Syllabus

Design-Driven Research

Fuoco Amico 11

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Syllabus

Five Themes on Design-Driven Research

This issue presents the papers elaborated after the "Design Driven Research Seminar" held by Alessandro Rocca in 2024. The authors are Candidates for the Ph.D. Program of "Architectural Urban Interior Design" at the Department of Architecture and Urban Studies, Politecnico di Milano.

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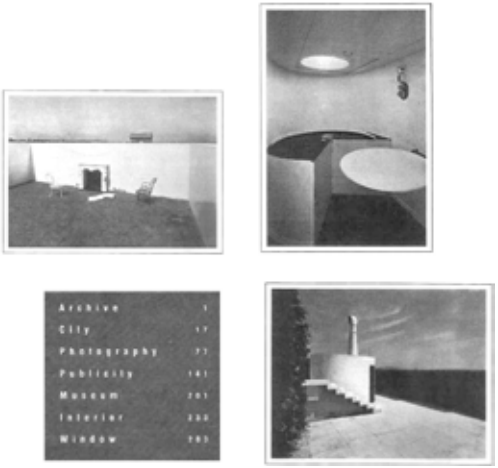
A Syllabus on Design-Driven Research
Alessandro Rocca

The seminar, held in February 2024, was addressed to newly enrolled PhD students of the Architectural Urban Interior Design program, graduates with a Master of Science in architecture, and beginners approaching the world of research for the first time.
The course consisted of five lessons, with an initial introductory communication on Design-Driven Research to build a solid link between the design activity in which young architects have been trained and which constitutes the basis of their cultural background and research. In this introduction, I gave orientation elements regarding the methods, and, on this point, I particularly insisted on the application of the so-called Five Ws, which are often mentioned in journalism and police investigations.
The Five Questions: “Who? What? Where? When? Why?” are, in my opinion, a worthy invitation to practicality and concreteness. The Five Ws fulfill

Hermagoras of Temnos' method of dividing a topic into its "seven circumstances" (who, what, when, where, why, in what way, by what means) provided the roots of the "5 W's" used widely in journalism, research, education, and police investigation to ensure thoroughness in the coverage of a particular incident or subject matter.



Research by Reading: Montage from Beatriz Colomina, *Privacy and Publicity, Modern Architecture as Mass Media*, MIT Press, 1994.

well the instrumental purpose of allowing an immediate verification of the consistency of the research topic in the light of obvious but inevitable questions and moving the initial discussions to an objective, shareable, and comprehensible level.

In my personal experience, after having directed a doctoral program for six years, most doctoral students approach research by addressing questions that are too broad and that, due to their complexity, can only be treated in generic terms. In the intuitive starting attitude, there is a prevailing need for a broad scope and large horizons, for vast cultural panoramas that, if not adequately limited, lead to mappings, lists, and compilation without in-depth analysis.

This tendency towards horizontal development, with much extension and little depth, is generally not within the reach of the doctoral student and produces a detrimental effect, namely

that the research turns out to be the report of a study of questions and facts already known and does not bring any contribution of novelty and originality. Furthermore, it is always necessary to carry out a work of separation between the author, the researcher, and his work. The practice of the project pushes us to make extensive use of the so-called Tacit Knowledge, that is, the process of elaboration that goes through non-explicit and non-recognizable steps, sometimes not even by those who carry them out. In the design process, there is a component of synthesis, intuition, and compression of logical steps that has nothing to do with the irrational, in my opinion, but that escapes superficial perception and reveals itself only at the cost of an in-depth analysis, an analytical deconstruction of the process, both in the most creative part and in the most negotiating, technical and bureaucratic part.

This synthetic process must also be adopted in research, which requires the same creativity, originality, and technical mastery but also a clear awareness and consciousness of the different steps and the purposes of the path that is taking place.

