comparable to their use in zoology point in architecture towards a possible totality

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<sup>216</sup> Rossi, *A Scientific Autobiography*, pp. 15–16.

<sup>217</sup> Rossi, *A Scientific Autobiography*, p. 1. The theme of death is recurrent in his book and related to his thesis of architecture as silence.

<sup>218</sup> Rossi for example mentions the importance of forms from his childhood, such as 'coffeepots, the pans, the bottles', in *A Scientific Autobiography*, p. 2.

<sup>219</sup> Compare: 'I searched for it in history, and I translated it into my own history.' Rossi, *A Scientific Autobiography*, p. 16.

<sup>220</sup> Rossi, *A Scientific Autobiography*, p. 38.

and form—explaining Rossi’s insistence on fragments and synecdoche as representations of the whole.

But the question of the fragment in architecture is very important since it may be that only ruins express a fact completely. [...] I am thinking of a unity, or a system, made solely of reassembled fragments. [...] I am convinced, however, that architecture as totality, as a comprehensive project, as an overall framework, is certainly more important and, in the final analysis, more beautiful. But it happens that historical obstacles—in every way parallel to psychological blocks or symptoms—hinder every reconstruction. As a result, I believe that there can be no true compensation, and that maybe the only thing possible is the addition that is somewhere between logic and biography.<sup>221</sup>

As Rossi begins to realise, architecture as a totality is beyond retrieval and only partially reconstructed by biographical memories. This requires a revision of architecture, which was defined in *The Architecture of the City* as marking through its form a precise historical event. Instead, ‘architecture becomes the vehicle for an event we desire, whether or not it actually occurs; and in our desiring it, the event becomes something “progressive” in the Hegelian sense’.<sup>222</sup> Hegel’s dialectic progression, emerging from continual contradictions and their synthesis in a progressive realisation of the spirit in time—an absolute and free reality—is invoked to explain Rossi’s dialectic between rational and autobiographical form and its relation to history. Due to inherent and continual dialectic contradictions, the pursuit of purity or the recreation of historical moments and their atmosphere is no longer possible and in its place, Rossi wants to achieve silence.<sup>223</sup> ‘Perhaps a design is merely the space where the analogies in their identification with things once again arrive at silence.’<sup>224</sup> Their relationships are circular yet incomplete, suggesting, as Rossi intimates, the return of silence.

Rossi consequently views history now as both inevitable and emptied of significance. Commenting on his Modena Cemetery once again, he states: ‘If I were to redo this project, perhaps I would do it exactly the same; perhaps I would redo all of my projects in the same way. Yet it is also true that everything that has happened is already history, and it is difficult to think that things could occur in any other way.’<sup>225</sup> The paradox between determination and inconsequentiality leads Rossi to define architecture as prearranged but unforeseeable, emphasising the beginning and the end but not intermediate development. Architectural formation and history are self-referential or self-determining yet rational. ‘All gratuitous invention is removed; form and function are by now identified in the object; the

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<sup>221</sup> Rossi, *A Scientific Autobiography*, p. 8.

<sup>222</sup> Rossi, *A Scientific Autobiography*, p. 5.

<sup>223</sup> Compare Rossi, *A Scientific Autobiography*, p. 5.

<sup>224</sup> Rossi, *A Scientific Autobiography*, p. 35.

<sup>225</sup> Rossi, *A Scientific Autobiography*, p. 15.

object, whether part of the country or the city, is a relationship of things.<sup>226</sup> Rossi in accord with Benjamin alleges that not the things themselves but their relationships deform and give new meanings: create the unforeseen. The unforeseen emerges from 'limitless analogies' that are regarded as belonging to 'the realm of probability, of definitions that approximated the object through a kind of cross-referencing'.<sup>227</sup> The analogies are, at the same time, typological archetypes, as 'nothing can yield more unforeseen results than a repetitive mechanism. And no mechanism seems more repetitive in their typological aspects than the house, public buildings, theater.'<sup>228</sup> As Rossi recalls, the 'freedom of typology, once established, has always fascinated me as a problem of form', but this form is 'like the idea of sacredness in architecture', which can be de-contextualised and re-appropriated.<sup>229</sup>

The structural constancy of type outlined in the early work, diminishes in *A Scientific Autobiography* in favour of a different kind of permanence: the ritual. In *The Architecture of the City*, Rossi already wrote: 'I believe that the importance of ritual in its collective nature and its essential character as an element for preserving myth constitutes a key to understanding the meaning of monuments and, moreover, the implications of the founding of the city and of the transmission of ideas in an urban context.'<sup>230</sup> This legitimises the different science of his autobiography, which is increasingly 'poetic' and ambiguously displaces or complements the problem of (typological) choice. It turns from the formal aspects of collective memories to the symbolic meaning of the city and meditative value deriving from the 'reality of human life' and social form.<sup>231</sup> 'Today if I were to talk about architecture, I would say that it is a ritual rather than a creative process', Rossi muses, explaining that rituals 'give us comfort of continuity, of repetition, compelling us to an oblique forgetfulness, allowing us to live with every change which, because of its inability to evolve, constitutes a destruction'.<sup>232</sup> Accordingly, his work wilfully lacks development, and Rossi declares that he 'was not interested principally in architecture' but, like Stendhal, to 'forget architecture, or any proposition, was the objective of my unchanging choice of a typology of pictorial and graphic construction in which the graphics became confused with handwriting, as in certain highly developed forms of graphic obsession where the marks may be seen as either drawing or writing'.<sup>233</sup> Yet, Rossi deliberately never resolves but indulges in the contradictions arising from his demand for a scientific analysis of form in

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<sup>226</sup> Rossi, *A Scientific Autobiography*, p. 19.

<sup>227</sup> Rossi, *A Scientific Autobiography*, pp. 80–81.

<sup>228</sup> Rossi, *A Scientific Autobiography*, p. 30.

<sup>229</sup> As Rossi adds, 'a tower is neither solely an image of power nor a religious symbol. I think of the lighthouse, the huge conical chimneys of the Castello di Sintra in Portugal, silos and smokestacks.' In *A Scientific Autobiography*, p. 75.

<sup>230</sup> Rossi, *The Architecture of the City*, p. 24.

<sup>231</sup> Rossi, *A Scientific Autobiography*, p. 41.

<sup>232</sup> Rossi, *A Scientific Autobiography*, p. 37.

<sup>233</sup> Rossi, *A Scientific Autobiography*, pp. 39 and 43.

*The Architecture of the City* and his desire to rationalise the mythological and mental archetypes suggested in *A Scientific Autobiography*.

To explain architecture in terms of the givens that are its proper domain means posing the problem in a scientific way, removing any superstructure, bombast, and rhetoric which encrusted it during the years of the avant garde. Such an explanation more than ever involves the dissolution of a myth and the reinsertion of architecture between the figurative arts and technology.<sup>234</sup>

While Rossi calls for a realist and rational explanation of architecture, he constantly mythologises architecture, whether it is the origin of the modern city in the *polis* or the origins of his designs, with the Modena Cemetery allegedly born from his own near death experience in a car accident.<sup>235</sup> Rossi attempts to resolve this contradiction by describing an autonomous architectural language as depending on homogeneity and conventions of continuity while absorbing autobiographical references, with this unity meant to endow urban artifacts with a timeless and meaningful collective and individual will that he believes is possible to uncover and maintain. Writing about his recent works in 1980 and contradicting *The Architecture of the City* which claimed that architecture always has an aesthetic intention, he now upholds that they are 'free of memory' and easily reproducible, 'they offer a discomfiting sense of something *already seen*', marking a shift from purity to silence, and are thus free from an aesthetic will.<sup>236</sup> He reiterates this didactic position in 1997, stating: 'I believe that I have created fundamental architectural principles for my colleagues and myself, which allow one to design and build relatively easily'.<sup>237</sup> Extracted from the historical city, the principles of archetypes that Rossi believes to have recovered, however, seem nostalgic stereotypes, reconstructing a lost, rather than establishing new unforeseen, meaning. A rational construction of invariable types that he is after remains elusive and tainted by personal signification, questioning architecture as an autonomous and normative discipline.

Misled by Rossi's claims, many have interpreted his writings and projects as poetics or architectural texts.<sup>238</sup> As Manfredo Tafuri observes, Rossi's 'superfluous silence' and

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<sup>234</sup> Rossi, *A Scientific Autobiography*, p. 83.

<sup>235</sup> Compare Rossi, *A Scientific Autobiography*, p. 11.

<sup>236</sup> Aldo Rossi, 'My Designs and Analogous Architecture', in *Aldo Rossi in America: 1976 to 1979*, ed. by Kenneth Frampton (New York: The Institute for Architecture and Urban Studies, 1979), p. 17.

<sup>237</sup> Aldo Rossi and Bernard Huet, 'Architecture, Furniture and Some of My Dogs', p. 106.

<sup>238</sup> Compare Bandini, 'Aldo Rossi', p. 107. Similarly Francesco Dal Co criticised Savi for remaining 'halfway between essay and biography' ('Criticism and Design: For Vittorio Savi and Aldo Rossi', *Oppositions*, 1978). Others who interpret Rossi as a poet/writer are Daniel Libeskind, in 'Deus ex Machina/Machina ex Deo: Aldo Rossi's Theater of the World', *Oppositions*, 21 (1980), 2–23; and Carlo Olmo, in 'Across the Texts'. While Tafuri felt it impossible to verbalize or translate the meaning of Rossi's work, Eugene J. Johnson precisely attempts this by carefully tracing the typologies found in the cemetery to his writing and theoretical sources; in 'What Remains of Man—Aldo Rossi's Modena Cemetery', *Journal of the Society of Architectural Historians*, 41.1 (1982), 38–54.

'typological constraint' that refuses to manipulate form, utilises contradiction and the withholding of meaning, with the exploration of silence and emptiness in form becoming mnemonic vessels justified by overloaded memories in a 'language-as-a-system-of-exclusions'.<sup>239</sup> In contention to Rossi, Tafuri questions architecture's ability to be political, but states that the 'historical project', in accordance with ideas by Antonio Gramsci, Benedetto Croce, and Walter Benjamin, has political potential. He further opposes an 'operative' history tied to typology, for it misreads and mythologises the past in a false appropriation of design models for the present and future.<sup>240</sup> Levelling his scathing criticism, Tafuri writes that Rossi's 'theoretical works are but "poetics in the strictest sense. It is perhaps useless to challenge his literary works: they have but one usage, to help follow the spiritual autobiography which the architect inscribes within this formal composition."<sup>241</sup> The partiality of Rossi removes architecture from reality and locates it in a system of personal signs and memories that make a recovery of ahistoricising form possible, and reverse the fragmentation of the 'order of discourse' by means of an abstract and emptied syntax.<sup>242</sup> This ultimately allows architecture to regain the status of 'pure art' that already existed in the Modern Movement and to which Rossi objected. Tafuri therefore ironically charges Rossi with pursuing an empty formalism with no political relevance, in which communication 'has nothing to speak about except the finite character of language as a closed system' that, once translated into architecture, becomes an 'emptied sacrality' and a denuded grammar with the 'eternal recurrence of geometrical emblems reduced to ghosts'.<sup>243</sup> Tafuri sees the 'rhetorical and evasive formalism', which Rossi accused the International Style of, emerging in his own work.<sup>244</sup> Similarly, Eisenman polemically asked 'whether "*architettura autonoma*" with its neoclassical stylistic preferences is merely another architect's smokescreen, as Functionalism was, for "aesthetic free-play"'.<sup>245</sup> And Rossi himself admitted, 'my studies of Lombard neoclassicism, on Loos, and on Boullée

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<sup>239</sup> Compare Manfredo Tafuri, 'L'Architecture dans le Boudoir: The Language of Criticism and the Criticism of Language', *Oppositions*, 3 (1974); repr. in *Oppositions Reader*, ed. by Michael Hays (New York: Princeton Architectural Press 1998), pp. 291–316. An extended version of this is in Manfredo Tafuri, *Il labirinto e la sfera* (Turin: Einaudi, 1980). English translation: *The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s*, trans. by Pellegrino d'Acierno and Robert Connolly (Cambridge, MA: The MIT Press, 1987), pp. 273–78.

<sup>240</sup> Tafuri's alternative architectural history based on a philological methodology is discussed by Carla Keyvanian, 'Manfredo Tafuri: From the Critique of Ideology to Microhistories', *Design Issues*, 16.1 (2000), 3–15.

<sup>241</sup> Tafuri, 'L'Architecture dans le Boudoir', p. 314, n. 11.

<sup>242</sup> As Tafuri argues, this removal from reality is Rossi's reply to the 'poetics of ambiguity' by Robert Venturi and John Johansen: 'Rossi declaims an alphabet that rejects all articulation. As the abstract representation of its own arbitrary laws, it makes artifice its own realm. By this means such an architecture falls back to the structural nature of language itself. Exhibiting a syntax of empty signs, programme exclusions, rigorous limitations, it reveals the inflexible nature of the arbitrary and the false dialectic between freedom and norm that are characteristic of the linguistic order.' See, 'L'Architecture dans le Boudoir', p. 296.

<sup>243</sup> Tafuri, *The Sphere and the Labyrinth*, p. 273–74.

<sup>244</sup> Aldo Rossi as a student in 'Speech at the International Conference of Students of Architecture', in *Special Supplement of National Union of Students* (Prague: Transcription, 1954), as cited by Aureli in 'The Difficult Whole', p. 47.

<sup>245</sup> Peter Eisenman in his introduction to Moneo, 'Aldo Rossi: The Idea of Architecture and the Modena Cemetery', p. 1.

are only incidentally historical, and in the end are nothing less than the cultural references from which I have constructed my theory of architecture'.<sup>246</sup>

As Moneo notes, with the 'shift from knowledge to feeling' in the late 1970s, exemplified by *A Scientific Autobiography*, Rossi embraced the realisation that reality—and the architecture of totality—was unattainable and unacceptable.<sup>247</sup> While his initial ambition was to resolve the problem of a self-determined autonomy of architecture and its representation in the city through a typological analysis, Rossi seemed unable to rationalise type as a form of structural analysis demanded in *The Architecture of the City*—as it approximated the abstraction, technical standardisation, and surrender of individuality promulgated by the Modern Movement. He remained in an ambiguous territory of neo-Enlightenment, in which architecture could simultaneously exist as rational and poetic, covertly insisting on a disciplinary self-sufficiency borrowed from the arts. Rossi's idea of the analogous city failed to explain 'scientifically' the individuality of architecture and its relevance to his modernist socio-political thesis. It largely remained obscure, a fetishisation of personal images unable to reveal the real facts he insisted they represented. Moneo claimed that the last period of Rossi's fame, coinciding with his reverence in America, could not be substantiated by his built projects or effectively outdated theories, with Rossi conceding that his legacy mainly depended on drawings.<sup>248</sup> Thus, 'drawing would become that "other" reality' of Rossian architecture, which removed from the city, was subordinated to iconography.<sup>249</sup> Rossi retreated hereby to another neoclassical doctrine adopted by Postmodernism, that of art as a shared metalanguage revealing truth through poetic mimesis.<sup>250</sup>

Modern *poesies*, already latent in his early writings including *The Architecture of the City*, which at first offered a rational *techné*, follows structuralist tendencies inspired by Lévi-Strauss and Ferdinand de Saussure, and allows Rossi to focus on common meaning that is not typological but invokes, through images of verisimilitude, the conventionalised or symbolic that appears as true.<sup>251</sup> Rossi's previous concealed reading of architecture in the Heideggerian sense as not a representation, but as presenting itself through a world of images, in which form arises from figures and poetry, becomes apparent.<sup>252</sup> Rossi now incessantly rearticulates new beginnings and endings—the question of origin—by taking

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<sup>246</sup> Rossi, 'Introduction to the Portuguese Edition', in *The Architecture of the City*, p. 170.

<sup>247</sup> Moneo, 'Aldo Rossi', in *Theoretical Anxiety*, p. 105.

<sup>248</sup> Moneo, 'Aldo Rossi', in *Theoretical Anxiety*, p. 123.

<sup>249</sup> Moneo, 'Aldo Rossi', in *Theoretical Anxiety*, p. 123.

<sup>250</sup> Teysot argues that the return to classicism and neoclassical forms and theories are common to the postmodern proliferation of images, and pertinent to Rossi's work; 'The Anxiety of Origin', pp. 92–107.

<sup>251</sup> The failure of Rossi to establish a rational *techné* in *The Architecture of the City* is discussed by Belgin Turan, 'Is "Rational" Knowledge of Architecture Possible? Science and Poïêsis in "L'Architettura della Città"', *Journal of Architectural Education*, 51.3 (1998), 158–65. An example of a structuralist interpretation of Rossi, terming his typology a 'textual concept', is Hays, 'Analogy', in *Architecture's Desire*, pp. 23–50.

<sup>252</sup> For a debate of Heidegger's thesis on the work of art and Rossi, see Teysot, 'The Anxiety of Origin'; and Turan, 'Is "Rational" Knowledge of Architecture Possible?'

recourse to memory and past unity. The importance of mimesis to his later work is recognised by Bernard Huet, who tried to reconnect it to Rossi's earlier rational classification of urban artifacts via labour: 'It is necessary to understand Aldo Rossi's position regarding the problem of imitation from the perspective of a collective means of labor. Imitation must be seen as both an approach to a community of language and a recognition of the typological nature of the urban context.'<sup>253</sup>

Rossi accepted a regression of his position that architecture constitutes urban facts and events to Lynch's argument of the city as coded by images.<sup>254</sup> Rossi also returned to Argan's iconographic-typological reduction that as a repository of past images supposedly provided consistency. Werner Oechslin, however, criticised the equation of typology and iconography in Argan's interpretation of Quatremère, as by negating the specificity and limitations of the arts and by reducing typological reasoning to classification according to function and content, it created contradictions.<sup>255</sup> Following an analysis of Quatremère and Durand, Oechslin concludes that the combination of their approaches suggests a complementary typological autonomy and outlines the premise of a design process that defines the boundaries in which inventions take place. To him the systematic, historical, and conventional limitations of architecture are a unity, and permit a creative dialogue between type and figure, with the resolution of the architectural figure irreducible to either a positivist historical or functional approach. Nevertheless, the suggestive idea of type as mimesis was taken up by Rossi, aligning his concept of type with a neoclassical idea of character that owed more to Boullée's *architecture parlante* than Quatremère's architectural system.<sup>256</sup> This is explained, as Marie Louise Lobsinger and Pier Vittorio Aureli argue, by Rossi's understanding of type not initially deriving from Quatremère or Durand, but resulting from a critical reading of Enlightenment architects and the theories of the Modern Movement in reviews written for *Casabella continuità*, which introduced him to the interrelation of architectural and urban structural problems and made him realise a typological and morphological connection.<sup>257</sup> As Rossi claims, constructing yet another

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<sup>253</sup> Bernard Huet in *AMC*, 1 (1983) as cited by Teyssot in 'The Anxiety of Origin', pp. 103–04.

<sup>254</sup> As Aureli claims, Rossi was intrigued by Lynch's systematic coding of the urban landscape through images, but in *The Architecture of the City* substituted 'image' with 'architecture'. However, he later seemed to adopt Lynch's dominance of the image, accepting perceptual and psychological experiences in favour of structural and formal aspect of the city. Compare Aureli, 'The Difficult Whole', pp. 59–60.

<sup>255</sup> See Oechslin, 'Premises for the Resumption of the Discussion of Typology', p. 41.

<sup>256</sup> This sentiment is expressed by Rossi: 'For Boullée, to give character to a work means not to make us experience sensations other than those intrinsic in the subject; the character constitutes the evocative, emotional part.' Rossi, 'Introduzione a Boullée', in Etienne-Louis Boullée, *Architettura: Saggio sull'arte*, as cited by Johnson in 'What Remains of Man', p. 39.

<sup>257</sup> Aureli mentions Rossi's reviews of Auguste Perret, Adolf Loos, Peter Behrens, Siegfried Gideon, Hans Sedlmeyer, Alessandro Antonelli, Hannes Meyer, and Le Corbusier; compare 'The Difficult Whole', pp. 49–51. Lobsinger points out the review *Von Ledoux bis Le Corbusier* and *Three Revolutionary Architects: Boullée, Ledoux, and Lequeu* in 'Emil Kaufmann e l'architettura dell'illuminismo' (1958), in which Rossi discusses the shift of an ideal formal to a symbolic character, from Jacques-François Blondel to Claude-Nicholas Ledoux, before it becomes abstracted to instrumental, formal types by Durand; compare 'That Obscure Object of Desire', p. 51.

myth, his studies of fundamental typologies were inspired by the disregard of formal and dimensional aspects in the autobiographical writing-drawing by Stendhal in *The Life of Henri Brulard* (1890).<sup>258</sup>

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<sup>258</sup> Compare Rossi, *A Scientific Autobiography*, p. 6.

## 2 THE CITY AFTER MODERNISM

*Typology was probably only a major issue for architectural theory during the 1960s and 1970s, but many current approaches to the city owe an implicit debt to those who furthered this debate. In a way typology has become another architectural convention and, as such, its usefulness is directly proportional to the looseness of its unverified boundaries, that is, until the cultural assumptions which underwrite it remain stable. After that we may well see another resurgence of the typo-morphological debate.<sup>1</sup>*

Rossi's thesis of type in *The Architecture of the City* as the irreducible 'apparatus' of architecture proposed historical continuity and rediscovery of forms in place of invention, a thesis shared by his contemporary Oswald Mathias Ungers. With the Italian debate on typology spreading in the late 1960s in continental Europe, similar dialogues emerged elsewhere, equally preoccupied with the nature of the architectural and historical object in the city. Unlike the Italian debate, however, which took recourse to Enlightenment theories, these discussions focused on a re-examination and critique of the Modern Movement's technical abstraction and break with history. The belated Anglo-Saxon discussion was largely due to an 'anti-intellectual bias', which lacked a 'strong tradition in Modernism' and belief in 'the unity of theory and practice for architectural design', and when it finally occurred, was largely dominated by formal research.<sup>2</sup>

A key proponent to this extended debate was Alan Colquhoun, who in 'Typology and Design Method' (1967) derived his argument from a thesis by the Argentinean designer Tomás Maldonado that stated if the classification of all parameters of an architectural program is impossible, a typological solution of form is permissible.<sup>3</sup> In reference to Maldonado, Colquhoun first sought to clarify the classification of designed artifact, which he saw complicated by the disciplinary distinctions between art and science. Before the modern sciences, type-solutions were commonly accepted as valid, as the design of artifacts still belonged to a tradition of imitation in which the unity of use and cultural exchange was expressed as an iconic value. The manufacture of artifacts within crafts was therefore seen as an art, one not just charged with the execution but also the perpetuation of a coherent representational system through which the phenomenal world could be coded and communicated. Colquhoun believes that the comprehension of the contemporary environment and its architecture still relies on comparable mechanisms, as 'socio-spatial schemata' reveal not objective facts, but phenomenal relations whose aesthetic organisation is 'an artificial construct which *represents* these facts in a socially recognisable way'.<sup>4</sup> Yet, Colquhoun acknowledges that the rise of sciences and the Modern Movement

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<sup>1</sup> Bandini, 'Typological Theories in Architectural Design', p. 394.

<sup>2</sup> Bandini, 'Typological Theories in Architectural Design', p. 390.

<sup>3</sup> Compare Alan Colquhoun, 'Typology and Design Method', *Arena*, 83 (1967), 11–14.

<sup>4</sup> Colquhoun, 'Typology and Design Method', p. 12.

made this intuitive imitation and iconic significance of form untenable, requiring a modification of the representational system. Industrialisation with new technologies and changing modes of production favoured an evolutionary understanding, which demanded scientific analysis and classification. Thus the Spencerian ‘biotechnical determinism of the modern movement was teleological, because it saw the aesthetic of architectural form as something which was achieved without the conscious interference of the designer but as something which none the less was postulated as his ultimate purpose’.<sup>5</sup> Regardless, Colquhoun insists that all artifacts, including technological inventions such as steamships or airplanes, have an iconic potential and aesthetic unity independent from their function and appeal to human emotions. Like Rossi, Colquhoun claims that the determination of form always requires a *choice*, which is unresolved by teleological procedures and methods. A fact recognised by key figures of the Modern Movement, including Le Corbusier, Yannis Xenakis, or László Moholy-Nagy, who accepted that methods only provide a framework for ‘voluntary’ decisions and intentions, thereby paradoxically replacing the traditional aesthetic criteria with unscientific intuition.<sup>6</sup> Returning to Maldonado, Colquhoun states that in reality never all the parameters of a problem are established by classification according to man-made physical or mathematical laws. Thus, all designs take recourse to some form of intuition. When Maldonado suggests ‘that the area of pure intuition must be based on a knowledge of past solutions applied to related problems, and that creation is a process of adapting forms derived either from past needs or from past aesthetic ideologies to the needs of the present’, this effectively defines a design process that must rely on typological, existing models.<sup>7</sup>

Since scientific laws generally do not generate architectural configurations, they are determined by pragmatic considerations and take recourse to received aesthetic forms. However, the Modern Movement’s attempt to replace a representational system with scientific process had to reject artistic precedents and aligned itself, according to Colquhoun, with Expressionism. This seemed to resolve the quandary by providing the argument that shapes have the capacity to directly communicate content without a need for intermediary representation. It especially suited architecture, which unlike the traditional liberal arts has no apparent representational value. Yet, as Ernst Gombrich pointed out, all forms are open to association of meaning and Colquhoun explains: ‘This could mean not only that we are *not* free from the forms of the past, and from the availability of these forms as typological models, but that, if we assume we are free, we have lost control over a very active sector of our imagination, and of our power to communicate with others.’<sup>8</sup> Architecture, he contends, is comparable to language as a given ‘complex system of representation in which the basic emotions are structured into an intellectually coherent system’ and in both instances, an underlying and necessary system of conventions

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<sup>5</sup> Colquhoun, ‘Typology and Design Method’, p. 12.

<sup>6</sup> Compare Colquhoun, ‘Typology and Design Method’, pp. 12–13.

<sup>7</sup> Colquhoun, ‘Typology and Design Method’, p. 13.

<sup>8</sup> Colquhoun, ‘Typology and Design Method’, p. 14.

becomes 'embodied in typological problem/solution complexes'.<sup>9</sup> This process of design based on typological models is less one of reduction than exclusion, enabling 'us to see the potentiality of forms as if for the first time and with naivety', a new consciousness of formal meaning that was made possible by the Modern Movement's modification of the representational system.<sup>10</sup>

The Modern Movement, opposing received forms introduced a different representational system based on technological and economic considerations, but remained bound to symbolic expression. As Colquhoun writes in 'Symbolic and Literal Aspects of Technology' (1962), the Modern Movement's parallelism between logic of form and logic of construction severed the 'ontological link' between art and technique, offering design freedom through part-to-part relations that were thought more appropriate to modern forms, and re-establishing a connection between technology and representation. The Durandesque view of architecture as composed of additive parts according to general economic organisation, however, led to a crisis of content in form. Neglecting architecture's uniqueness as a symbol and whole, it confused technology as construction with the content of building forms. This made architecture incapable of carrying a meaningful symbolism and preventing necessary design flexibility. Architecture, so Colquhoun, is however reasoned by symbolic form and plastic or expressive ends, 'architecture belongs to a world of symbolic forms in which every aspect of building is presented metaphorically, not literally'.<sup>11</sup> Modernism never resolved this contradiction between technology and art, treating technology less as a fact than an idea represented by aestheticised functionalism, whereby technology was adapted to an aesthetic formal will. This paradox confirmed architecture as causally independent from physical sciences and as a subjective work of art, undoing the claim of architectural Modernism to ontological autonomy. Thus, Le Corbusier's concept of 'type' can be said not to be an *objet-type* used to solve a design problem, but a 'mythic form' to which different symbolic contents and meanings are attached by rational principles.<sup>12</sup> Le Corbusier's architectural inventions, such as his 'Five Points', are indeed typological reversals or metaphorical reinterpretations of prescribed and often neoclassical rules, are a paradigmatic 'displacement of concepts' from within and outside the discipline in a strive to formulate a new architecture.<sup>13</sup> The visual analogy of machines corresponds therefore in Le Corbusier's work to functions, but is simultaneously subsumed by the aesthetic and poetic intention to humanise machinery, with the purpose to make architecture symbolic of objective design and a utopian human society.

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<sup>9</sup> Colquhoun, 'Typology and Design Method', p. 14.

<sup>10</sup> Colquhoun, 'Typology and Design Method', p. 14.

<sup>11</sup> Alan Colquhoun, 'Symbolic and Literal Aspects of Technology', *Architectural Design*, (1967), 508–09; repr. in Colquhoun, *Essays in Architectural Criticism*, pp. 26–30 (p. 28).

<sup>12</sup> Compare Alan Colquhoun, 'Formal and Functional Interactions: A Study of Two Late Buildings by Le Corbusier', *Architectural Design*, 36 (1966), 221–34; repr. in Colquhoun, *Essays in Architectural Criticism*, pp. 31–40 (p. 39).

<sup>13</sup> Compare Alan Colquhoun, 'Displacement of Concepts in Le Corbusier', *Architectural Design*, 43 (April 1972), 220–43; repr. in Colquhoun, *Essays in Architectural Criticism*, pp. 51–66.

## 2.1 SYMBOLIC TYPOLOGIES AND THE IMAGE OF THE CITY

Postmodernism blamed the impoverished formal language of the Modern Movement on a lack of symbolic content and in response proposed two opposite views of the city constructed by a symbolic architecture. Léon and Rob Krier, who followed the neoclassical tradition and returned to formal taxonomies inspired by Durand, effectively converted Rossi's architectural urbanism in *The Architecture of the City* into practice, whereas Robert Venturi, Denise Scott Brown, and Steven Izenour's commercial populism in *Learning from Las Vegas* (1972) advanced the anti-functionalist arguments of Venturi's earlier *Complexity and Contradictions in Architecture* (1966).<sup>14</sup>

The Krier brother's recourse to Neoclassicism provided access to a rich formal language and taxonomy of urban and social spaces, even though this stylistic repertoire replaced Rossi's concept of choice with codified typologies. Their numerous design manuals, including *Town Spaces* (1975) by Rob Krier and *Architecture: Choice or Fate* (1998) by Léon Krier, posits that the urban quarter forms the nucleus to society and the city, and that this ideal—ideologically and experientially—is substantiated in the forms of traditional architecture and the historical city. This typological classification was formative to the principles of New Urbanism. Critical to Léon Krier's arguments in *Architecture: Choice or Fate* is the nature of architecture as defined by symbolic coherence: 'Symbols are not merely a means of expression or mirrors; they are tools, a means of safeguarding civic and personal values.'<sup>15</sup> Architecture symbolises the social and is part of a larger whole, the society and city, which is composed of architectural objects or elements that make up a 'typological inventory of nature'.<sup>16</sup> Significantly, architectural typologies are seen as a pre-established and closed set:

The basic typological inventory of architectural objects is necessarily limited and cannot be reinvented indefinitely. These typologies, these technologies and their terminology, represent a primordial creation, the inventive power of which surpasses the discoveries of fire and the wheel because, for architecture, nature provides only indications and analogies, not models to imitate.<sup>17</sup>

Despite seeming to share a definition of type with Quatremère or Semper, Léon Krier differs in an important point. While historical analysis provided Quatremère and Semper with the grounds to renew tradition, the historical object is to Krier emblematic and fixed,

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<sup>14</sup> The similarities and differences between *Learning from Las Vegas* and *Complexity and Contradictions in Architecture* are discussed by Alan Colquhoun, 'Sign and Substance: Reflections on Complexity, Las Vegas, and Oberlin', *Oppositions*, 14 (1978), 26–37; repr. in Colquhoun, *Essays in Architectural Criticism*, pp. 139–51.

<sup>15</sup> Krier, *Architecture*, p. 31.

<sup>16</sup> 'The city, the street, the square, the temple, the house, the shed, the greenhouse, the bell tower, the atrium, the vault, the column, the architrave, the frieze, the roof, the door, the window are inventions which complete and enrich the typological inventory of nature.' Krier, *Architecture*, p. 32.

<sup>17</sup> Krier, *Architecture*, p. 32.

and measured against a normative catalogue of styles and technology. He believes in 'true' agreements that prevent arbitrary form or uniformity: 'The coherence of symbol, meaning, of form and content, of style and rank is not the result of a transitory convention but of a decisive agreement.'<sup>18</sup> Thus, skyscrapers are 'fake monuments' deficient of symbolic unity and a harmonic relationship between character and function. Monuments, Krier argues, emerge from a truthfulness to 'scale, proportion, measure, form, content, style, type, and character', requiring traditional terms, forms, and technology.<sup>19</sup> Clarifying the coherence of symbolism, Krier suggests that tradition and modernity are compatible within traditional and artisan cultures, and that type therefore needs to be defined in practical terms.

A typology is the classification of buildings by type. A type represents the organisational structure of a building in plan and section. A type evolves until it achieves its basic (i.e. its rational and logical form). The degree of complexity of a traditional type corresponds to the degree of complexity of its function. [...] In any case, the architectural composition should be the coherent and simple realisation of a typological organisation in plan and in section in a symmetrical or asymmetrical order. Uniformity or complexity, regularity or irregularity must always be based on a typological order. [...] Easy naming and recognition, simple and uncomplicated use are the necessary preconditions for establishing a typological convention.

Through type, architecture is 'nameable' and classifiable, and assumed to have an ideal state of maturity, which is the synthesis of a functional diagram in its 'classical' form. Although invention, innovation, and discovery are the means to modernise the 'universal values' embedded in the aesthetic and ethical principles of type, by borrowing from Quatremère, Krier distinguishes the different identities of an object through the categories of imitation and copy. The imitation of classical form retains the essential distinction between rank and character appropriate to a building in a conventional symbolic language, and is epitomised in the traditional construction of vernacular architecture.<sup>20</sup> The vernacular is specific in terms of region, style, construction, and material, responding to the external influences of culture, geography, and climate, but always refers back, so Krier, to the 'transregional' and universal styles of classical architecture.

In contrast, Venturi, Scott Brown, and Izenour in *Learning from Las Vegas* reinvest the traditional elements of architecture, in particular type as ornament, with the normative function and symbolism of meaning, coupled with popular taste and values.<sup>21</sup> They interpret buildings as signs in themselves, positing that this denies the relationship between form,

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<sup>18</sup> Krier, *Architecture*, p. 34.

<sup>19</sup> Krier, *Architecture*, p. 33.

<sup>20</sup> Compare Krier, *Architecture*, p. 53.

<sup>21</sup> First published in 1972 as *A Significance for A&P Parking Lots, or Learning from Las Vegas* and revised in 1977 as *Learning from Las Vegas: the Forgotten Symbolism of Architectural Form*.

structure, and function found in the heroic functionalism and formalism of the Modern Movement. Reading buildings as literal surfaces of symbolic representation, a simplified typological difference is determined by the 'duck', which is 'the special building that *is* a symbol', and the 'decorated shed', which is 'the conventional shelter that *applies* symbols'.<sup>22</sup> *Learning from Las Vegas* considers the vernacular not as an artisan tradition, but as the 'commercial vernacular'. Indeed, the vernacular is no architecture at all: it is Route 66. The commercial vernacular, the bazaar or Las Vegas Strip, is characterised by the architecture of communication, elevating the anti-spatial elements of styles and signs above Modernist abstract forms derived from programme and structure. Thus the Byzantine chapel Martorana's ambiguous association between architecture and symbolic image, its 'propagandistic symbolism', can be said to reoccur at night in the Las Vegas Strip, when architecture disappears and becomes both image and message.<sup>23</sup> And the image is considered superior to process or form, as it revives symbolism: 'Symbol dominates space. Architecture is not enough. Because the spatial relationships are made by symbol in space rather than form in space. Architecture defines very little: The big sign and the little building is the rule of Route 66. The sign is more important than the architecture.'<sup>24</sup> From this bold statement, derive the themes of *Learning from Las Vegas*, which largely depend on perceptual patterns enabled by vehicular motion. First, the 'symbol in space before form in space' posits the city as a form of symbolic communication rather than a formal and spatial symbolism or architecture. 'Is the sign the building or the building the sign?' *Learning from Las Vegas* asks, implying that the layering of symbolic meaning has subverted the process of making.<sup>25</sup> Second, graphic signs and their legibility, relative to the speed and orientation of passing consumers, define 'the architecture of persuasion'. Third, the 'vast space in the historical tradition' understands space and architecture as controlled by symbols, communication, and images. The idea of the city is now established as an organic and not technological process.

Whereas Léon Krier wants to literally reinstate past forms and types, *Learning from Las Vegas* refers to architecture as depending on 'past experience and emotional association', claiming 'that these symbolic and representational elements may often be contradictory to the form, structure, and program with which they combine in the same building'.<sup>26</sup> Criticising the pure form and space of the piazza—hallowed by architects like Krier—*Learning from Las Vegas* objects to a recovery of architectural and spatial conventions.<sup>27</sup>

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<sup>22</sup> Compare Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (Cambridge, MA: MIT Press, 1972; repr. 1998), p. 87.

<sup>23</sup> Venturi et al, *Learning from Las Vegas*, pp. 115–17.

<sup>24</sup> Venturi et al, *Learning from Las Vegas*, p. 13.

<sup>25</sup> Venturi et al, *Learning from Las Vegas*, p. 73.

<sup>26</sup> Venturi et al, *Learning from Las Vegas*, p. 87.

<sup>27</sup> Seemingly in response Krier wrote: 'Whatever its architectural pretensions, a supermarket will never acquire any significant symbolic value whatever its architectural cladding, be it commercial, nautical or "deconstructural." When located in a commercial strip its very nature prevents it from acquiring meaning other than its narrow functionality.' In, *Architecture*, p. 35.