Five Routines

The five thematic lessons were based on as many activities that represent essential phases of the research: designing, reading, drawing, writing, and comparing.
The first aimed to identify some steps in the relationship between the project and research, trying to specify the Design-Driven area. In addition to the W5, already mentioned, the communication explained the preferential AUID research lines organized in this way:
§ *Theories of architecture and architectural design*
Question: How theories and design match, generating contemporary architecture

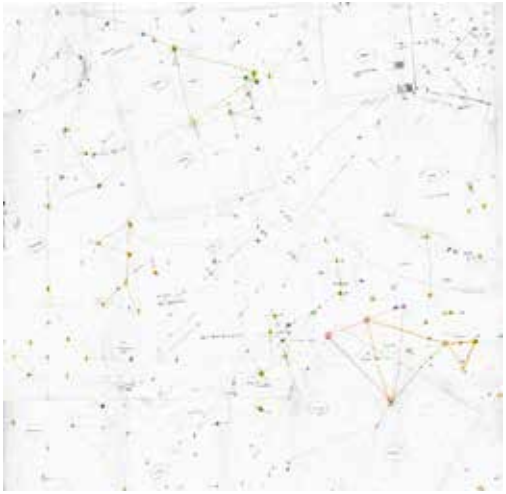
Research by Drawing: John Hejduk, *Victims* (New York: Rizzoli, 1986).

Action: Framing premises, goals, and results, analyzing texts, debates, projects, and buildings.
§ *Architecture as a contemporary narrative*
Question: keywords, slogans, mainstream and elitist discourses.
Action: Investigating how research, criticism, and education generate ideas, ideologies, fetishism, and critical thought.
§ *Design-driven research*
Question: discovering the evident and tacit knowledge that gives life to contemporary design.
Action: exploring architecture through projects and buildings, possibly testing ideas through drawings and design proposals.
Then, we brought attention to a series of theoretical and practical testimonies to deepen the knowledge and application of design-driven methodologies, indicating some texts of particular interest, such as those indicated in the bibliography by

Rob Roggema, Johan De Walsche, Jeremy Till, and myself.

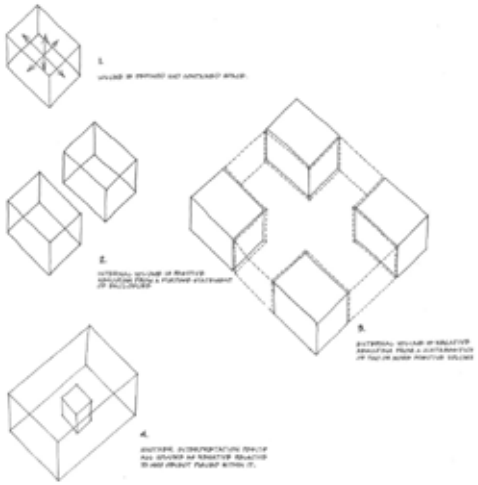
By Reading, Design, Writing, Comparison

The second lesson, *Research by Reading*, focused on reading as an essential tool for learning and knowledge, identifying some fundamental texts that can be considered as examples of Design-Driven Research. The lesson tried to formalize some tools for analyzing texts, obviously including both the written part and the iconography, to identify the crucial passages, the methodologies, the premises, the objectives, and the impact on the theory and practice of architectural design.
The third lesson, *Research by Drawing*, considered some particularly effective examples in this respect such as the *Victims* (1986) of John Hejduk and the Kanagawa Institute of Technology Workshop, 2007-08 by Junya Ishigami, the *Città Analoga*, the panel (1976) and



Research by Design: Junya Ishigami, Concept Drawing, Kanagawa Institute of Technology Workshop, 2007-08.

the painting (1973, by Arduino Cantafora), inspired by Aldo Rossi, the Palladian diagrams by Rudolf Wittkower and Colin Rowe. The *Book of Copies* by the San Rocco collective, but also artistic works such as the *Capriccio with Palladian Buildings* (1756-59) by Canaletto and the *Large Glass* (1915-23) by Marcel Duchamp.
The fourth lesson, *Research by Writing*, was based, above all, on learning by doing, analyzing in detail the preparation and creation of one text (Rocca 2022), a writing experience that followed and commented on the design, construction, life, and demolition of a large social housing complex in Genoa. The occasion of this investigation was a design workshop promoted by the PhD programs of Milan, Genoa, Venice, and Rome.
The analysis of this text led to the identification of some themes that, in a possible expansion action, could be developed in a relatively autonomous



Research by Drawing: Peter Eisenman, *The Formal Basis of Modern Architecture* (1963; Reprint, Baden: Lars Müller, 2006), 58.