While Krier asserts that the unity of form, structure, and programme is essential to symbolic meaning, *Learning from Las Vegas* propounds that symbolism can be considered separate from architecture, with symbolic meaning in ornament existing before architecture. Thus the relationship between symbolism and architecture is defined by iconographic genres, the *duck*, when 'the architectural systems of space, structure, and program are submerged and distorted by an overall symbolic form', and *decorated shed*, when 'systems of space and structure are directly at the service of program, and ornament is applied independently of them'.<sup>28</sup>

Although both Krier and *Learning from Las Vegas* criticise the Modern Movement's myth of perpetual revolution and evolution based on the symbolic, Krier sees the failure in functional and formal shortcomings, and the latter in representational and ornamental poverty. With the Modern Movement understanding perceptual phenomena only as abstract symbolism and expression of form, as ensemble and texture, it disregarded the subtle qualities found in the variety of perception and layering of signs and symbols, the tensions between sign and architecture. Consequently the Modern Movement idealises megastructures in the city, while *Learning from Las Vegas* finds the modern condition, the urban processes of the functional city, symbolised in the richness of communication created by urban sprawl. During the day, the sprawling Las Vegas Strip has no formal but symbolic and representational coherence, with the layers of sign and signage transforming the architecture of decorated sheds into ducks. This sprawl-city has no pretensions to heroism and, made of ugly and ordinary architecture, illustrates the complex but self-evident symbolism of decorated sheds.<sup>29</sup>

Krier too objects to megastructures, but due to their mono-function and formal monotony, contending that a functional city has a civic status requiring a rich mix of use, density, and typology. He laments that the Modern Movement symbolically reduced technology and function to architectural form and space without a 'coherent theory of characters, symbols, types, signs, of form or content, of scale or proportions'.<sup>30</sup> Modernism, similar to historicism that he denounces, creates a typological break, whereby new functions are represented by historical building types or transferred to emblematic images of functions (the house as a machine-for-living) without regards for aptness. Krier therefore agrees with *Learning from Las Vegas* that Functionalism is a stylistic choice with a limited repertoire of functional and formal types, upholding an image of function rather than advancing the Modernist programme of progress.<sup>31</sup> Modernism thus seeks perpetual change without periods of

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<sup>28</sup> Venturi et al, *Learning from Las Vegas*, p. 87.

<sup>29</sup> The difference between ugly and ordinary, and heroic and original architecture is explained by a comparison of Guild House (Venturi and Scott Brown) with Crawford Manor (Paul Rudolph). However, it does not resolve the problem that the 'ordinary' denotative symbolism of Guild House requires knowledge of architectural history, while the connotative Modernist ornament is commonly accessible. Compare 'Some Definitions Using The Comparative Method', in *Learning from Las Vegas*, pp. 87–103.

<sup>30</sup> Krier, *Architecture*, p. 66.

<sup>31</sup> Compare Krier, *Architecture*, p. 69.

stability. Yet, natural evolution, so Krier, has limits and an aim. Wanting to achieve these aims as quickly as possible, evolutionary irruptions and typological changes are the exception with periods of stable reproduction the norm. Accordingly, Modernism is an anomaly by dismissing tradition or reducing architecture to an object, negating 'all that makes architecture useful: no roofs, no load-bearing walls, no columns, no arches, no vertical windows, no streets, no squares, no privacy, no grandeur, no decoration, no craftsmen, no history, no tradition'.<sup>32</sup>

The idea and image of the city proposed by *Learning from Las Vegas* and Krier differ greatly. The former idealises urban sprawl as the communication of a complex regime of signs, the latter seeks formal and functional coherence in the image of the historical city. Yet, both understand type as a symbolic image rather than a deeper structure, an image however, that mainly signifies itself. Their aspiration to define a city after Modernism, coincided with numerous similar critiques of the Modernist city, which, on the one hand, polemically explored the impossibility to design and, on the other, led to the consolidation of an urban design discipline. An extreme position of a rhetorical anti-design stance was taken by Superarchitecture. The Italian Archizoom and Superstudio chose typologies stripped to bare organisational effect as their subject, parodying functionalism and notions of megastructure by exaggerating scale and formlessness. Their seminal projects No-Stop-City (1969) and Continuous Monument (1969) respectively, undermined the late modernist excitement of Archigram, or the pretence of realisation that underlies Yona Friedman's Spatial City (1960s) and even Constant Nieuwenhuys's New Babylon (1956–74). The first of the polemic 'paper architecture', their projects were dedicated to the conceptual production of space and socio-cultural criticism. Following this 'radical architecture', the focus turned to more applied urban design strategies and new relations of architecture to the urban. For example, Colin Rowe and Fred Koetter's *Collage City* (1978) rethought the Modernist object in its urban texture. The polemic undertone in *Collage City*, like that in *Learning from Las Vegas*, however was evidence that typology in 1970s America had become a general framework of borrowed meaning and no longer considered operative on its own. Represented by figures such as Venturi and Rowe, Postmodernism thus consciously replaced method with subversive (representational) technique, favouring a common meaning implied by the fragmentary and popular over the elitist and complete.

*Collage City* was a critique of the Modernist object as a plastic form that solely 'occupies' naturalistic space and is unable to give spatial definition to the ground. By effectively eliminating the public realm, it substituted the varied texture of 'public stability' and 'private unpredictability' found in the 'solid' of the traditional city with 'light, air, hygiene, aspect, prospect, recreation, movement, openness', the 'void' of the modern city.<sup>33</sup> The void created an urban foyer, however, without the necessary authentic historical and spatial

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<sup>32</sup> Krier, *Architecture*, pp. 82–83.

<sup>33</sup> Colin Rowe and Fred Koetter, *Collage City* (Cambridge, MA: MIT Press, 1978; repr. 1984), p. 63.

context. In response, *Collage City* proposes an urban design strategy of opposites, a differentiated Gestalt diagram of solid-void that juxtaposes the figure-ground of the historical and modern city. Through the collage of formal types, the hybrid urban poché is deemed able, 'as a solid, to engage or be engaged by adjacent voids, to act as both figure and ground as necessity or circumstance might require', while clearly defining the public ground as 'urban rooms'.<sup>34</sup> Exemplary to the ambition to 'allow and encourage the object to become digested in a prevalent texture or matrix' is the Quirinale in Rome, which by creating a figurative void simultaneously performs as a *space occupier* and *space definer*, thus instigating a sustained debate between building and space: 'the imagined condition is a type of solid-void dialectic which might allow for the joint existence of the overtly planned and the genuinely unplanned, of the set-piece and the accident, of the public and the private, of the state and the individual'.<sup>35</sup> *Collage City* essentially introduces what can only be termed a sceptical concept of type.<sup>36</sup> It argues that functionalism, despite overlapping at times with type-theories, cannot deal with the displacement of 'already synthesized and pre-existing models' such as the ideal forum and acropolis, as it 'was unwilling to consider iconic significance as a concrete fact in itself, unwilling to imagine particular physical configurations as instruments of communications'.<sup>37</sup> These models, however, are based on types and a precondition to Rowe and Koetter's instrumentalisation of representation in the urban collage, in which the nature of object and texture become differentiated and inverted.

## 2.2 UNGERS'S MORPHOLOGICAL CONCEPT OF TYPE

An important contributor to the debate on architecture's relationship to the city after Modernism was Oswald Mathias Ungers (1926–2007), a prolific German architect and educator.<sup>38</sup> His close exchange with such figures as the Smithson's, Rossi, and Rowe influenced his theories and pedagogy that shared the concerns of Team 10 and Neorationalism, and sought an anti-technocratic and autonomous language of architecture.<sup>39</sup> Ungers saw architecture as a synthesis of art and techné, and therefore emerging from art and utility as a problem of composition in relation to the traditional concepts of rhythm, symmetry, proportion, axis, and contrast.<sup>40</sup> The tension between

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<sup>34</sup> Rowe and Koetter, *Collage City*, p. 79.

<sup>35</sup> Rowe and Koetter, *Collage City*, p. 83.

<sup>36</sup> Colin Rowe in 'Program vs. Paradigm' lamented that neither a reliance on program as a collection of data, nor a Neorationalist subservience to paradigm understood as synonymous with typology, is sufficient, and that type had to be reconceptualised in wider terms in order to instrumentalise representation; *Cornell Journal of Architecture*, 2 (1983), 2–19.

<sup>37</sup> Rowe and Koetter, *Collage City*, p. 77.

<sup>38</sup> His completed buildings include his house in Cologne (1958), German Architecture Museum in Frankfurt (1984), Badische Landesbibliothek in Karlsruhe (1991), Haus ohne Eigenschaften in Cologne (1995), Museum of Contemporary Art in Hamburg (1995), Wallraf-Richartz Museum in Cologne (2001). Ungers taught amongst other schools at the Technische Universität Berlin, Cornell University, University of California in Los Angeles, and Harvard University.

<sup>39</sup> Ungers's association and break with Team 10, Neorationalism, and Rowe is well known and discussed in detail by Cepi, *Oswald Mathias Ungers*.

<sup>40</sup> Ungers defines the concept of architecture in his inaugural lecture at the Technische Universität Berlin in 1964, 'Antrittsvorlesung: Was ist Architektur?', *Arch+*, 179 (2006), 12–19; and a lecture of 1979, 'Das Recht

rationality and poetics, elementary form and representational image, was a persistent theme underlying the continuously changing paradigms of his architectural doctrine.<sup>41</sup>

Following an early interest in expressionism, but later renunciation of architecture as art, Ungers turned to Herman Sörgel's *Architektur-Ästhetik* (1918), a comprehensive architectural theory based on a thesis of spatial art that was instrumental to Ungers's own systematisation of spatial tectonics and spatial design (*Raumgestaltung*). Inspired by Sörgel and upholding Alberti's concept of morphological compartition and analogy of the 'large house' as a 'small city' already familiar from Rossi, Ungers interpreted architecture as a prototype of the city and its elementary types forming a morphological complex across scales.<sup>42</sup> Wanting to replace individual artistry with rational design, Ungers argued for the autonomy of architectural form based on a typological reasoning that revealed first the elementary formal structure of architecture and then the realities of its equally important physical, historical, and cultural context. The concern with a theoretical basis of design, but also Ungers's central concepts of the 'house-city' as an architectural reading of the urban and its positive and negative spaces, was first evident in the design for his house in Cologne's Belvederestrasse (1959).<sup>43</sup> At its completion, it was published by Rossi in *Casabella continuità* as exemplary for a new post-war generation continuing the legacy of the Modern Movement, but with a new attitude that 'neither romantic nor rationalistic, neither traditional nor modern, but rather tend to express the new reality of Europe'.<sup>44</sup> Ungers clarified the theoretical questions arising from practice subsequently in a series of typological and morphological studies in the 1960s, first explicitly formulated in his candidate lecture at the Technische Universität Berlin in 1963, which marked his 'theoretical' building lasting until the 1980s.<sup>45</sup>

Critical of merely economic, sociological, and constructive thinking in architecture, Ungers contends in his lecture that architectural design is independent of purposive requirements and derives from the fundamental principles of architectonic formation, which enables a

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der Architektur auf eine autonome Sprache', in *Oswald Mathias Ungers: Architektur 1951–1990* (Stuttgart: Deutsche Verlag-Anstalt, 1991), pp. 237–39. His five elements of composition are conventional and are both in their definition and effect comparable to Semper's elements of formal beauty: harmony, symmetry, analogy, eurythm, and rhythm.

<sup>41</sup> Ungers's theoretical shifts are defined and contextualised by Cepl in *Oswald Mathias Ungers*.

<sup>42</sup> To explain compartition as a morphological complementarity of parts, Alberti used the analogy: 'If (as the philosopher maintain) the city is like some large house, and the house is in turn like some small city, cannot the various parts of the house—atria, *xysti*, dining rooms, porticoes, and so on—be considered miniature buildings?' In *On the Art of Building in Ten Books*, chapter 9, p. 23.

<sup>43</sup> Fritz Neumeyer refers to the house as a 'Muster-Stadt' or 'Haus-Stadt'; in 'Architektonisches Enigma: Ein Ganzes für sich und eine Einheit aus Einzelheiten', in *Oswald Mathias Ungers: Architektur 1951–1990*, pp. 8–9. The other important themes, such as positive and negative spaces, and the first publication of the house in *Bauwelt* (22.02.1960) are discussed by Cepl, *Oswald Mathias Ungers*, pp. 47–56.

<sup>44</sup> Aldo Rossi is 'Un giovane architetto tedesco: Oswald Mathias Ungers / A Young German Architect: Oswald Mathias Ungers', *Casabella continuità*, 244 (1960), 22–35.

<sup>45</sup> See Neumeyer, 'Architektonisches Enigma', p. 9.

deduction of elementary form from its architectural structure.<sup>46</sup> Thus, design means most importantly the rational expression of a building's 'objective structural moment', the understanding of the 'design elements, which the architect utilises to express and make visible his idea'.<sup>47</sup> Ungers defines design as the 'formation of spaces and the design of figures, which delimitate the space'—such as the igloo as an example of an enclosed space and Stonehenge exemplifying an open and in-between space limited by figures. This proposes architecture first as a disciplinary concern with enclosing an interior, which only afterwards becomes rooted in a physical and socio-cultural context. The three fundamental principles of constructing a form are illustrated by his 'tool kit', which allows the definition of a cube through lines, surfaces, and volumes.<sup>48</sup> By combining linear, surface, and volumetric construction through systematic addition, combination, and intersection, a progressively complex and morphological composition is achieved, creating interactions between inside and outside, positive and negative, and enclosed and delimited spaces, and finally resulting in the dissolution of individual constructive elements in unified three-dimensional spatial complexes (*Raumkomplikationen*).

Coinciding with his teaching at the TU Berlin in 1963–64, Ungers developed an interest in ordering spatial and typological principles in his design work, notably in a proposal for student housing in Enschede with Jürgen Sawade and Jonas Geist, which he later described as his 'very personal manifesto of a morphological architecture'.<sup>49</sup> Ungers later claimed that the preliminary design studies were inspired by Durand's geometrical methodology and aimed at deriving an 'encyclopaedia of forms' and spatial morphologies with increasing complexity—from single to group-forms—by applying incremental modifications of 'rupture, folding, repetition, superimposition, subdivision, permutation, doubling, reflection, arrangement in series, etc' to the basic geometries of circle, square, and triangle.<sup>50</sup> The resultant matrix of formal transformations catalogued possible combinatory figures and compared important instances that would form a complementary and complete set. This was directly implemented as a design solution, forming a grid that included the full morphological range of positive and negative spatial formations. The intended morphological completeness and rich mix of housing typologies was characteristic

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<sup>46</sup> Compare Oswald Mathias Ungers, 'Berufungsvortrag: Zu den Prinzipien der Raumgestaltung', in *Lernen von O. M. Ungers*, ed. by Erika Mühlthaler (Aachen: Arch+ Verlag, 2006), p. 32.

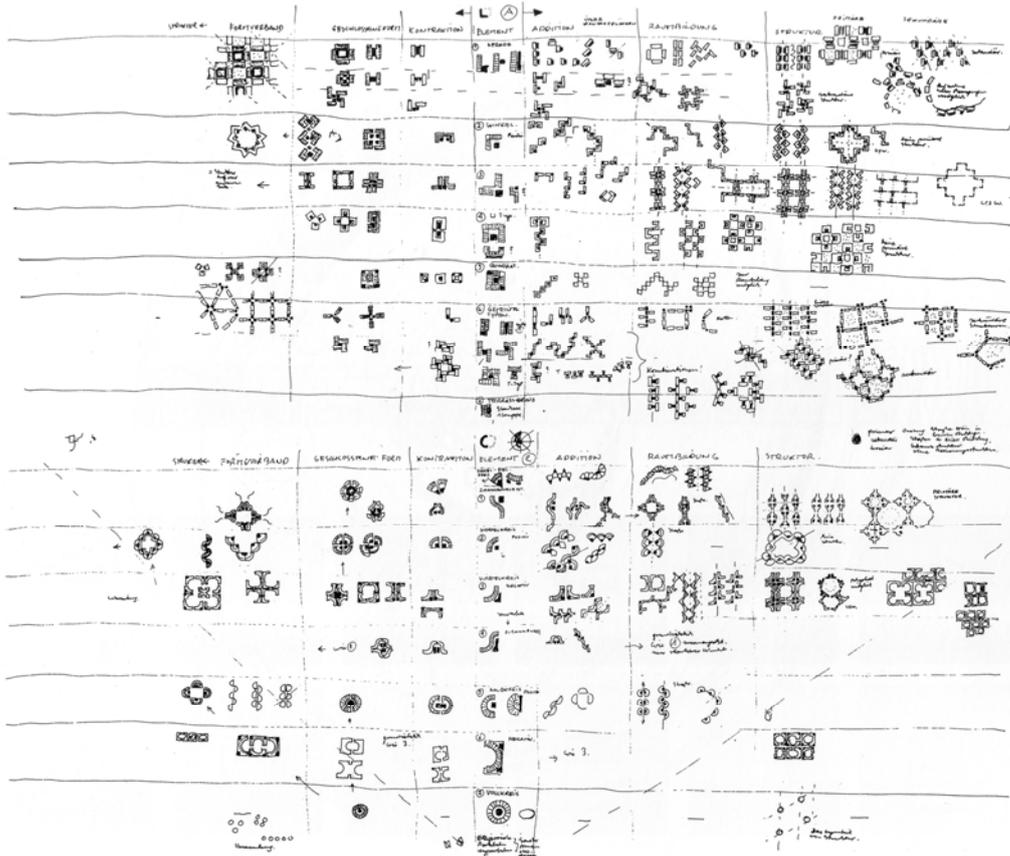
<sup>47</sup> 'Nicht das künstlerische Moment soll mit diesem Begriff erfasst werden, sondern der objektiv strukturelle, das sich im Bauwerk als ein klares Prinzip äußert. Mit anderen Worten die Gestaltungselemente, deren sich der Architekt bedient, um seine Ideen auszudrücken und sichtbar zu machen.' Ungers, 'Berufungsvortrag' in *Lernen von O. M. Ungers*, p. 32.

<sup>48</sup> The 'conceptual' construction kit consists of 12 rods, 6 surfaces, and 1 cube.

<sup>49</sup> 'Enschede ist [...] das ganz persönliche Manifest einer morphologischen Architektur'. This sentence was later added to the German edition of Oswald Mathias Ungers, *Die Thematisierung der Architektur* (Zurich: Niggli, 2011), p.29. The submission date of the project was 3 February 1964.

<sup>50</sup> Oswald Mathias Ungers, *Architettura come tema / Architecture as Theme* (Milan: Electa, 1982), p. 23. Ungers's sustained interest in Durand is evidenced by the inclusion of Antonio Hernandez's paper 'Jean-Nicolas-Louis Durand und die Anfänge einer funktionalistischen Architekturtheorie' in the symposium *Architekturtheorie* at the TU Berlin in 1967. Cepl however claims that the reference to Durand was a post-rationalisation by Ungers; see *Oswald Mathias Ungers*, p. 162.

of Ungers's notion of dialectical design, in which formal and socio-cultural aspects, different individual and collective ways of living, were deemed embodied in the complementarity and differences of morphological fragments. Even though he later admitted that the literal translation of a formal syntax into a design proposal results in absurdity, he attributed this failure not to the syntax but a lack of limitation and content.<sup>51</sup>



**Fig. 16** Detail of an incomplete morphological code based on fundamental geometric forms and their variants  
From Oswald Mathias Ungers, *Architettura come tema/ Architecture as Theme* (Milan: Electa, 1982)

Ungers understood the morphological principles of design as a typological means of analysis, which was evident in his paradigmatic study of museums in his seven Berlin Lectures from 1964 to 1965. By synoptically viewing the compositional elements of the museum type and drawing out different lines of development, the lectures sought a new classification and morphological sequence of museums according to formal-aesthetic criteria rather than functional and historical aspects. Although the comparative study took into consideration the effects of lighting, curation, and stylistic elements on architectural composition, the principal aim was to delineate a universal architectural system applicable to all formal types. Ungers groups the museum into three main types, which borrowing from Friedrich Ostendorf's *Theorie des architektonischen Entwerfens* (1913) are: one-room buildings, multi-room buildings, and building complexes.<sup>52</sup> He first distinguishes between

<sup>51</sup> Rem Koolhaas and Hans-Ulrich Obrist, 'An Interview with O. M. Ungers', *Log*, 16 (2009), 50–95 (p. 71).

<sup>52</sup> Compare Oswald Mathias Ungers, 'Berliner Vorlesungen 1964–65', *ARCH+*, 179 (July 2006), 20–139. On Ostendorf's influence, see Cepl, *Oswald Mathias Ungers*, p. 179.

'one-room, unoriented buildings' with a self-contained form based on a square, rectangular, or circular plan. He then classifies 'one-room buildings with a defined surrounding-space' (*Umraum*), regular buildings defined by enclosing figures or irregular buildings with an axial extension to a defined exterior. While these buildings are generally self-contained, their main spaces are defined by limiting figures. Next Ungers discusses 'multi-room buildings with equal disposition', buildings that have comparable yet (stylistically) differentiated spatial units disposed within a coordinating matrix organised by an enfilade, corridor access, or connecting elements. At times, these buildings form an inner courtyard, an exterior but enclosed centre integrated with the interior. Access also structures the following category of 'multi-room buildings with a clear configuration', in which spatial units are ordered by a connecting element (aisle, gallery, corridor, arcade, pergola, alley, street, boulevard, avenue, and square) that either forms a link with multiple directions, a single sinuous link between two points, a linear link, or a connection in the form of a spiral. Through the combination of connection types, a multitude of enclosed and delimited spaces is created. Finally, Ungers analyses 'building complexes with a simple or compound composition of building elements', complexes that are either centred and have multiple directions—ranging from linear to a cruciform configuration and from a cruciform to a free-form arrangement around an open centre—or are centre-less and unoriented—with an accumulative or combinatory arrangement without an apparent ordering principle other than functional or compositional criteria. Concluding the Berlin Lectures, Ungers returns to a discussion of the Pergamon Museum by Fritz Wolff, with which he began his museum studies: 'The concept of the Pergamon Museum was a house in the house, that in enclosing enclosed, within the precious the even more precious, within the visible the invisible. A metaphor thus for all that unfolds.'<sup>53</sup> This statement conveys his morphological concept as a general typological reading, with typology providing the constraints in which differences occur and permitting the structural scalability of architecture—from the room to the city. But it also acknowledges the importance of cultural content to architecture.

Ungers's wide-ranging concern with morphological types at the TU Berlin is well documented in the twenty-seven self-published *Veröffentlichungen zur Architektur* (1965–69), which demonstrate his interest in structural group forms and their formal and constructive systematisation, infrastructure, the new qualities of housing as a multi-scalar problem, and a structural and iconographic repertoire of forms and their relation to the design of architectural and urban blocks. For example, *Großformen im Wohnungsbau* (1966) exemplifies these interests, with Ungers expanding his morphological understanding of architectural form to the monumental, urban scale—a scale of megaforms made inevitable by the vast demand for housing, the disparity between cost and productivity in

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<sup>53</sup> 'Das Konzept des Pergamonmuseums war ein Haus im Haus, das im Umschließenden das Umschlossene, im Kostbaren das noch Kostbarere, im Sichtbaren das noch Unsichtbare suchte. Eine Metapher also für alles, was sich entfaltet.' Ungers, 'Berliner Vorlesungen 1964–65', p. 139 [trans. mine].

construction, and the shortage of urban development land.<sup>54</sup> Occurring at different architectural and urban scales, megaforms (*Großformen*) are to Ungers defined by a dominant element, a connecting element, figure and theme, and an ordering principle. From this he derives four interrelated concepts as constituting megaforms: the functional aspects of street and plateau, and the formal elements of wall and tower.<sup>55</sup> 'Megaform creates the framework, the order and the planned space for an undefined, unplanned for, spontaneous process—for parasitic architecture [...] without which any planning remains strict and lifeless.'<sup>56</sup> The megaform conceptually highlights two important aspects of Ungers's design theory, that of infrastructure and urban planning. His reading of the megaform as an object-form with autonomous character that is embedded, nevertheless, into an urban reality and life, anticipates his idea of the green archipelago.<sup>57</sup>

Having left Berlin after a series of events culminating in 1967—the student radicalisation and protests at his international symposium on architectural theory, and humiliating public reception of his Märkisches Viertel (1962–67), after which he would not build again for fifteen years—Ungers on invitation by Rowe left the following year to teach at Cornell University. However, Ungers remained greatly interested in the architectural debate in Germany and the formative theoretical themes that he had developed in the unique situation of Berlin, continuing to study the design problem of mass-housing, prefabrication systems, and infrastructure.<sup>58</sup> However, having fallen out with Rowe and tired of America, Ungers in 1974 began his return to Germany and to practice.<sup>59</sup>

With a renewed interest in practice, spurred on by new competition entries such as the Wallraff-Richartz-Museum (1975), Ungers consolidates his design theory by repositioning his ideas on morphology. In a lecture 'Projekte als typologische Collagen' in 1975, he speaks of design as a 'continuous experiment', and translated into English as 'Planning Criteria' (1976), it proposes five design principles: a 'dialectical process with a reality as

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<sup>54</sup> Compare O. M. Ungers, *Großformen im Wohnungsbau*, ed. by Hartmut Schmetzer and Ulrich Flemming, Veröffentlichungen zur Architektur, 05 (Berlin: TU Berlin, Lehrstuhl für Entwerfen und Gebäudelehre, 1966; repr. Berlin: Universitätsverlag der TU Berlin, 2007). An untitled English excerpt appeared in *Team 10 Primer*, ed. by Alison Smithson (Cambridge, MA: MIT Press, 1968), p. 18.

<sup>55</sup> Ungers saw the street, a linear infrastructural element combinable to a network, and the plateau, a layered surface element, as urban spaces connecting individual parts and defining the horizontal and vertical limits. These are complemented by the wall, a horizontal linear surface element that separates and encloses but also links, and the tower, a vertical yet formally closed and unoriented spatial (and symbolic) landmark that can aggregate to form gates or chains. The bridge was to Ungers a special case of the street and the enclosed courtyard block, similarly, a particular condition of the wall, which discloses his interest in morphological and topological differences rather than common underlying typologies.

<sup>56</sup> O. M. Ungers, 'Notes on Megaform', trans. in *Großformen im Wohnungsbau* (2007), p 7.

<sup>57</sup> Compare Erika Mühlthaler, 'Megaform in der Stadt. Von OMU zu OMA', in *Großformen im Wohnungsbau* (2007), p. 41.

<sup>58</sup> On the circumstances surrounding Ungers's move to America and his persistent interest in Berlin see André Bideau, 'Elusive Ungers', *AA Files*, 64 (2012), 3–14.

<sup>59</sup> On the complex relationship between Rowe and Ungers compare Cepl, *Oswald Mathias Ungers*, pp. 287–91; and Yehre Suh, 'Rowe x Ungers: Untold Collaborations', *The Cornell Journal of Architecture*, 8 (2011), 17–20.

found', considering the locality and its economic, social, and real conditions, on which the remaining four principles are based, the interrelation of planning principles and accidents, the plurality of architectural solutions, architecture as an environment or 'the urban characteristics of architecture', and architecture as a minimum planned solution allowing adaptation and participation by its users.<sup>60</sup> This summarises and concludes the architectural concerns that Ungers developed in Berlin and America. Aligned with Team 10, architecture is presented as a structural framework and infrastructural diagram, a minimum plan, responsive to the reality of context and users—a shift evident in the new title that replaces an emphasis on typology with that of architecture as a problem of planning.<sup>61</sup>

At the same time as 'Planning Criteria', Ungers propounds a new design methodology in 'Designing and Thinking in Images, Metaphors and Analogies' (1976), which in accordance with Herman Friedman argues that the visual sense is the most productive to correlate ideas and forms, and that design is methodically based on images—the latter an argument he credits to Rudolf Schwarz's analogy of architecture as images.<sup>62</sup> The pivotal role of metaphors and images in Ungers's paradigm shift is an attempt to overcome procedural and formal complexity and a lack of content in design, which he admitted having pursued in projects like Enschede, with metaphor and image the mechanism to synthesise factual, analogical, and conceptual realities. This privileges creative thinking and a dialectical process by considering both thesis and antithesis, and contrasts empirical with phenomenal and experiential thinking. Especially the experiential, so Ungers, accesses imagination and ideas, which in their relations closely resemble the human thought process—whereby an imagination becomes an idea, according to which an object is generalised into an image that allows the determination of its specific properties. Ungers now advocates a 'sensuous perception' of reality through ideas, which creatively unify elements into complementary wholes and establish a higher order—with order originating from the 'strong metaphysical desire to create a reality structured through images in which objects become meaningful through vision'.<sup>63</sup> However, design is neither entirely an imagination or psychological experience nor a functional and procedural operation. Design is a multi-layered transformation requiring a different understanding of morphology, one in which reality is imaginatively transformed like 'Gestalten in their metamorphosis' and

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<sup>60</sup> Oswald Mathias Ungers, 'Planning Criteria', *Lotus International*, 11 (1976), 13. The preceding German presentation was published as 'Projekte als typologische Collagen', in *Dortmunder Architekturtage 1975: Das Prinzip Reihung in der Architektur*, ed. by Josef-Paul Kleihues und Heide Berndt (Dortmund: Universität Dortmund, 1977), pp. 169–71.

<sup>61</sup> In particular Ungers was influenced by Shadrach Woods's lecture 'Words and Pictures: The Designer's Dilemma' given at the symposium 'Architekturtheorie' in 1967 at the Technische Universität Berlin; compare Cepl, *Oswald Mathias Ungers*, p. 192.

<sup>62</sup> 'Designing and Thinking in Images, Metaphors and Analogies' was first published in 1976 for the exhibition 'MAN transFORMS' at the Cooper-Hewitt Museum curated by Hans Hollein. It is based on a shorter text 'Remarks on Design Methodology' by Ungers, see Peter Riemann, 'OMU and the Margritte Man', in *Lernen von O. M. Ungers*, p. 177. On the influence of Schwarz on Ungers, see Koolhaas and Obrist, 'An Interview with O. M. Ungers', p. 61; and Neumeyer, 'Architektonisches Enigma', pp. 16–17.

<sup>63</sup> Oswald Mathias Ungers, 'Designing and Thinking in Images, Metaphors and Analogies', in O. M. Ungers, *Morphologie, City Metaphors* (Cologne: Verlag Walter König, 1982), p. 8.

concepts of an 'unrelated, diverse reality' are formed, but although welcoming the accidental, imagination remains restricted by rational ideas.<sup>64</sup> According to Ungers, this morphological thinking and designing occurs in the synthesis demanded by images, metaphors, models, analogies, symbols, and allegories, which rather than an analysis is 'meant to be a transition in the process of thinking from a metrical space to the visionary space of coherent systems, from the concepts of homology to the concepts of morphology', and from a thinking of simplicity to that of complexity.<sup>65</sup> Nevertheless, Ungers recognises that quantitative sciences are irreplaceable by qualitative values and necessary for the control of form by aspects of functions.<sup>66</sup> Similar to Rossi, Ungers accepts the functional problem but retreats to a self-referential narrative and meta-theory of design based on visual analogies, justified by a structuralist reading. He opportunistically adopts a 'symbolic capital', as André Bideau calls it, to reply to a new postmodern and global urban crisis of identity.<sup>67</sup>

As Gregotti writes, Ungers 'unceasingly weaves a web of answers, a rigid range of syntactical alternatives which seem to be aimed at exhausting all the permutations of a linguistic typology of architectural solutions: a procedure which is wholly directed towards meaningful and constructive choices. These choices, in Ungers' scheme of things, stress above all the concept of place, both spatial and historical.'<sup>68</sup> As ordering principles, Ungers's notion of morphological transformation utilises the analysis of typological-structural systems and iconographic images as morphological-synthesising ideas. Understood as a dialectical design process, his definition of typological solutions in architecture relies on it. Ungers in *Architecture as Theme* of 1982 elaborates the problem of order. A building without a theme, he declares, is devoid of ideas and humanism, and is condemned to satisfying need alone, as only the theme that emerges from within architecture itself provides a building with content.<sup>69</sup> The theme as a higher ordering principle requires abstraction and derives from immutable and fundamental spatial concepts specific to the architectural discipline, with its archetypes and prototypes independent from any external influences.<sup>70</sup> Given the inability of architecture to express emotion, intuition, and thought like other arts, Ungers implicitly shares Quatremère's conviction that abstraction constitutes a form of typal clarification: 'The focus of the New Abstraction is architecture as idea, as concepts, as themes. It is concerned with the autonomy of the architectural language.'<sup>71</sup> As Ungers states in *Architecture as Theme*,

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<sup>64</sup> Ungers, 'Designing and Thinking in Images, Metaphors and Analogies', p. 9.

<sup>65</sup> Ungers, 'Designing and Thinking in Images, Metaphors and Analogies', p. 14.

<sup>66</sup> Ungers, 'Designing and Thinking in Images, Metaphors and Analogies', p. 14.

<sup>67</sup> See André Bideau, *Architektur und symbolisches Kapital: Bildererzählungen und Identitätsproduktion by O. M. Ungers* (Basel: Birkhäuser, 2011).

<sup>68</sup> Vittorio Gregotti, 'Oswald Mathias Ungers', *Lotus*, 11 (1976), 12.

<sup>69</sup> Compare Ungers, *Architecture as Theme*, pp. 9–10. Ungers blames Semper's *Der Stil* for causing the reduction of architecture to an applied art through an implied materialism.

<sup>70</sup> Compare Oswald Mathias Ungers, 'The New Abstraction', *Architectural Design*, 53 (7/8, 1983), 36–37.

<sup>71</sup> Ungers, 'The New Abstraction', p. 36.

morphological transformation is instrumental to conceptualise and visualise the necessary abstraction through rational and iconographic themes. Transformation is the fundamental dialectical design principle and can be 'seen as a process that exerts a determining influence on creative thought, since not only does it inform thought as far as contrast and alternatives are concerned, but above all with respect to complex interdependencies and correlations'.<sup>72</sup> Thus, morphological transformation as an epistemological category constantly insists on a re-articulation of culture and nature through the new knowledge and forms it creates.

When architecture is seen as a continuous process, in which thesis and antithesis are dialectically integrated, or as a process, in which history is as closely involved as anticipation of history, in which the past has the same weight as looking forward to the future, then the process of transformation is not only the instrument of design, but it is the very object of design. At the same time it becomes possible to make reference to the specific reality of each individual site where the architecture will be built—and therefore to the *genius loci*—and to discover the poetry of the place and give it expression.<sup>73</sup>

By suspending architecture and the city in a permanent state of development, a unified image of the city is unobtainable. Ungers therefore reads the city's formation as dialectically constituted by discontinuities, superimpositions, and complexities, in Nikolaus von Kues's terms as the 'coincidence of opposites' (*coincidentia oppositorum*), which are methodologically useful to design.<sup>74</sup> Ungers hereby refers to urban collage and fragments, a 'theme of assemblage', however not in the sense of *Collage City* as a general juxtaposition of architectural figures and textures that reconcile the dichotomy of the modern and historical city, but in terms of contextual form that respects its *genius loci* and is designed according to higher conceptions that unify unresolved contradictions.<sup>75</sup> This notion of *genius loci* somewhat differs from Rossi's, who links it to architecture's singularity and to permanences that are fundamental to urban collective memories. 'The contemporary town', Ungers writes, 'is not one but many places. It is a complex, many-layered, multifarious structure, made up of complementary and interconnected ideas, concepts and system.'<sup>76</sup> Unlike Rossi's permanences, this suggests architecture as complementary contradictions and discontinuities, evident in such designs as the Museum Preussischer Kulturbesitz (1965) that explore independent fragments linked as well as separated by an arcade, or the Wallraf-Richartz Museum (1975) that despite its rigorous grid celebrates discontinuous and ambivalent typologies. Ungers rejects Rossi's analogical,

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<sup>72</sup> Ungers, *Architecture as Theme*, p. 13.

<sup>73</sup> Ungers, *Architecture as Theme*, p. 15.

<sup>74</sup> Ungers, *Architecture as Theme*, p. 33.

<sup>75</sup> Ungers, *Architecture as Theme*, p. 33.

<sup>76</sup> Oswald Mathias Ungers and Stefan Vieths, *Oswald Mathias Ungers: The Dialectic City* (Milan: Skira, 1997), p. 17.

formal continuity achieved by typological reduction, and seeks morphological transformations to enrich formal typologies. Consequently, 'collective memory' does not signify a Rossian formal persistence perpetuated by social agreement, but individualistic remembering and relating of the past to the future through visionary imaginations that transcend reality—exemplified by Marco Polo's memories of cities in Italo Calvino's *Invisible Cities* (1972) or Hadrian's Villa as a recollection of the Roman empire.<sup>77</sup> Collective memory denotes to Ungers a continuous formation and morphological transformation of archetypes, rearticulated as new fragments that dialectically complement each other's uniqueness and commonality.

Ungers famously recognises this kind of collective memory in the principle of transformation as a morphological series in 'urban gardens', especially Schinkel's Schlosspark of Glienicke in Berlin—and this belated understanding of Schinkel's morphology formed a 'retroactive manifesto' for his own early work.<sup>78</sup> In a juxtaposition of tree trunks with the different development states of columns, Glienicke demonstrates a transformational sequence from nature to culture. Despite its stylistic achievements and complexity, Schinkel's architectural doctrine was above all devoted to unifying opposites into wholes and had a great affinity with von Kues's 'coincidence of opposites'. Thus, Ungers argues as early as 1975 but only writes in 'Five Lessons from Schinkel's Work' (1981), that his triumph was foremost intellectual and implied a typological and morphological method.<sup>79</sup> The lessons to be learnt from Schinkel are, first, the importance of the dialectical principle: recognising an intellectual unity in formal diversity and the continuity of history and ideas within the development of thesis and antithesis. Second, the idea as a fundamental principle of form, existing as recurrent and spiritual but also atemporal and acontextual themes. Third, when these formal ideas are confronted with the reality of the *genius loci*, they change and synthesise existing form by altering its Gestalt through morphological transformations. Thus, fourth, the continuity of history is acknowledged as a process of formation, whether that of a place or of humanistic consciousness, and has an uninterrupted development in which inevitably occurring contradictions and differences become related and unified over time. Fifth, this unification of opposites—of nature and culture—is a historical process of constant transformation revealing the morphological whole.