Comparison:
Adalberto Libera on the balcony of the type B apartments building, Ostia Lido, 1933-1934; photo Sciamanna, Roma.
László Moholy-Nagy, Studio Wing Balconies; photo of the Bauhaus Building, Dessau, 1925-1926.

way and assembled according to different configurations. It was an exercise in deconstruction and assemblage of the text's parts, also exploring the possibilities that had not been developed. The themes identified by the text were Suburbs, Epic Housing, Megastructure, Demolition, Design Workshop, and Survey. Other latent themes that had not been taken into consideration were Demolition Technology and Socio-political Issues, both very important but not explored in depth due to lack of time and specific knowledge. In this case, the writing work could have made use of expert co-authors of the two specific subjects.
The fifth and last lesson, *Research by Comparison*, reflected on one of the most firmly rooted methodologies in architectural culture, that of comparing examples selectively collected according to specific critical criteria. The issue requires a reflection on typological studies, where Carlos Martì Arìs' book occupies a definitive position (at least for now), but also an in-depth study of the concept of imitation, with the examination of architectures that are based on the critical reflection and re-proposition of previous projects, with aspects that waver between quotation and parody. An obvious example is two projects built by OMA in France, Villa Dall'Ava (1991) in Saint-Cloud and Villa Lemoine (1999) in Floirac, which scrupulously rework Le Corbusier's five points, redefining them in an ironic and sometimes subversive way.
In conclusion, the PhD students' papers have explored these themes by tracing a labyrinthine field where recurring encounters with the same books and the same projects alternate with discoveries of new references. Overall, we can read this collection as a fluid map, a matrix of paths that intersect and fork in the investigation, not always linear, of the premises, methodologies, and results of research through the project.

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Design-Driven Research as a Form of Expressive and Creative Freedom

Francesco Airoldi

Denken bedeutet, darüber hinauszugehen.
[Thinking means going beyond].[1]

In the discipline of architecture, the link between the reflective dimension and the design one of the research thought has always been a subject of investigation. The circumstance concerns architectural thought in its specificity: within this field, the analytical and introspective connotation of human thinking can be juxtaposed with the action of projection into the future, which is typical of design. On the other hand, according to its meanings, the word “project” itself affirms the importance of a temporal dimension (“going beyond”[2]).
Starting from these considerations, it seems useful to outline the relationship that research has with design in the field of architecture in order to investigate the

1. Ernst Bloch, *Das Prinzip Hoffnung* (Aufbau-Verlag, 1954).
2. Ibidem.

Fig. 1. Thinking by drawing. A reworking of an Oscar Niemeyer's idea.

relevance of experimentation in research by design as a guarantee of creative and expressive freedom.

Design-Driven Research and Experimentation

The manifesto of the AUID PhD program in Politecnico di Milano states that it promotes "Architectural, Urban, and Interior Design" studies in all aspects within the methodological framework of design-driven research.[3] This statement falls in the broad horizon of research by design, a form of research that sees design as both an object of study and a means of carrying out that study. This means considering the act of design as a proper investigation, a reasonably controlled process that relates spatial issues to a projective act.[4] The assumptions stem from a conception of architecture as a discipline that "engages with cultural, socio-economic and environmental conditions affecting our quality of life"[5] and architectural research as "original investigation undertaken in order to generate knowledge".[6] The discourse stems from the fact that "architectural design, built and unbuilt, is able to communicate architectural ideas beyond the scope of the project itself"[7]: it can be considered a way to "make architecture speak"[8] [fig. 2].

Often, in the early stages of an investigation, reference is made to the 5Ws rule (Who? What? Where? When? Why?), completed by the sixth question

3. www.auid.polimi.it (last access: February 2024).
4. Marc Schoonderbeek, "A Theory of "Design by Research": Mapping Experimentation in Architecture and Architectural Design". *Ardeth*, no. 01 (2017).
5. Karl Otto Ellefsen, Koenraad van Cleempoel, Ebbe Harder, *Research by Design* (Production Facilities, 2015), 81.
6. Ibidem.
7. Rob Roggema, "Research by Design: Proposition for a Methodological Approach." *Urban Science* 1, no. 1 (2017): 2.
8. Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007.