Ungers's concept of morphological transformation is already evident in the theme of the 'doll within the doll' and its reiterations, which he posited in the conclusion of the Berlin Lectures. The interrelation of architecture and city suggests an architectural urban form and

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<sup>77</sup> O. M. Ungers, 'L'architettura della memoria collective: L'infinito catalogo delle forme / Architecture of Collective Memory: The Infinite Catalogue of Urban Forms', *Lotus International*, 24 (1979), 4–11.

<sup>78</sup> Koolhaas and Obrist, 'An Interview with O. M. Ungers', p. 77.

<sup>79</sup> Oswald Mathias Ungers, 'Five Lessons from Schinkel's Work', *Cornell Journal of Architecture*, 1 (1981), 118–19. Ungers discussed Schinkel's Glienicke first at a symposium, published in *Entwerfen in der historischen Straße. Arbeiten des IDZ Symposiums im Herbst 1975 zur baulichen Integration Alt—Neu*, ed. by Martina Schneider (Berlin: Abakon, 1976), pp. 82–97; compare with Cepl, *Oswald Mathias Ungers*, pp. 326–27.

vision, and presumes a morphological scalability of types, which to Ungers are embodied amongst others in the structural concept of 'megaform' or 'urban villa' that have essentially no scalar or typological specificity.<sup>80</sup> Morphological transformation and the 'doll within the doll', despite appropriating a universal basis of form, conceptually contradict typisation, standardisation, and economic reduction, and as anticipated in Ungers's first architectural manifesto 'Towards a New Architecture' (1960) with Reinhard Gieselmann, argue for the creative processes of architecture and their individuality and independence.<sup>81</sup> Amongst numerous projects to which Ungers applied the different guises of the concept, the Deutsches Architekturmuseum (1978) in Frankfurt with its 'house within the house' is perhaps the most literal, as the museum is built in and around an existing urban villa.

The superimposition, extension, and contradiction inherent to the concept of the 'doll within the doll' results, so Ungers, in a continuous historical process or a design that attempts to deliberately rupture continuity and force change. Thus, either time or design challenges the separation of inside and outside, the opposition of enclosed and enclosing, and the contradiction of figure and space: the formative and complementary elements of architectonic space. Ungers's concept of complementary architectonic space as ambivalent and simultaneously creating an architectural interior and urban exterior (room) and which also underlies his idea of the house-in-the-house principle, owes to Sörgel's aesthetic-artistic concept of architecture as Janus-faced.<sup>82</sup> However, this notion of architectonic space in fact was first conceptualised by Semper's *four elements of architecture* as representing the tectonic elements by which the relationships of social groups are materially manifested as spatial formations, from the interior of the house to the exterior of the city.<sup>83</sup> While the socio-cultural context conditions the specific transformation of the four elements, it is principally through the motive of *dressing*, the question of the envelope and its definition of an interior and exterior, that the necessary material transformations preceding new spatial formations and conceptions are enacted. Thus, when Ungers agrees with Sörgel that wall, column, and building define both an inside and outside space, he can be said to agree with Semper's double meaning of the dressed wall.<sup>84</sup> Ungers also implicitly shares with Semper a humanist view of architecture as a spiritual and cultural expression, but his understanding of its social value differs. Although believing in the social responsibility of the architect, architecture is autonomous and apolitical to Ungers:

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<sup>80</sup> Ungers developed his concept of *Großform* in a lecture of 1966, and the theme of the 'urban villa' was first explored in the competition proposal for the 4<sup>th</sup> Ring in Berlin-Lichterfelde (1974).

<sup>81</sup> Compare Oswald Mathias Ungers and Reinhard Gieselmann, 'Towards a New Architecture', in *Programs and Manifestoes on 20th-Century Architecture*, ed. by Ulrich Conrads (Cambridge, MA: MIT Press, 1970), pp. 165–66.

<sup>82</sup> See Oswald Mathias Ungers, 'Das Janusgesicht der Architektur', based on Sörgel's *Architektur-Ästhetik*, in O. M. Ungers, *Sieben Variationen des Raumes über die Sieben Leuchten der Baukunst von John Ruskin* (Stuttgart: Hatje, 1985), repr. in *Oswald Mathias Ungers: Architektur 1951–1990*, pp. 231–32.

<sup>83</sup> Compare Andreas Denk, 'Der Ursprung des Raums: Gottfried Semper und die Poetik der Stadt', *Der Architekt*, 6 (2009), 59–65.

<sup>84</sup> Compare Ungers, 'Das Janusgesicht der Architektur', p. 232.

'Architecture is not a function of something else. It is no substitute, and can solve neither economic nor social problems.'<sup>85</sup>

In the urban context, Ungers's 'city within the city' has therefore no political intent but arises from the 'theme of assimilation or the adaption to the genius loci' and as a contextual architecture engaged with its contradictory tradition and history. 'Contradiction emerges', Ungers states, 'as the principle of city planning', and the 1977 study of the 'City within the City' in Berlin was an attempt to grasp this dialectical contradiction, but the pure form had to be recognised first, 'in order to be able to apply the dialectical principle'.<sup>86</sup> This recognition requires first an understanding of 'found' formative types and their implied morphological transformations that together could provide a specific syntax for design and its content in dialectical thesis and antithesis. For instance, architectural typology in a study for Marburg in 1976 is only recognised when 'a multifarious whole is formed, yet one in which every single building retains a recognisable identity'.<sup>87</sup> Accepting the individual townhouse as the 'found' typological form on which a design principle and 'theme of assimilation' is based, Ungers's proposal for Marburg reinterprets the type of the townhouse as a continuous individualisation within the urban block. This design strategy of typological reinterpretation—often dealing with either a building or block typology—is common to many of Ungers's projects that explore the creative possibilities of existing typological form and morphological situation. Having determined a typological framework, subsequent design explorations focus on the expression of smaller elements within the architectural plan and elevation, which are once again differentiated and intensified in their ambivalence by 'bringing poetics into the architectural language' and creating new readings of the existing and proposed without making temporal-historical references, thus, reinforcing architecture's autonomy throughout the different levels of typo-morphological articulation.<sup>88</sup>

Typological thought connotes more to Ungers than just types as patterns or concepts, and is part of a necessary interim process of structuring and classification without reduction to a limited number of types and meanings as stereotypes. Typological reasoning signifies to him a creative process that relies on analogies, images, and metaphors, and is a means of recognising, in a Goethean sense of morphology, transformable types and archetypes and 'defines a way of thinking in basic all-encompassing contingencies, of having a universal view of the world of ideas, as well as that of reality'.<sup>89</sup> Ungers laments that the stereotypes of pragmatic functionalism or the clichéd decorated shed emptied architecture of cultural and intellectual content by denying the significance of the historical process and isolating

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<sup>85</sup> Oswald Mathias Ungers, 'Aphorism on Architecture', in *Oswald Mathias Ungers: Works and Projects 1991–1998*, ed. by Giovanni Crespi (Milan: Electa Architecture, 2002; first published in Italian and German in 1998), p. 9. Ungers restates this point in Koolhaas and Obrist, 'An Interview with O. M. Ungers', p. 65.

<sup>86</sup> Koolhaas and Obrist, 'An Interview with O. M. Ungers', pp. 66–67.

<sup>87</sup> Ungers, *Architecture as Theme*, p. 79.

<sup>88</sup> Ungers, *Architecture as Theme*, p. 85.

<sup>89</sup> Oswald Mathias Ungers, 'Dieci opinioni sul tipo / Ten Opinions on the Type', *Casabella*, 509–510 (1985), 93.

type within a specific moment. However, typological thought is not concerned with *what* but *how* we understand reality through the continuity of a typological sequence and its morphological transformation in time. For that reason, architecture is a recurrent rediscovery and reinterpretation of already existing themes and types. Type is to Ungers an abstract ideal that only structures the thought by which architecture is transformed within a typological sequence, in order to bring an ideal vision of the city into reality. Classification is therefore not an end but a means of architectural design. The contradictions and correlations arising between abstraction and reality, idea and concept, are embraced by Ungers, and are the possibility or characteristic of infinite morphological transformations. Morphological thought is, on the one hand, ‘the ability to see things in complementary relationships’ and, on the other, means ‘to recognize and discover basic types’, with this seeing-recognising not only deriving from rational analysis but equally from imagination and thematic images.<sup>90</sup> Frampton refers to Ungers’s multiple approach to typology thus as a subversive ‘fugal attitude’.<sup>91</sup> Conceptualising basic types as images, their manifold qualities are revealed as ‘complementary contradictions’ and artistic possibilities, allowing a creative transformation of the past and its adaptation to the present independent of their styles. Typological thought accordingly is concerned with unifying the whole, whereby the aim of its transformation and change is to turn architecture creatively and spiritually into an element of culture by bringing together physical and socio-cultural forms and meanings. Despite existing hereby possessing an ahistorical quality, typological thought is specific to a place, a real and intellectual or social space, where opposites and limitations are resolved by an ‘intellectual universal’.<sup>92</sup> ‘In this process’, Ungers concludes, ‘typological thinking is both a prerequisite and method.’<sup>93</sup> Architecture as defined by its relationship to a place and its formal type, obtains its specific typological and morphological formal language.

The formal language of architecture is a rational, intellectual one, a language of reason. Emotions and fantasy are controlled by *ratio*, which in turn stimulates the imagination. The dialectical process between these two polarities—reason and emotion, *ratio* and imagination, idea and reality—is inherent in the creative act and results in the continual development of ideas, concepts, spaces, elements, and forms. It involves the idea of abstraction, the recognition of the object in its elementary form, and appearance in its clearest Gestalt.<sup>94</sup>

The concept of dialectical and complementary contradiction is summarised by Ungers in *The Dialectic City* of 1997, which is a critique of urban unified systems—predominantly

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<sup>90</sup> Ungers, ‘Ten Opinions on the Type’, 93.

<sup>91</sup> Kenneth Frampton, ‘O. M. Ungers and the Architecture of Coincidence’, in *O. M. Ungers: Works in Progress 1976–1980*, ed. by Kenneth Frampton, Catalogue 6 (New York: Institute for Architecture and Urban Studies, 1981), p. 3.

<sup>92</sup> Ungers, ‘Ten Opinions on the Type’, 93.

<sup>93</sup> Ungers, ‘Aphorism on Architecture’, p. 9.

<sup>94</sup> Ungers, ‘Aphorism on Architecture’, p. 9.

based on variations of urban blocks and solitary buildings—and ideological, thesis-driven urban design that understands the city as a totality but not a whole. Obsolete unified systems, according to Ungers, often appear as a city of pure communication, as in the utopian and ‘virtual city’, while a futile ideological urban design results in unfounded speculations and a regressive ‘fantasyland’.<sup>95</sup> Both fail to grasp the postmodern urban conditions arising in a city of heterogeneous structures and functions that can only be resolved by the ‘coincidence of opposites’, thus Ungers proposes two dialectic strategies: the strategy of ‘complementary places’ and the strategy of the ‘city as layer’.<sup>96</sup> The strategy of complementary places is a reading of the ‘city within the city’ and a methodical analysis of complementarities between contrasting and significant places, which constitute the different aspects of the modern city as a whole. This identifies, defines, and develops the specificity of a particular place by either introducing lacking or improving existing functions and, despite reinforcing the self-containment of places, establishes new urban part-to-part and part-to-whole relations.<sup>97</sup> This strategy is a process of discovery, an analysis and rebuilding of existing fragments and implies the possibility to establish a full morphological range of types. Contrasting with this morphological approach, the second strategy of the city as layer is structural and utilises the various layers of infrastructures, amenities, and buildings as an additive system in which each layers can be isolated for rational analysis and urban design intervention. Through the rationality afforded by comparative analysis and incremental addition, the structural superimpositions of layers create an increasing complexity and act as a planning instrument that orders the otherwise heterogeneous postmodern city.

Despite stating in *The Dialectic City* that a strategy of layering has a higher degree of control over form and geometry, and is therefore directly relevant to design, it is the strategy of the ‘city within the city’ that is most operative to Ungers’s own urban designs. The strategy was first formulated as a form of urban analysis in the Berlin Summer Academy of 1977 by Ungers with students from Cornell and Rem Koolhaas. Despite its superficial similarities with the thesis of the ‘The City within the City’ by his friend Léon Krier, also published in 1977, the way they identify the idea of the city within urban fragments is fundamentally different.<sup>98</sup> Whereas Krier’s idea is normative, Ungers envisions a fragmented city of total difference in which each place is independent and complementary to each other and has particular typological characteristics that are intensified, once again assuming that a full morphological range of types can be conveyed.

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<sup>95</sup> Ungers and Vieths, *The Dialectic City*, pp. 11–17.

<sup>96</sup> Ungers and Vieths, *The Dialectic City*, p. 17.

<sup>97</sup> Ungers and Vieths, *The Dialectic City*, pp. 19–20.

<sup>98</sup> Léon Krier contended that an ideal city had to be a federation of no more than four autonomous urban quarters, limited in size (less than 35ha and 15,000 inhabitants) and with each retaining their characteristic differences. Each quarter, he demanded, should have its own identifiable centre and periphery, be walkable (10 min) and essentially provide all the functions (dwelling, working, leisure) and formal elements and types of a traditional and historical city. See, ‘The City Within the City’, *A+U*, (1977), Special Issue, 69–152; repr. in *Architectural Design*, 54 (7/8 1984), Houses, Palaces, Cities, 70–105.

In the case of Berlin, the chosen prototype for differentiation is the 'Urban Villa'.<sup>99</sup> The exceptional situation of Berlin enables Ungers to reverse his previous urban thinking preoccupied with growth and repetition. And premised on Berlin's depopulation and lack of private development, with housing largely built by the state, the concept of the *city within the city* coupled with proposals for *urban villa's* presents the city as an ensemble of architectural fragments, and formulates a critique of prevalent urban design policies and mass housing. With 'Berlin as a Green Archipelago', Ungers reinterprets morphological completeness as complementary morphological transformations, theorising a shrinking city that can obtain its coherence through urban fragments.

The city of exacerbated programmatic and formal difference is intended to preserve and add to the existing, but only within selected areas, offering an opportunity to clarify the 'ideal' vision of the city as a plurality of differentiated urban structures. The Summer Academy of 1977 proposed that formally and programmatically distinct 'city-islands' should be retained and intensified in their character, whereas 'valueless' urban surfaces in-between would be surrendered to nature and turned 'green'. Yet, these urban surfaces would create an infrastructure connecting the urban islands and serve mobility, as well as accommodate special functions and unusual architectural types. Thus, the ideas of a green archipelago and 'city made by islands' are complementary in structural, typological, and programmatic terms. The green archipelago illustrates Ungers's dialectical principle according to which the unity of the city and its parts is conditional to their separation and intensification, an idea further developed in the second Summer Academy under the title of 'Urban Gardens' in 1978. Urban block, villa, and garden challenge the common notion of urbanisation as predicated on growth and view it from the perspective of architectural form and typological relevance, the urban villa, which is to provide urban renewal through a new scale and rich mix of private housing. More importantly, however, the green archipelago rethinks the city through the question of limits and clarification of the urban structure.

The idea of the city within the city is the basic concept for the urban reorganisation of Berlin. It is substantiated by the form of the city as archipelago. The urban islands of this archipelago will develop their character according to their historical premises, social structure, and environmental quality. The city as a whole will be a federation of all these single cities with different structures which will be further developed in a deliberately antithetical manner. A decisive factor for the decisions to be taken in order to select these islands is the degree of clarity.<sup>100</sup>

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<sup>99</sup> The 'urban villa' as a 'multi family dwelling type' was a design study carried out by students at Cornell in the Berlin Summer Academy of 1977 and was complementary to that of 'The City within the City'. It was published by Oswald Mathias Ungers, Hans Kollhoff, and Arthur Ovaska, eds, *The Urban Villa: A Multi Family Dwelling Type* (Cologne: Studio Press for Architecture, 1977).

<sup>100</sup> Oswald Matthias Ungers, Rem Koolhaas, Peter Riemann, Hans Kollhof, Peter Ovaska, 'Cities within the City: Proposal by the Sommerakademie Berlin', *Lotus International*, 19 (June 1977), 82–97 (p. 86).

Koolhaas, a student of Ungers from 1972 to 1973 at Cornell and co-author of the 'City within the City' proposal, had in his own work anticipated a reading of Berlin as an archipelago as early as his Summer Study at the Architectural Association in 1971, recalled in 'The Berlin Wall as Architecture'.<sup>101</sup> The study, so Koolhaas, confronted him with the 'true nature' of architecture, the problem of architectural form versus event, and symbolic versus banal, leading him to conclude that architecture is more about separation and exclusion than liberation, which questioned any socio-political emancipation of architecture and the causal relationship between form and meaning, only leaving the tension between programme and form and architecture's simultaneous impotence and omnipotence.<sup>102</sup> The themes of the Berlin Wall study resurfaced in Koolhaas's second formative project 'Exodus, or the Voluntary Prisoners of Architecture' (1972) with Elia Zenghelis.<sup>103</sup> While 'Exodus' was visibly influenced by Superstudio and Ivan Leonidov, it was more critically informed by the contradictions found in Berlin as an ideal city, a city-island reinterpreted in 'Exodus' as a linear city of islands contained by a wall, thus, Koolhaas's manifesto of 'metropolitan architecture' originated from a reading of Berlin as an archipelago.<sup>104</sup> Berlin as a 'un-city', an archipelago of floating islands within a 'post-architectural landscape', formulated by Ungers and Koolhaas in summer 1977, contained the quintessential thesis of the European city, a city displaced by a 'highly charged nothingness' in which urban solid and metropolitan void could be programmatically and dialectically redefined by what Koolhaas termed 'imagining nothingness'—a recurrent concept in his work.<sup>105</sup>

Koolhaas adopts the analytical principle of distinct architectural islands in *Delirious New York* (1978), but whereas Ungers sees city-islands despite their fragmentary identities in their dialectic as complementary ideal city forms, Koolhaas emphasises their disconnection and generic nature able to receive new identities at will, as with the end of unified urban

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<sup>101</sup> Peter Riemann credits Koolhaas for the idea of the green archipelago in *Lernen von O. M. Ungers*, p. 196. The influence by Koolhaas is however relativised by Cepl, *Oswald Mathias Ungers*, p. 346. Koolhaas himself states: 'In 1976, during a design seminar/studio led by O. M. Ungers, a concept was launched with as yet unrecognized implications: 'A Green Archipelago'. In 'Imagining Nothingness', in *S,M,L,XL* (New York: Monacelli Press, 1995), pp. 199–202 (p. 200).

<sup>102</sup> Compare Rem Koolhaas, 'Field Trip: A(A) Memoir', in *S, M, L, XL* (New York: Monacelli Press, 1995), pp. 212–32. Also see Lara Schrijver, 'OMA as Tribute to OMA: Exploring Resonances in the Work of Koolhaas and Ungers', *The Journal of Architecture*, 13.3 (2008), 235–61.

<sup>103</sup> Koolhaas indicates in *S, M, L, XL* that 'Exodus' was his AA Final Project in 1972. Yet, together with Elia Zenghelis, his tutor at the AA, Zoe Zenghelis and Madelon Vriesendorp, he submitted the project for the competition 'a city with a significant environment' by *Casabella*; published in *Casabella*, 378 (June 1973), 42–45. For a complete publication see Martin van Schaik and Otakar Máčel, eds, *Exit Utopia: Architectural Provocations, 1956–76* (Munich: Prestel, 2005), pp. 236–53.

<sup>104</sup> Compare Fritz Neumeyer, 'OMA's Berlin: The Polemic Island in the City', *Assemblage* 11 (1990), 36–53. The various influences are confirmed by Elia Zenghelis in 'Text and Architecture: Architecture as Text', in *Exit Utopia*, p. 260.

<sup>105</sup> Rem Koolhaas, 'Imagining Nothingness', in *S,M,L,XL*, pp. 199–202. On the relation of Koolhaas's metropolitan thesis to the Berlin Wall study and collaborations with Ungers, see Neumeyer in 'OMA's Berlin'; and Pier Vittorio Aureli, 'The City within the City: Oswald Mathias Ungers, OMA, and the Project of the City as Archipelago', in *The Possibility of an Absolute Architecture* (Cambridge, MA: MIT Press, 2011), pp. 177–227. Neumeyer and Aureli's ideas are re-discussed by Lara Schrijver in 'The Archipelago City: Piecing together Collectivities', *Oase*, 71 (2006), 18–37; and 'OMA as Tribute to OMA', 235–61.

structures each building, each skyscraper, is ideologically understood as a city in itself.<sup>106</sup> 'The Square of the Captive Globe', first conceptualised as a sector in 'Exodus', represents the explicit multiplicity of architectural theories and speculations, and is reinterpreted in *Delirious New York* as 'The City of the Captive Globe', symbolising the incubation of typological diversity and expressing architecture's acquiring of 'Bigness'—a reference to Ungers's *Großform*—which signifies an independence of its parts solely defined by scale, with the urban now dominating architecture.<sup>107</sup> The captive globe illustrates the principal thesis of *Delirious New York*: metropolitan culture is a 'culture of congestion', of hyper-density, perpetual change, and ideology, with architecture conceptually and permanently defined by the metropolitan grid, lobotomy, and schism. The 'grid', Koolhaas writes, with its 'maximum increments of control—describes an archipelago of "Cities within Cities." The more each "island" celebrates different values, the more the unity of the archipelago as system is reinforced. Because "change" is contained in the component "islands", such a system will never have to be revised'.<sup>108</sup> The archipelago as representing the stability and diversity of metropolitan culture, contains within the grid a 'double disconnection' between Manhattan's 'lobotomy' and 'vertical schism', and permits distinct realities and absolute opposites to coexist. Koolhaas's early theories and work is evidently informed by a sustained exchange with Ungers.<sup>109</sup> However, the influence extends to his more recent concepts, such as the City of Exacerbated Difference in *Great Leap Forward* (2001), when he reads the Chinese Pearl River Delta as a group of complementary mono-programmatic cities.<sup>110</sup>

The images of contemporary culture conjured up by Koolhaas are exploited in strategic analyses, which in their translation to design favour programme over form, with form often simply an empty container that holds projected identities and content. Disregarding his avant-garde rhetoric, Koolhaas succeeds in instrumentalising an alternative form of typological invention that refocuses the role of architecture, whereby his critique of existing forms is not premised on a formal analysis of types but a programmatic reinvention that considers the socio-cultural shifts from which types derive their meaning.<sup>111</sup> Accordingly,

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<sup>106</sup> The view that exclusion and separation underlies all architectural functions, was further explored in the exploitation of schizophrenic relations between architecture and the city in *Delirious New York* as a practice or 'hedonistic science' and a cultural infrastructure and criticism (Dali's Paranoid-Critical-Method). Koolhaas discusses the 'archipelago' concept also in 'Imagining Nothingness', in *S, M, L, XL*, pp. 198–203.

<sup>107</sup> Compare Rem Koolhaas, 'Bigness, or the Problem of Large', in *S, M, L, XL*, pp. 494–516.

<sup>108</sup> Rem Koolhaas, *Delirious New York, Delirious New York* (Rotterdam: 010 Publishers, 1994), p. 296.

<sup>109</sup> Koolhaas is credited on a number of projects in the early 1970s with Ungers. When OMA was founded in 1975 by Rem Koolhaas and Elia Zenghelis with Madelon Vriesendorp and Zoe Zenghelis, it claimed that it 'works in association with Ungers', although this partnership was never realised; see 'OMA', *Lotus International*, 11 (1976), 34.

<sup>110</sup> The COED is 'based on the greatest possible difference between its parts—complementary or competitive [...] The slightest modification of any detail requires the readjustment of the whole to reassert the equilibrium of complementary extremes.' In Rem Koolhaas, Sze Tsung Leong and Chuihua Judy Chung, eds, *Great Leap Forward: Harvard Design School Project on the City I* (Cologne: Taschen, 2001), p. 29.

<sup>111</sup> 'I'm involved with how 'everything' changes in ways that are often radically at odds with the core values of architecture. In spite of its apparent success, I see 'architecture' as an endangered brand, and I'm trying to

Koolhaas postulates the end of design and the futility to plan, as the 'Generic City' is without traits, uncontrollable, self-referential, and infinitely repeatable, requiring new strategies of the 'residual' dealing with identity and perception without taking recourse to history and context.<sup>112</sup>

While Koolhaas developed Ungers's theses, Ungers himself was increasingly preoccupied with historicism and significantly modified his earlier theories. He shifted the discussion of urban spaces and a typological design method based on morphological transformations to that of rational geometries. As Ungers writes in 'Aphorism on Architecture' (1998), which is a fragmentary assembly of his earlier theoretical texts: 'Thinking in reduced dimensions, one arrives at the conclusion that architecture is material and geometry. These are the two components that determine the architectural design.'<sup>113</sup> While geometry embodies the idea of architecture and provides the syntax of design, the material determines its concrete reality. Ungers now claims that there are only two fundamental architectural types, the permanent ark and transient box, and a number of archetypal geometrical forms, the circle, straight line, sphere, cone, cylinder, cube and ellipse, on whose geometric relations the humanist creation in architecture is founded.<sup>114</sup> The restated 'concern is for pure form, for the abstraction, the basic type, the elementary building', the historicist reinterpretation of recurrent elements and forms, 'the direct unadulterated form' without 'hidden meaning; everything that is meant is visible, unmediated, evident'.<sup>115</sup> What Ungers aims for now is a 'non-objective architecture' in which the relations and rules of geometry and proportions, their symbolism, are revealed. Therefore, he contends: 'At the end of a long, changeful history, laden with meaning and full of symbols and metaphors, stands the geometrically purified building.'<sup>116</sup> In his search for a 'building without qualities', Ungers sees himself not 'imagining nothingness' as Koolhaas, but continuing a tradition of architectural design that confirms to him the permanence of geometric systems.

The new abstraction in architecture uses a rational geometry with clear and regular forms in both plan and elevation. In this context, the plan is the result not of the literal interpretation of functions and constructive conditions but of logical geometric systems. The latter are based on proportional relationships and coherent sequences, as was the case in the 'modular system' of medieval

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reposition it. To me, it is ironic that the core of our activity—to reinvent a plausible relationship between the formal and the social—is so invisible behind the assumption of my cynicism, my alleged lack of criticality, our apparently never-ending surrender...' Rem Koolhaas and Sarah Whiting, 'Spot Check: A Conversation between Rem Koolhaas and Sarah Whiting', *Assemblage*, 40 (1999), 36–55 (p. 50).

<sup>112</sup> Compare Rem Koolhaas, 'The Generic City', in *S, M, L, XL*, pp. 1238–97.

<sup>113</sup> Ungers, 'Aphorism on Architecture', p. 9. The texts on which the aphorism is based are identified by Cepl, *Oswald Mathias Ungers*, pp. 614–15

<sup>114</sup> Ungers, 'Aphorism on Architecture', p. 9.

<sup>115</sup> Ungers, 'Aphorism on Architecture', p. 11.

<sup>116</sup> Ungers, 'Aphorism on Architecture', p. 11.

architecture, the floor plans of Palladio, and the architectural theory of Durand.<sup>117</sup>

It is revealing that Ungers, who amongst the theoreticians after Modernism is arguably the one most concerned with the practical application of typological reasoning to design, returns to Durand. He once again finds the autonomy of architecture in geometric order, which he believes rational and conceptual. And in a final shift in his thinking and allegiances, Ungers prescribes no longer to images or a morphological metamorphosis but elementary archetypes, the fiction of timelessness of form. Ungers seeks no longer diagrams of abstraction but formal diagrams themselves. As he admits: 'The designer does not invent, he discovers.'<sup>118</sup> However, this is precisely the scientific definition of the arts against which Quatremère reacted with his formulation of a modern theory of architecture based on type.

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<sup>117</sup> Ungers, 'Aphorism on Architecture', p. 10.

<sup>118</sup> 'Der Entwerfer erfindet nicht, er entdeckt.' O.M Ungers, 'Ein Prolog für Jürgen Sawade', in *Jürgen Sawade: Bauten und Projekte, 1970–1995*, ed. by Wolfgang Schäche (Berlin, Gebr. Mann, 1997), pp. 7–10. [Trans. mine.]

### 3 POSTSCRIPT ON TYPICALITY

Rafael Moneo in 'On Typology' (1978) posited that typology raises the contradictory questions of the architectural object in its singularity and repeatability. In the latter sense, the work of architecture is typified, relying on a type that classes objects with the 'same formal structure'.<sup>1</sup> However, this grouping implies 'neither a spatial diagram nor the average of a serial list', and by comparing different buildings within the same group leads back to the specific building from which the idea of type originates.<sup>2</sup> Types therefore are descriptive, but also productive in the design process: '*a way of bringing the elements of typology—the idea of a formal structure—into the precise state that characterize the single work*'.<sup>3</sup> The formal structure is not an abstract geometry of Gestalt, but defined by its close connection with reality, 'a vast hierarchy of concerns running from social activity to building construction', which gives it historicity.<sup>4</sup> Formal structure is 'the relationship among the elements that define the whole', with significant modification in their relationship or elements denoting a transformation of, or new, type, despite remaining within a typological series.<sup>5</sup> Thus, type is both stable and transformative, often responding to new technology or social changes—and in its potential of invention and generality defines architecture as a discipline.

According to Moneo, it was Quatremère who first realised the typical, and by definition historical, object based on the 'logic of form connected with reason and use', and opposed it to the mechanically reproducible model, with which Durand resolved the problem of form and function through the composition of generic formal elements, ultimately destroying a relation between type and form.<sup>6</sup> The increasing disassociation of type with its formal structure, so Moneo—the Modern Movement by reducing type to prototypes, Neorationalism by displacing typology with morphology and the urban, and Postmodernism by emptying type to an image—made it impossible for type to 'define the confrontation of internal ideology and external constraints'.<sup>7</sup> Consequently, typology became solely a means of composition. 'The so called "typological research" today merely results in the production of images, or in the reconstruction of traditional typologies. In the end it can be said that it is nostalgia for types that gives formal consistency to these works.'<sup>8</sup> For type to remain relevant, the architectural object must be considered beyond its singularity through what it has in common with others, and requires the renewal of its relation to a *formal structure*: 'the old definitions must be modified to accommodate an idea of type that can incorporate even the present state, where, in fact,

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<sup>1</sup> Moneo, 'On Typology', p. 23.

<sup>2</sup> Moneo, 'On Typology', p. 23.

<sup>3</sup> Moneo, 'On Typology', p. 23.

<sup>4</sup> Moneo, 'On Typology', p. 24.

<sup>5</sup> Moneo, 'On Typology', p. 24.

<sup>6</sup> Moneo, 'On Typology', pp. 28–29.

<sup>7</sup> Moneo, 'On Typology', p. 41.

<sup>8</sup> Moneo, 'On Typology', p. 38.

subtle mechanisms of relationships are observable and suggest typological explanations'.<sup>9</sup>

Peter Carl in his article 'Type, Field, Culture, Praxis' (2011) comes to a similar conclusion, and demands the necessary 'orientation in reality' of architecture. He defines types as the 'isolated fragments of a deeper and richer structure of typicalities', hereby distinguishing between typology as (architectural) objects and typicalities as relating to real 'human situations'.<sup>10</sup> Summarising, he adds to Vidler's historiography of type a fourth typology of parametric control, seemingly reiterating a limited formalist interpretation of types as a rational if not mathematical variation of models:

Contemporary theory on typology in architecture seems to recognise four historical phases: 1) the 18th century, culminating in Quatremère de Quincy's tent, cave and hut, bearing hallmarks of species identification in zoology (for example, his contemporary Cuvier) and codified in the design-procedures of JNL Durand; 2) early Modernist 'functionalism', particularly with regard to housing, ranging from efficiency (ergonomics/Taylorism, industrial production) to poetics (Le Corbusier); 3) the 1960s and 1970s reaction to this inheritance, largely oriented about Aldo Rossi, but bearing hallmarks of the classifications of Durand; 4) the recent present, with the advent of digital design techniques, notably parametric control of formal types.<sup>11</sup>

However, Carl continues by positing that typology is in fact the 'very embodiment of conceptual thinking', whereas type naturally inhabits taxonomy, which results in a conflict between conceptual and concrete demands that is commonly resolved by formal variations of type.<sup>12</sup> The tendency of type to revert to measurable parameters prevent the 'true depth of typicality' to emerge, which Carl does not locate in the dimensional and organisational scheme of, for example, a bedroom, but in culture, in the 'typical situations of sleep, dreams, sex, illness, death', which 'open much more profound and rich possibilities of interpretation'.<sup>13</sup> Typicalities embody to Carl 'aspects common-to-all' and familiar to us from the conventions of language. In addition, this 'common-to-all exerts a claim upon freedom', as freedom only receives meaning through the dependencies established by the typicalities of 'common meanings', 'accents of sounds', and 'specifically grammatical aspects' that are firmly associated with 'gestures' and 'situations'.<sup>14</sup> Thus Carl posits that the proper understanding of context relies for its meaning on dependencies and the 'depth-structure' of typicalities, and that this structure,

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<sup>9</sup> Moneo, 'On Typology', p. 44.

<sup>10</sup> Carl, 'Type, Field, Culture, Praxis', p. 40.

<sup>11</sup> Carl, 'Type, Field, Culture, Praxis', p. 39.

<sup>12</sup> Carl, 'Type, Field, Culture, Praxis', p. 39.

<sup>13</sup> Carl, 'Type, Field, Culture, Praxis', p. 39.

<sup>14</sup> Carl, 'Type, Field, Culture, Praxis', p. 40.

which enables social and political communication, 'is "flattened" to a single horizon of representation when architecture is reduced to form and space and then even further to information'.<sup>15</sup> During this flattening, the depth-structure is converted into formal complexity and allows architecture to emerge, a process that is not reversible in its logic or analogous relations and in which types might play an ordering but not systematic role. Carl therefore warns: 'The more the context for type is a system, the less possible is dwelling.'<sup>16</sup>

Yet precisely the association of type with 'grander type-like concepts such as epochs, historical periods, styles and *Zeitgeist*' reveals, so Carl, the dilemma of typology 'seeking to recover the meaning of civic life through the formal variation of types', and uncovers type's inability to provide a context other than through a form of organisation or monumental ideal image—and never through urban continuity or real life.<sup>17</sup> 'Typicalities are never abstract forms, processes or relationships, but are rather embedded within constituencies', within the 'habits, customs, language and so on', and cannot be simulated or modelled.<sup>18</sup> By interpreting type as pure culture and typicality, Carl negates the traditional and practical application of type.

If a city is our most concrete receptacle of these universal conditions, and if we are not to find ourselves in the conflict between conceptual fields and the urban topography of praxis, it would seem best to treat the knowledge or experience embodied in well-formulated type somewhat like the Rhetorical *topos*—a commonplace that operates like a question, soliciting debate and commitment to a theme or topic. In this manner, the type remains open to the deep context on which it depends for meaning (that is, it migrates towards the structure of typicalities), and therefore resists incorporation in a system.<sup>19</sup>

The questions that arise from this are familiar ones. If type in its guise of typicality is understood more explicitly as rhetorical *topos*, how can a specificity required for advanced expression and individuality, be it emotional or formal, ever be attained, and what are the means or methods of necessary translation? If type is but a convention and implies the possibility of voluntary transformation of conventions through its means of communication, the nature of habits, customs, language, etc., defines typicality but also denotes a formal codification. As Moneo writes, one should not forget that: 'Understanding and accepting the kind of object that a work of architecture is seems

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<sup>15</sup> Carl, 'Type, Field, Culture, Praxis', p. 40.

<sup>16</sup> Carl, 'Type, Field, Culture, Praxis', p. 41.

<sup>17</sup> Carl, 'Type, Field, Culture, Praxis', p. 42.

<sup>18</sup> Carl, 'Type, Field, Culture, Praxis', p. 43.

<sup>19</sup> Carl, 'Type, Field, Culture, Praxis', p. 43.

crucial, and, as I see it, the concept of type is helpful in resolving the ambivalence that is always present in architecture.<sup>20</sup>

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<sup>20</sup> Rafael Moneo, 'Urumea Residential Buildings, San Sebastián', in *Rafael Moneo: Remarks on 21 Works*, ed. by Laura Martínez de Guereñu (New York: Monacelli Press, 2010), p. 19.