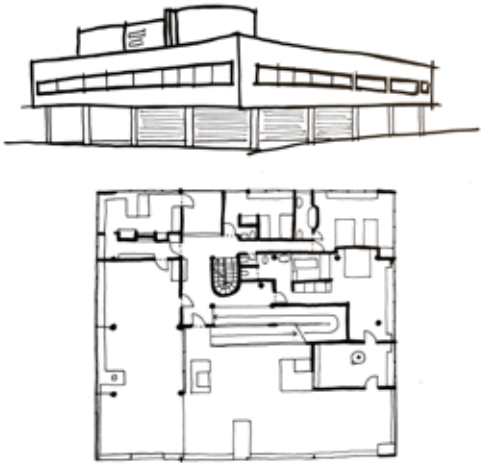

Fig. 2. The project as a way of making architecture speak. Redrawing of Ville Savoye by Le Corbusier (Poissy, 1928-1931).

of “How?” and by the seventh design-referred “What if?”. In the context of research by design, the relationship between research questions and design questions becomes a pivotal element: the practical aspects of the last two show some of the peculiarities of the design-driven research, which is referred to as a practice-based type of process.

Another hook for reasoning about research in architecture is provided by the theme of the Ca2re Conference, held in Valencia in April 2024. The title of the event was “Experimentation”, a concept that, on the one hand, seeks to bring the discipline closer – at least semantically – to scientific research, and, on the other, offers an opportunity to reflect on the possible meanings this term can take on in relation to the field of application:

“In a discipline as architecture, scientific advancement exists only for a part, for that half which concerns measurable aspects. There is another half, which is

indispensable and makes us irreplaceable. It is the one that has no beginning either end, is the circular Vitruvian speculation about the timeless quality of architectural design, mainly mixing art and technique with many other inputs".[9]
Experiment and experience have the same Latin root: both are derived from experiri, a verb composed of the particle ex meaning "from, out of, away" and the Indo-European root per, which stands for "to attempt, to test". Design, on the other hand, is described as explorative and innovative but not as a scientific process. However, as noted above, it constitutes a procedural form of thinking: this means that it can be considered as a way to build and share knowledge. Adopting a design-driven approach, the orientation of the research methodology should identify architectural design as the cultural environment for producing (ex) and testing (per) theoretical and technical notions. Moreover, the parallelism between experiment and experience takes on a significance of considerable interest in the field of architecture: if the purpose of design – an evident process of experimentation in each of its phases – is to build spaces, a reflection on the human experience that these generate turns out to be fundamental. Another argument for the importance of experimentation in this field lies in the fact that design is an iterative process: as well as in science, with the experimental method, we start from observations to reach something through a specific experience – sometimes repeated several times with the variation of the surrounding conditions – in the same wa,y the design process can be considered as a tool of knowledge of places.

9. Alessandro Rocca, "Endogenous/exogenous, the two hemispheres of architectural research". In *CA2RE I CA2RE+ Evaluation of Design-Driven Research*, ed. by Edite Rosa et al. (Edições Universitárias Lusófonas, 2022), 168.

Freedom within Research Methods

At this point, it is necessary to clarify how experimentation can be configured as a guarantee of the creative and expressive freedom which is necessary for the formulation of design-driven research in architecture. To do this, it is possible to look critically at the modes of research, starting with writing, moving through drawing, and arriving at reading.

Most of the research, theoretical or practical, is presented in a written form: a text presented with scholastic rigor is the most immediate medium for the presentation and archiving of research documents, as well as for their consultation.

Likewise, it provides an easy method of sharing and reviewing works. Institutional or editorial rules for writing a research document, such as a PhD thesis, might seem like a kind of restriction on expressive and creative freedom. This is evident when comparing institutional research with artistic processes – for example, graphic arts, music, cinema etc. While the presence of constraints helps with clear structuring and illustration of the work, it also seems to confine its experimental possibilities.