## CONCLUSION: TYPE AND THE PROMISE OF DIAGRAMS

*Diagrams underwrite all typological theories, as evidenced, for example, in the catalogues of Durand. Consider the much-vilified bubble diagram; the diagrammatic formalism initiated by Wölfflin and Wittkower, elaborated into a syntax the extended into context by Rowe and his followers and further by the symbolic and semantic considerations advocated by architects such as Rossi, Venturi and Hejduk.*

Jeffrey Kipnis, 'Re-originating Diagrams' (2006)

Type, according to Quatremère's, is concerned with *inventio* in the sense of a specific rhetorical *topos* and requires a conceptual thinking and structural idea that generates coherent arguments. Providing a framework to invention, type is more than a 'discovery' of the existing and remains a non-formal description of objects with certain shared characteristics. Quatremère's coupling of type with the model, accepts that architecture is not pure content and, despite a hierarchical order, equally necessitates formal articulation. The *dispositio* by which an argument is organised as an effective discourse. Through this interrelation of content and form, typal reasoning is transposed according to the conventions of models. Durand's taxonomic dispositions clarify this complementary function of models by re-strategising and inverting the traditional order of design from a whole-to-part to a part-to-whole progression. His methodical modification of structural elements—the *taxis* of architecture—is based on the formal reduction of received models and a didactic analysis of *ordonnance*. This abstraction of structural diagrams largely disassociates form from its symbolic iconography and experiential connotation, presenting form as the result of a relative (structural) arrangement of parts and as a morphological sequence. Semper, recognising the potential of taxonomic comparison to make form available to rigorous analysis, but also its shortcoming, limiting invention to linear progression, synthesises Durand's formal reading with Quatremère's conceptual reasoning of form. In his doctrine of style, typal motives are seen as underlying continuous authorial reinterpretations and material transformations, with style providing the appropriate modes of expressing and communicating artistic ideas and arguments. Semper hereby understands artistic form as a process of becoming and attributable to cultural specificity and transmission, and while informed by the progress of technology, form is foremost epistemological and defined by conventions and their disintegration by cultural and material ideas.

These three inaugural nineteenth-century theories of type and typology clearly engage with the historicity of the architectural work, but also share a search for the syntactic and ahistorical reading of form. There is a concerted effort to reframe *poiëtic* composition and make it relevant to a contemporary reality through the different means of abstraction—conceptually, diagrammatically, and materially—which demands a new instrumentalisation of history and understanding of disciplinary knowledge through an increasingly socio-cultural perspective. Replacing the symbolism of form with a linguistic function, they seek a rational solution to what previously was an irreconcilable divide between artistic and scientific reasoning. While Quatremère and Durand represent the two opposite yet complementary approaches to formal judgements, Semper by consolidating their theories is able to meaningfully explain the relation of a conceptual typal idea to its form through a principled process of design.

With the twentieth-century however, recourse to typology was employed to assign meaning to form that was presented as culturally or technically objective, but was often

symbolically and procedurally subjective and lacked rigour in the conceptualisation, analysis, and synthesis of form. The desire to construe type as the means through which architecture could obtain total autonomy, motivated this misreading and ended in the perceived failure of typology. Yet, the three inaugural theories revealed type as only partially autonomous, at precisely the moments when, through the translation of type to its model, or the transposition of the generic to the specific, disciplinary knowledge is transformed and enriched. But what Rossi and Ungers's retreat to symbolic metaphors and restricted vocabulary of geometric types exposed, is the difficulty to translate Quatremère's typal diagrams of abstraction into practice while resisting Durand's formal diagrams of architecture as an end in itself. Semper however provided an important reading of how type enables continuous authorial reinterpretations and material transformations. However, the need to redefine the architectural discipline and its design methods not only led in the 1960s to the recourse to typology, but also an emerging discourse on diagrams.

Christopher Alexander in *Notes on the Synthesis of Form* (1964) defines architectural design in a Modernist sense as 'the process of inventing things which display new physical order, organization, and form, in response to function'.<sup>1</sup> His design process aims for formal clarity, which he understands synthesised by a series of constructive diagrams that represent design content and form, while trying to achieve equilibrium between complex and conflicting sets of variables. Diagrams—or 'patterns' as he labels repeatable models—are to him constitutive of formal processes: form is an expression of a factually objective and external mathematical problem, representing a concept of order. Eisenman in *The Formal Basis of Modern Architecture* (1963) concurs with Alexander that architectural form results from logical and objective processes, which he terms 'systemic' orders. However, his dissertation is meant to refute Alexander, asserting that these orders not only define the limits of form but architecture as a discipline.<sup>2</sup> Eisenman's disciplinary order is premised on the properties and primacy of architectural formalism itself, on the dialectic between generic and specific form. He contends that 'formal considerations are basic to all architecture regardless of style, and that these considerations derive from the formal essence of any architectural situation', whereby they constitute a formal language and design process.<sup>3</sup> Eisenman claims that his theory of architectural form anticipated a contemporary critical theory of architecture, established by 1968 and propagated by

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<sup>1</sup> Christopher Alexander, *Notes on the Synthesis of Form* (Cambridge, MA: Harvard University Press, 1964), p. 1.

<sup>2</sup> Eisenman wrote about Alexander's PhD, on which the *Notes on the Synthesis of Form* is based: 'The text so infuriated me, that I was moved to do a Ph.D. thesis myself. It was called "*The Formal Basis of Modern Architecture*" and was an attempt to dialectically refute the arguments made in his book. He got his book published; my thesis was so primitive that I never even thought of publishing it.' In Peter Eisenman and Christopher Alexander, 'Contrasting Concepts of Harmony in Architecture: Debate Between Christopher Alexander and Peter Eisenman', *Lotus International*, 40 (1983), 60–68.

<sup>3</sup> Peter Eisenman, *The Formal Basis of Modern Architecture: Dissertation 1963*, Facsimile (Baden: Lars Müller Publishers, 2006), p. 19.

architects such as Venturi and Rossi.<sup>4</sup> Then, the focal shift from aesthetic categories to architectural production and culture itself established a self-conscious theoretical mode of thinking that incorporated historical and political criticism. With the purpose of architecture, according to Eisenman, the determination of form, its characteristics are critical and he differentiates between a Platonic generic form and a realised specific form.

It has been demonstrated that all specific architectural form can be related to a generic antecedent and that the properties of this generic root cannot be considered subjectively. The comprehensibility of the generic antecedent is the necessary precondition for the clarity of the intent and function of the specific form. From the fundamental state of generic form, its formal condition, which suggests its own inherent order a formal language can be developed that orders the evolution of specific forms in a particular architectural situation. Moreover it is the absolute and thereby definitive nature of these generic properties that alone can provide the rational basis for this formal language.<sup>5</sup>

Attempting to formulate a consistent argument of form and its origins, Eisenman invokes a typological problem and hierarchy. But by separating history from theory—as to him history undermines the rationality and criticality of theory—he is unable to accept the typological question this raises, replacing it instead with an exclusively formal methodology. He subsequently derives a ‘rational’ vocabulary, grammar, and syntax of architecture—meaning by syntax a formal architectural language acting as a generic and antecedent system, a ‘basic set of rules that controls the grammatical arrangement’, which in turn regulates the systemic implementation of formal vocabulary into specific forms that respond to ‘external situations’ and ‘internal functional requirements’.<sup>6</sup> Eisenman’s formal analysis and design is supposedly open-ended by resisting a codification of its principles and excluding aesthetic and metaphysical considerations—whereas he sees Durand’s method by codifying form as a closed-ended investigation. In contrast to nineteenth-century historical and twentieth-century polemical traditions, Eisenman declares his interest thus in an ‘absolute order’ identified and achieved by a rational use of language. He however omits that the appropriation of syntax to domains of formal knowledge was an eighteenth-century commonplace, and by discrediting Durand obscures his reliance on the same syntactic and formal reasoning that borrowed from artificial languages is by definition codified in its form and meaning in order to function.

Eisenman’s dispute with Alexander is representative of a debate in the 1960s concerned with design theory. Although typology and its ally morphology seemed at first to offer a

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<sup>4</sup> See an interview of Eisenman in 2004 with Kieran Long in ‘Review: The Formal Basis of Modern Architecture’, *Icon*, 42 (2006).

<sup>5</sup> Eisenman, *Formal Basis*, pp. 81–83.

<sup>6</sup> Eisenman, *Formal Basis*, pp. 89 and 137.

viable design approach to practice, by the mid-1980s its failure to provide more than repeatable images was widely acknowledged. Typology was consequently dismissed from its duties to invent new forms or organisation and replaced by the function of the diagram. Yet, the promise of diagrams to provide a new rationality previously attributed to type, in many ways merely ‘re-originated’ architectural form without severing its fundamental relationship to typological theories, which Jeffrey Kipnis recognises when attempting to link Durand to Gilles Deleuze—as noted by Lawrence Barth.<sup>7</sup>

The connection between type and diagrams is also apparent from the etymological closeness between type, denoting a three-dimensional ‘impression’ and ‘figure’, and diagram as a two-dimensional ‘geometrical figure’, ‘written list’, or ‘register’.<sup>8</sup> That diagrams are part of a typological analysis is already evidenced by Quatremère and Durand’s references to a generic *parti*, and explicit in Rossi’s description of diagrams as type reduced to a ‘simple scheme of organization’.<sup>9</sup> Similarly, Semerani defines types as graphical representation, whereby ‘every diagram of urban building types takes from the mould its characteristic of being the internal structure and deep geometry of the architectural object and the matrix of various possible architectures’.<sup>10</sup> Thus, the ‘deep structures’ of types are seen as diagrammatically communicated and abstracted in order to acquire an operative analysis of form for design. Semerani however warns that the diagrammatic matrix reduces type ‘from the level of an idea to that of an interpretative diagram, little more than a model for deciphering morphological complexity’.<sup>11</sup> This formal limitation of diagrams is still critical. Diagrams re-orientate the typological problem towards an instrumental description of functional relations while repressing representation and spatial specificity. The diagram conveys information, which would be less precise and succinct if communicated by words, structures, and information. Diagrams also often describe extremes in space, time, and organisation, hereby assisting in defining new possible relations. Hyungmin Pai describes the ‘modern’ diagram as advanced by scientific management, based on a separation of subject and object and the use of metaphors,

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<sup>7</sup> See Kipnis, ‘Re-originating Diagrams’, p. 196. Compare with Lawrence Barth, ‘The Complication of Type’, in *Typological Formations: Renewable Building the City*, ed. by Sam Jacoby and Christopher Lee (London: AA Publications, 2007), p. 159.

<sup>8</sup> *The Oxford English Dictionary*, 2nd edn (1989) defines ‘diagram’ as: 1. *Geom.* A figure composed of lines, serving to illustrate a definition or statement, or to aid in the proof of a proposition. 2. An illustrative figure which, without representing the exact appearance of an object, gives an outline or general scheme of it, so as to exhibit the shape and relations of its various parts.

<sup>9</sup> Rossi, *The Architecture of the City*, p. 46.

<sup>10</sup> Semerani, ‘Why Not?’, *Architectural Design*, 55.5/6 (1985), The School of Venice, 11. That the diagram is familiar to or appropriated by the later reviews of Neorationalism is apparent from Sylvain Malfroy’s analysis of Saverio Muratori’s work as based on diagrammatic studies that are typological; see ‘Typologie als Methode der Interpretation: Der theoretische Beitrag des Architekten Saverio Muratori’, *Werk Bauen & Wohnen*, 11 (1985), 59–64. Similarly, the *Architectural Design* issue on ‘The School of Venice’ in 1985 discussed the problem of ‘figure’ that in its distinction to form is the basis for a more general discussion of the diagram.

<sup>11</sup> Semerani, ‘Why Not?’, p. 11.

which enables a reordering of relations between nature, society, machine, and human body through functionalism and standardisation.<sup>12</sup>

Although Toyo Ito only terms 'diagram architecture' in 1996, in order to describe the translation of a spatial scheme in Kazuyo Sejima's work via architectural symbols into actual structure, the diagram was in fact inseparable from architecture and its specific deployment in the arrangement of architectural elements in composition since its first codification by Durand in the spirit of Gaspard Monge's descriptive geometry—if not since the didactic use of drawing in the Renaissance.<sup>13</sup> Thus, Vidler notes, 'Durand's diagrammatic method, economic of time and resources and readily communicable' was taken up by Modernism, including Le Corbusier, for its potential to transmit abstraction and function: 'a geometrically driven Modernism developed a special affection for the utopian diagram'.<sup>14</sup> With the diagram potentially resolving the problem of programme, Le Corbusier famously claimed that 'the truth lies in the diagrams'.<sup>15</sup> The use of the diagram, if only for purposes of post-rationalisation, is thus frequently motivated by a dematerialisation and abstraction of architecture into universal objects and types. A 'diagrammatic' translation from idea to form is particularly prolific in the Modern Movement, used as an efficient design and planning tool to relate functional and spatial abstraction to concrete architecture, without limiting form to a fixed repertoire of types.<sup>16</sup>

As Vidler elaborates, essential to understand diagrams is Charles Sanders Peirce's semiology, which states that a sign always has a signifier-signified relation to an object it represents and, importantly, is an idea or mental sign of the same object.<sup>17</sup> Peirce distinguishes three kinds of sign, the *icon* (a sign most like its object through similitude), the *index* (a sign with no resemblance to its object but pointing to it through contiguity), and the *symbol* (a non-declarative sign relying on conventional rules and an associated icon). 'A Diagram' is to Peirce 'an Icon of intelligible relations', and although incorporating graphic abstraction and symboloid and indexical features, it 'is nevertheless in the main an Icon of the forms of relations in the constitution of its Object'.<sup>18</sup> Suppressing detail, the diagram makes important features prominent, which become abstractable and communicable: 'It is, by reason of its "general" nature, its abstraction, a vehicle for the production of new, and

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<sup>12</sup> Compare with Pai, *The Portfolio and the Diagram*, pp. 163–64.

<sup>13</sup> See Toyo Ito, 'Diagram Architecture', *El Croquis*, 77 (1996), Kazuyo Sejima, 18–24.

<sup>14</sup> Anthony Vidler, 'Diagrams of Diagrams: Architectural Abstraction and Modern Representation', *Representations*, 72 (2000), 1–20 (p. 10).

<sup>15</sup> Le Corbusier, 'Truth From Diagrams', *Prelude*, 6 (1933).

<sup>16</sup> For example, the studies by Bruno Taut or Alexander Klein use circulation diagrams to analyse the efficient planning of houses. As Pai argues in *The Portfolio and the Diagram*, the early twentieth-century Modernist diagrams used the metaphor of the human body as a machine for the functional organisation of space.

<sup>17</sup> See Anthony Vidler, 'What is a Diagram Anyway?', in Cassarà, Silvio, *Peter Eisenman: Feints* (Milan: Skira, 2006), p. 19.

<sup>18</sup> Charles Sanders Peirce, 'Prolegomena to an Apology for Pragmaticism', in *Collected Papers of Charles Sanders Peirce*, ed. by Charles Hartshorne and Paul Weiss (Cambridge, MA: Harvard University Press, 1932), IV, p. 531.

developing diagrams'.<sup>19</sup> All reasoning according to Peirce can be considered diagrammatic and capable of transformation. However, the diagram requires certain 'imagination' and subsumes the object it functions as an icon of, thereby blurring the boundaries between the real and its copy—and in this process becomes utopian.

Thus, Michel Foucault can argue that the utopian 'model of functioning' is diagrammatically expressed in Bentham's Panopticon, which represents 'the diagram of a mechanism of power reduced to its ideal form; its functioning, abstracted from any obstacle, resistance or friction, must be represented as a pure architectural and optical system: it is in fact a figure of political technology that may and must be detached from any specific use'.<sup>20</sup> Despite its spatial generality, the diagram is useful to the specific design of buildings, whereby the diagram functionalises space and spatialises function.<sup>21</sup> Based on his reading of Foucault's diagram as 'a display of the relations between forces which constitute power', Deleuze defines the diagram as 'intersocial' and 'spatio-temporal multiplicities' in a state of becoming.<sup>22</sup> The diagram 'is no longer an auditory or visual archive but a map, a cartography that is coextensive with the whole social field. It is an abstract machine. It is defined by its informal functions and matter and in terms of forms makes no distinction between content and expression, a discursive formation and a non-discursive formation'.<sup>23</sup> The diagram is ontologically indifferent and disinterested in formal specificity: 'It never functions in order to represent a persisting world but produces a new kind of reality, a new model of truth. It is neither the subject of history, nor does it survey history'.<sup>24</sup> A diagram 'makes' and 'doubles' history and with its 'mixing of non-formalized pure functions and unformed pure matter' offers a different convergence of theory and form.<sup>25</sup> Diagrams are 'abstract machines' devoid of any classical representation. Rephrasing Peirce, Deleuze contends that semiotics is not distinguished by relations of signifier-signified but those of territoriality-deterritorialisation. Therefore diagrams are distinct and irreducible to either the icon or symbol: '*diagrams* must be distinguished from *indexes*, which are territorial signs, but also from *icons*, which pertain to reterritorialization, and from *symbols*, which pertain to relative or negative deterritorialization'.<sup>26</sup>

Deleuze's definition of the diagram was widely adopted by the proponents of a diagrammatic discourse in architecture in the 1990s. Stan Allen, for example, posited that

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<sup>19</sup> Vidler, 'What is a Diagram Anyway?', p. 20.

<sup>20</sup> Michel Foucault, *Surveiller et punir: Naissance de la Prison* (Paris: Gallimard, 1975). English translation: *Discipline and Punish: The Birth of the Prison* (London: Penguin Books, 1991), p. 205.

<sup>21</sup> Compare Pai, *The Portfolio and the Diagram*, pp. 168–70.

<sup>22</sup> Gilles Deleuze, *Foucault* (Paris: Editions de Minuit, 1986). English translation: *Foucault*, trans. by Séan Hand (London: The Athlone Press, 1988; repr. London: Continuum, 2006), p. 31.

<sup>23</sup> Deleuze, *Foucault*, p. 30.

<sup>24</sup> Deleuze, *Foucault*, p. 30.

<sup>25</sup> Deleuze, *Foucault*, p. 61.

<sup>26</sup> Gilles Deleuze, and Félix Guattari, *Capitalisme et schizophrénie, tome 2: Mille plateaux* (Paris: Editions de Minuit, 1980). English translation: *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. by Brian Massumi, 3rd edn (London: Continuum, 2004), p. 157.

diagrams are foremost organisational and consider form and programme: 'A diagram is therefore not a thing in itself but a description of potential relationships among elements, not only an abstract model of the way things behave in the world but a map of possible worlds.'<sup>27</sup> Overcoming the traditional tropes of architectural design, diagrams matter to Allen as they 'negotiate a field in which the actual and the virtual assume ever more complex configurations', providing architecture with the ability to relate the 'materiality of building' to the 'immateriality of information'.<sup>28</sup> The diagram specifies their possible relations through graphic assemblage, which is a transposition, an impersonal and efficient converting of one sign system to another while maintaining the relations integral to the diagram.<sup>29</sup> However, Allen concludes that diagram architecture is not a diagram itself but *behaves* like one: 'It is an architecture that establishes a loose fit of program and form, a directed field within which multiple activities unfold, channelled but not constrained by the architectural envelope. It is an architecture of maximum performative effect with minimal architectural means.'<sup>30</sup>

Equally owing to Deleuze, Robert Somol in his historiographical clarification of the architectural diagram claims that diagrammatic working by the neo-avant-garde 'implies a particular orientation, one which displays at once both a social *and* a disciplinary project. And it enacts this possibility not by representing a particular condition, but by subverting dominant oppositions and hierarchies currently constitutive of the discourse.'<sup>31</sup> He understands the social not as external but internal to architecture, and diagrams are social, as 'diagrammatic work is projective in that it opens new (or, more accurately, "virtual") territories for practice', whereby it establishes itself as a polemical and fundamental disciplinary device displacing the previous meanings of drawing and type.<sup>32</sup> Whereas type presupposes an external origin, diagrams contain specificity within their (automated) processes that are not representative of anything but themselves, and differ substantially from the traditional diagram defined by structure and function.

A diagrammatic practice (flowing around obstacles yet resisting nothing)—as opposed to the tectonic vision of architecture as the legible sign of construction (which is intended to resist its potential status as either commodity or cultural speculation)—multiplies signifying processes (technological as well as linguistic) within a plenum of matter, recognizing signs as complicit in the construction of specific social machines.<sup>33</sup>

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<sup>27</sup> Stan Allen, 'Diagrams Matter', *ANY*, 23 (1998), Diagram Work, 16–19.

<sup>28</sup> Allen, 'Diagrams Matter', p. 16.

<sup>29</sup> Allen owes his distinction of 'transposition' from a language biased 'translation' to Friedrich Kittler's media theory.

<sup>30</sup> Allen, 'Diagrams Matter', p. 18.

<sup>31</sup> Robert Somol, 'Dummy Text, or the Diagrammatic Basis of Contemporary Architecture', introduction to Peter Eisenman, *Diagram Diaries* (New York: Universe Publishing, 1999), p. 23.

<sup>32</sup> Somol, 'Dummy Text', p. 23.

<sup>33</sup> Somol, 'Dummy Text', p. 24.

According to Somol, the unrealised capacity of the performative diagram is its claim to autonomy and heterogeneity—in contrast to the Modernist anonymous and homogeneous diagrams—and is clarified by a distinction between two kinds of repetition and autonomy. One that is typology driven and adheres to identity and another by the neo-avant-garde that is best described by difference and simulacra, establishing ‘a *process* of self-generation or self-organization, a model that allows for formal-material emergence or transformation without authorial intervention, where time is an active rather than a passive element’.<sup>34</sup> Based on this definition of diagrams, Somol proposes that to Eisenman form is the ‘trace, the missing index of formal processes (thus stressing absence and the conceptual)’, and form *is* a linguistic construction ‘subjected to the functions of its linguistic descendants: *informing*, *transforming*, and *performing*’.<sup>35</sup> Thus the diagrams by Rowe and Alexander—clarified respectively as ‘paradigm’ and ‘pattern’—are criticised by Eisenman for not being ‘sufficiently diagrammatic in that they attempt to represent or identify a static truth condition’.<sup>36</sup> Based on an analysis of Giuseppe Terragni’s work, which revealed the workings of ‘surface structure’ and ‘deep structure’ as an index of formal-linguistic possibilities, Eisenman interprets the subversion of form as constant structuralist modifications and formal operations resulting in a catalogue of syntactic procedures (‘transformation, decomposition, grafting, scaling, rotation, inversion, superposition, shifting, folding’): ‘the subject matter of architecture, a disciplinary precondition to a diagrammatic approach’.<sup>37</sup> This strips away perceptual conventions, and the reduction to ‘formal universals’ reveals the linguistic structure of architecture as an indexical and syntactic behaviour of spatial diagrams and their continuous transformation. Within this process of diagrammatic unfolding, typological and contextual changes are unintended and only the result of virtual (computer aided) experimentation.

Eisenman himself likens the diagram to various forms of writing, for example in ‘Diagram: An Original Scene of Writing’ (1999) to a ‘graphic shorthand’ or ideogram that is historically explained ‘as an explanatory or analytical device and as a generative device’.<sup>38</sup> He compares the implicit latency of diagrams to an ancient practice of sketching with a stylus on parchment—an example borrowed from Kurt Forster but familiar from Rumohr and Semper to explain style as the relating of specific form to its historical origin through a diagrammatic-material transposition—as it ‘diagrammatically’ anticipates yet only partially realises some of its traces in the final inked plan.<sup>39</sup> What Semper insisted on as a conscious function of style, re-emerges in the diagram as an unmotivated process. Opposing the geometric scheme of the Beaux-Arts *parti*, Eisenman understands architecture’s diagrams as generative and specific, an intermediary condition before

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<sup>34</sup> Somol, ‘Dummy Text’, p. 10.

<sup>35</sup> Somol, ‘Dummy Text’, p. 14.

<sup>36</sup> Somol, ‘Dummy Text’, p. 10.

<sup>37</sup> Somol, ‘Dummy Text’, p. 15.

<sup>38</sup> Eisenman, ‘Diagram: An Original Scene of Writing’, p. 27.

<sup>39</sup> Compare Semper, ‘On Architectural Styles’, p. 269; and ‘The Attributes of Formal Beauty’, p. 243.

geometry (form) but not necessarily an abstraction, as it often acts as a form of representation.

Setting himself apart from a Deleuzian school of thought that sees diagrams as immanent 'machinic forces' and their relationships, and a non-structural *superimposition* ('a vertical layering differentiating between ground and figure'), Eisenman proposes *superposition*, 'a coextensive, horizontal layering where there is no stable ground or origin, where ground and figure fluctuate between one another'.<sup>40</sup> His main contention with Somol's Deleuzian explanation of diagrams is the claim that any diagrammatic project rethinks the constitution of the discipline and therefore implicitly 'is not abstract or autonomous, but rather presumes that architecture already contains in its being (i.e., its interiority) the condition of the social'.<sup>41</sup> If however in the interiority of architecture 'singularity is a repetition of difference' and a singular manifestation of the sign exists 'that contains its own signified, the motivation of the sign is already internalized and thus autonomous', rather than already socialised or historicised and dialectic.<sup>42</sup> Eisenman terms this existing condition of autonomy 'architecture's interiority', positing that without a 'relationship between interiority and the diagram, there is no singularity which defines architecture'.<sup>43</sup> Thus he criticises Somol's conception of diagrams as matter, flows, and forces, as this makes them indifferent to the interiority of architecture and three distinct architectural conditions: '(1) architecture's compliance with the metaphysics of presence; (2) the already motivated condition of the sign in architecture, and (3) the necessary relationship of architecture to a desiring object'.<sup>44</sup>

Given that architecture's interiority, which to Eisenman is comparable to Foucault's concept of 'archaeology as the scientific study of archival material', and anteriority, which is analogous to Foucault's idea of 'archive as the historical record of a culture', is unexplained by Somol's thesis of unformed matter, Eisenman propounds an alternative concept of diagram based on Jacques Derrida's notion of writing.<sup>45</sup> Derrida defines writing as a condition of repressed memory, with the repression of writing, like architecture's interiority, repressing what threatens its metaphysics of pure presence—with architecture burdened by its unique privileging of literal presence. 'If Derrida is correct, there is already given in the interiority of architecture a form of presentation, perhaps as the becoming unmotivated of the architectural sign', a form of writing that is both anterior and interior to architecture.<sup>46</sup> Following Derrida, Eisenman explains the multitude of diagrammatic traces and their 'preservation' or 'erasure'—but also a memory of that still to come into

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<sup>40</sup> Eisenman, 'Diagram: An Original Scene of Writing', pp. 29–30.

<sup>41</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 31.

<sup>42</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 31.

<sup>43</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 31.

<sup>44</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 30.

<sup>45</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 31.

<sup>46</sup> Eisenman, 'Diagram: An Original Scene of Writing', p. 32.

existence—through the example of the simultaneous writing occurring in Freud’s Mystic Writing Pad. The pad consists of three layers: a top layer that, written on with a stylus, receives new and retains old traces as imprints, a middle layer that transcribes the writing, and a bottom layer that records the writing. The endless superposition made possible by the simple mechanics of the pad corresponds to a diagrammatic writing in architecture that Eisenman envisions. A diagram exists as an autonomous writing prior to architecture’s anteriority and interiority, and the latter ‘containing a palimpsest of an already-written undercuts the premise of architecture’s origin in presence’, through which the architectural object obtains a ‘condition which has within itself both a repetition of its being and a representation of that repetition’ without being limited by chronology.<sup>47</sup> Thus, diagrams are able of becoming unmotivated of the sign, as the architectural object is indexical: ‘The diagram acts as an agency which focuses the relationship between an authorial subject, an architectural object, and a receiving subject; it is the strata that exists between them’.<sup>48</sup> However, Eisenman stresses that this requires some physical input and mediation, which ‘enables an author to overcome and access the history of the discourse while simultaneously overcoming his or her own psychical resistance to such an act’.<sup>49</sup>

This unavoidably returns Eisenman to the problem raised by his critique of the Deleuzian diagram, that any diagram—even if unmotivated of the sign—eventually requires a wilful act when it becomes materially determined, and reveals intentions that establish the diagram as already historicised. In fact, this determination is impossible without an interpretation of meaning that, if belonging to the disciplinary discourse of architecture, is by definition neither entirely internalised and autonomous nor purely of presentness, but socialised and subject to external influences. Even arbitrary or parametric processes with a formal and organisational intent are essentially interpretative and involve an act of comparison that refers back to existing disciplinary knowledge and conventions, inevitably relating the diagram to questions of a typological nature. This impossibility to think in architecture of the diagram without references to type is recognised by Eisenman, who argues that the diagram offers a qualitatively different synthesis.

While type moves towards abstraction, it does so in a way that reduces the model, the copy, or the original. The diagram, on the other hand, contains more than the model. The type and the diagram are two different conditions of abstraction: type, the abstraction of a reduction to a normalization, and diagram, the abstraction that may generate into something more than the thing itself, and thus, potentially overcome normalization.<sup>50</sup>

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<sup>47</sup> Eisenman, ‘Diagram: An Original Scene of Writing’, p. 34.

<sup>48</sup> Eisenman, ‘Diagram: An Original Scene of Writing’, p. 35.

<sup>49</sup> Eisenman, ‘Diagram: An Original Scene of Writing’, p. 35.

<sup>50</sup> Peter Eisenman, ‘Diagrams of Anteriority’, in Peter Eisenman, *Diagram Diaries* (New York: Universe Publishing, 1999), pp. 41–42.

This basic distinction between a reductive and additive abstraction is repeated by Eisenman in similar arguments in favour of the diagram, but only asserts a closeness of the diagram to the spatial and material reasoning of type. And in a recent reflection on his diagrammatic practice in 'Feints: The Diagram' (2006), the difference between type and diagram is even less distinct and partially revised. Once again, comparing diagrams to type and intending to clarify their function to invention in practice, he states: 'One of the motivations of the diagram is to provide an intermediary condition between presence, image, and idea; between the past and the present.'<sup>51</sup> To Eisenman, this raises essentially a question of disciplinary specificity and representation, but it also admits to the problem of the historical.

A diagram derives from the context of a site, program or history. A diagram does not necessarily exist a priori in any project. In this sense, it is not like a type which has a fixed relationship to form, function, and history. There are two kinds of work on diagram. One is theoretical and analytic, the other is operational and synthetic. The former takes existing building and analyzes them to find diagrams that animate these buildings. The latter is something teased out of a program or site that permits these conditions to be seen in a different way. [...] The diagram is formed but it may not be formal.<sup>52</sup>

The difference between type and diagram that Eisenman upholds seems to be a difference between a typological diagram, which to him represents a visual reference that is 'thematic' or iconic in Peirce's terms, thus is in its form and signification codified, and a textual diagram that is potentially non-formal and speculative as a 'trace' or 'index of time', and derives from programme and context. While previously Eisenman's diagram exists autonomously before architecture without motivation, he now confesses that to his practice 'the diagram has been a template for invention' but underlines that it 'is neither a type form, nine squares, or a formal similitude, that is, the diagram as the object itself'.<sup>53</sup> Eisenman's definition of type evidently relies on a limited interpretation of Durand as restricted to identical formal repetition and excludes Quatremère, although familiar to him through Rossi and Vidler. Accordingly he insists that a 'diagram is not a plan', thus not 'optical', attempting to disassociate his practice from Durand's Beaux-Arts tradition of the diagram.<sup>54</sup> However, as Barth claims, Durand's taxonomical plates are indexical icons and 'both typology and the diagram depend upon the possibility of this double reading in the abstraction of Durand's signs'.<sup>55</sup> More specifically, Pai writes, even 'the Beaux-Arts parti must also be understood as a system of relations, but one in which the transformations

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<sup>51</sup> Peter Eisenman, 'Feints: The Diagram', in Cassarà, Silvio, ed., *Peter Eisenman: Feints* (Milan: Skira, 2006), pp. 203–05 (p. 204).

<sup>52</sup> Eisenman, 'Feints: The Diagram', p. 204.

<sup>53</sup> Eisenman, 'Feints: The Diagram', pp. 204–05.

<sup>54</sup> Eisenman, 'Feints: The Diagram', p. 205.

<sup>55</sup> Barth, 'The Complication of Type', p. 162.

occur within the lines of its diagram'.<sup>56</sup> In the *parti*, the diagram is contained as 'part of a syntactically dense and articulate system' and *analytique* that facilitates the transposition of the *esquisse*—with its potential multitude of articulation—into the specifics of a design.<sup>57</sup> When the *parti* was challenged by a Modernist functionalist diagram and generalised relations, the 'dense hermetic system' was demolished.<sup>58</sup> The Modernist 'decorated diagram', as Klaus Herdeg claims, was driven by aestheticism yet presented an absence of design, 'a literal expression of functional relationships' with buildings 'reduced to one purpose: to excite the eye'.<sup>59</sup> While Eisenman in his rejection of type conceptually conflates it with Durand's taxonomies of genres, thus with form and function, and the Modernist optical diagram, his definition of his own diagrams remain surprisingly close to Pai's description of the Beaux-Arts practice.

The design process was therefore a search within and over these dense traces, reading into and drawing out architectural ideas. [...] This simultaneous analytic and synthetic procedure could be applied to all stages of design, and was a practice essential to the progressive development of a project. Architectural design was then a discursive process of hermeneutics and transcription. This process involved a kind of "planar vision" that must be distinguished from pictorial perception. [...] The Beaux-Arts plan was then a diagram; not only in the sense of being a reduction or abstraction of reality, but also because it was an instrument of creating something else. [...] If we define the diagram as a kind of drawing that possesses instrumental relevance within a system of relations, the Beaux-Arts plan was the diagram par excellence.<sup>60</sup>

All architectural diagrams have an intention to resolve elements by structuring their relations and without exception have a spatial, formal, or structural bias if effective. Diagrams in architecture are, by their very nature, representational and rely on graphical material or transposition. Although diagrams are instrumental in rethinking relationships and through their abstraction open-ended in their potential for authorial interpretation, as the theories of type reveal, diagrams are only the means or intermediary between the conceptual thinking associated with types and the articulation of material models. As Barth posits in his analysis of the relationship between type and diagram, 'what typology promised was a way to reason about architecture, its structural variations and transformations and its role in urban change—and to do so as a discipline with some effective autonomy. Typology is seen to link current practice to what Eisenman would later call architecture's anteriority'.<sup>61</sup> Barth then concludes: 'The idea that the diagram inheres in

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<sup>56</sup> Pai, *The Portfolio and the Diagram*, p. 250.

<sup>57</sup> Pai, *The Portfolio and the Diagram*, p. 250.

<sup>58</sup> Pai, *The Portfolio and the Diagram*, p. 250.

<sup>59</sup> Herdeg, *The Decorated Diagram*, p. 2.

<sup>60</sup> Pai, *The Portfolio and the Diagram*, pp. 55–56.

<sup>61</sup> Barth, 'The Complication of Type', p. 160.

a dramatically reformulated typology would offer one direction for encouraging that future discussion.<sup>162</sup>

That diagrams that are effective to design have to abandon their immanence is also argued by William Braham: 'Diagrammatic methods succeed precisely where they relinquish their stronger aspirations, situating the humbled architect (post-postmodernism) as another variable in the diagramming.'<sup>63</sup> This is perhaps also the moment when diagrams coincide with typal reasoning, as 'typology appears to become of prime relevance to architectural debates when the cultural parameters which have lent authority to a certain formal expression lose their credibility and thus become less prescriptive', requiring an epistemic and discursive rethinking of established practices, conventions, and styles by considering them less authoritative than diagrammatic.<sup>64</sup> Type and typology are therefore the framework to meaningfully conceptualise form. What diagrams contribute to the tension between conceptual types and schematic models is the replacement of their dialectic opposition with possible synthesis, making the archival and historical material represented by the anteriority of architecture available to typal reasoning and analysis by incorporating aspects of the interiority of architecture. In other words, the eventual singularity of architecture is the formation and clarification of a discursive typal idea transposed through the diagram to one of its possible material manifestations. With the introduction of diagrams, the interchange between type and model becomes a syntactic and semantic communication, but is neither autonomous nor invents a new syntax.

Fundamental for the typological or diagrammatic function is the premise that architecture does not just exist as a specific object but as the generic possibility of objects. Therefore, the typo-diagrammatic purpose is to limit and define these typal possibilities by structuring a projective idea through a use of models without providing a finite formal representation. The necessary communication of an idea hereby depends on conventions, and architectural design thus informed is presumed principled in its inventions. What diagrams contribute to the tension between conceptual types and schematic models is the replacement of their dialectic opposition with possible synthesis, making the archival and historical material represented by the anteriority of architecture available to typal reasoning and analysis by incorporating aspects of the interiority of architecture. In other words, the eventual singularity of architecture is the formation and clarification of a discursive typal idea transposed through the diagram to one of its possible material manifestations. With the introduction of diagrams, the interchange between type and model becomes a syntactic and semantic communication, but is neither autonomous nor invents a new syntax.

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<sup>62</sup> Barth, 'The Complication of Type', p. 164.

<sup>63</sup> William Braham, 'After Typology: The Suffering of Diagrams', *Architectural Design*, 70.3 (2000), 9–11 (p. 11).

<sup>64</sup> Bandini, 'Typological Theories in Architectural Design', p. 387.

To conclude, the layered and contradictory internal and external relations of architecture—to content, form, structure, society, culture, and history—require syntheses that are specific yet discursive. By abstracting and analysing the ‘deep structures’ of architecture, common organisational, syntactic, and social diagrams, type can be analysed and projected. This is, however, not to say that a multitudinous and multi-scalar type has no qualitative differences. In fact, they are a precondition to type’s efficacy to operate strategically and tactically at different architectural and urban scales. While ‘fundamental types’ are conceptually immaterial and ahistorical, constituting a Semperian ‘motive’, they are at the same time, when they become buildings and urban armatures, historical and critical to architecture’s material presence and singularity, as well as to the city’s formation. The *fundamental types* or motives are, as Quatremère and Semper propounded, memetic and not mimetic. *Fundamental types* thus, on the one hand, present practice-driven formal solutions that are unstable and receptive to transformation and, on the other, represent a material and socio-cultural knowledge. Although a formative part of the disciplinary and historical discourse of architecture, types do not require historical continuity. They are defined by a performative consistency and renewed historicity through which they resist their expiry and effect change. Despite their implicit autonomy, types are an integral part of the physical-material, socio-political, symbolic-cultural, and historical fabric and conception of our cities, thus, only momentarily autonomous. Therefore, a continued rethinking of types and their effects through typal reasoning and transformation is of significant value to architectural research and fundamental to a changing disciplinary knowledge.

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