However, one must consider how every research document contains implicit design questions: first, how to design the same. This calls into question a crucial component of any text, the narrative, which makes possible the exercise of creative and expressive freedom within the process of research by writing, bringing it to a sort of research “by making”: “People conducting practice-based research that starts with historical component may find it difficult to go from reading to making, while people conducting research that is first and foremost practice-based sometimes have trouble going from making to writing. […] poiesis (from the Greek word for “to make”) is the act of bringing something

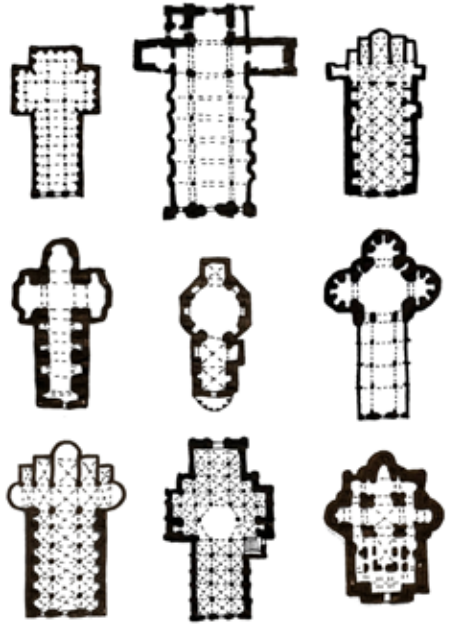

Fig. 3. Research by drawing: The use of images in the research by Carlos Marti Aris in *The Variations of Identity*.

– anything – into being that didn't exist before".[10]

Since the fundamental means of expression for architects is drawing, one would think that it could also be the main medium for writing research. This would also meet a need for freedom of expression, which underlies the creative process. Most design-driven research effectively combines text and drawing in research documents, where the latter is intended as a tool for understanding and deepening the former: think, for example, about texts such as Carlos Martí Arís' The Variations of Identity [fig. 3] or about the books by Rem Koolhaas. If, however, we shift attention from the final output to the process, we realize the potential of drawing not only as a communication tool: considering its personal and intimate dimension, it is possible to understand it

10. Dirk Vis, *Research for People Who (Think They) Would Rather Create* (Onomatopee Projects, 2021), 47.

as a medium for research reflection.[11] "Freedom is the abolition of the duty to abide by the rules of mastery and aesthetics. [...] This detachment from a mechanical system and rules, together with the need for innovation, is the force that opens the way for creativity and the expression of the unconscious".[12] Research by reading unlocks insights, generates possibilities, and propels innovation across all fields. Through an exploration of literature, we uncover new ideas, challenge assumptions, and deepen our understanding of the world. Reading enriches architectural design perspectives, fosters critical thinking, and cultivates knowledge. It empowers us to confront complex systems and issues, address challenges, and shape the future. In essence, research through reading is a catalyst for transformation and advancement in every sphere of human endeavor. However, in contemporary times and in what Franco Purini calls the unchallenged dominance of the visual,[13] image, and text education seems to be urgent. This is a matter of reading, which, in architectural research, means dealing with a language that is not only textual but also visual: as a research tool, it embodies the potential of design from the perspective of prefiguration.

11. Idem, 37.
12. Colin Ward, "Drawing the Line: some dissident architects". In *Architettura del dissenso*, ed. by Giacomo Borella (Eléuthera, 2016), 92-93. In this passage, author Colin Ward is quoting Ray Garner.

Freedom, Critical Thinking, and Dissent

Experimenting means both acting within existing methods and finding one's own methodology. Next to the traditional methods of research development, alternative methods of catalysts of expressive and creative freedom can be considered. These are mostly tools related

13. Franco Purini, *Comporre l'architettura* (Laterza, 2000), 30.

to the act of designing, such as appropriating, comparing, imitating, assembling etc. The connection between the concept of operational freedom embodied in all of these and the formation of critical thinking lies in the dialectic of process, which underlies design. The relevance of expressive and creative freedom, accompanied by this necessary critical sense, leads to the possibility of the formulation and expression of dissent, a concept deeply related to that of design hope: “Il senso rivoluzionario del dissenso, politicamente parlando, è raggiungibile in fondo solo tramite la progettazione; il dissenso che rinuncia alla speranza progettuale non è che una forma più sottile di consenso. O, se vogliamo esprimerci con maggiore prudenza, un dissenso sprovvisto di progetti, un dissenso a mani vuote, non è particolarmente pericoloso per le forme di consenso”.[14]

14. Tomás Maldonado, *La Speranza progettuale*: *Ambiente e società* (Einaudi, 1971), 68.
“The revolutionary meaning of dissent, politically speaking, is attainable after all only through design; dissent that renounces design hope is but a more subtle form of consensus. Or, if we want to express ourselves more cautiously, a dissent devoid of projects, an empty-handed dissent, is not particularly dangerous to forms of consensus”. (Translation by the author).

Although research holds significant value within the field of architecture, the essence of creative freedom stands as a fundamental pillar of design-driven processes. It empowers architects and researchers to conceive groundbreaking ideas and challenge traditional norms, transcending disciplinary confines and fostering collaboration and experimentation across various fields. After all, this kind of freedom celebrates the power of critical thinking, allowing dissent and paving the way for imagination, future projection, and unexpected discoveries.
Moreover, exercising creative freedom necessitates a commitment to addressing

ethical, social, and cultural dimensions of design, ensuring that architecture empowers communities, advances social equality, and embraces diversity. It is linked to a responsibility to advocate for inclusive design principles, sustainable development strategies, and approaches that prioritize the well-being and dignity of all. Ultimately, architectural research and creative freedom synergize to propel innovation and significance: by embracing a comprehensive approach that merges empirical investigation with imaginative exploration, architectural design-driven research possesses the potential to redefine cultural boundaries and draw a better future.

In Conclusion, Openings

After reasoning about the modalities (research by writing, research by drawing, and research by reading), which refer to both process and outcome, it is fair to ask: how should design-driven research be concluded? Perhaps the most interesting element of an experimental process is that its loose connotation can lead to further research questions. With a view to knowledge sharing and creative and expressive freedom, it is necessary to consider research – especially design-driven research – as an effort that is not only individual (in part) but especially collective. Possible future horizons, openings to other studies, or expansions of the same must be considered before, during, and after the work. Thus, "the ending is [or become] also a new beginning".[15]

15. Dirk Vis, op. cit., 105.

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Dichotomies in Architectural Research
Giulia Azzini

Philosophically derived, the term dichotomy indicates the logical bipartition of a concept into two opposites: it is a rich and versatile principle that can be used to understand the complexity of architectural theory and practice while developing original perspectives and approaches to research. The dichotomy as a comparative tool is already widely employed by classical authors such as Vitruvius and Leon Battista Alberti (Tavernor 1998): binomials such as order-disorder, symmetry-asymmetry, and form-function reflect the intrinsic tensions of the architectural discipline and are addressed not as rigid oppositions, but as opportunities to develop a synthesis, understood as a reasoned composition of distinct parts within a comparison. A similar approach can be found in the work of Andrea Palladio, known for his reworking of classical architecture in response to changing Renaissance paradigms, framed in the tension, still relevant, between tradition and innovation (Palladio 1965).

This contribution is constructed based on such considerations: first, five texts were written related to five actions considered relevant for the drafting of architectural research (defining what/why/how, reading, drawing, writing, and comparing), identifying for each action a significant dichotomy and a possible connection. Then, the texts were joined through "montage"[1] according to a single logic: the identification of a perimeter for architectural research, understood as a possible 'why' of the present contribution. This investigation is central in the framework of doctoral research, but given its complexity, the result has to be considered open-ended, still constituting a good starting point for possible and desirable future additions.

1. According to Manfredo Tafuri, montage is a critical act of recomposing fragments once they are historicized (Tafuri 1987, 15).

Research vs. Practice: The Production of Knowledge as a Common Purpose

Within the framework of research by design, this section looks at design both as an object of study and as a means of carrying out that study (Glanville 1999). A specific dichotomy of architectural discipline, widely debated in contemporary times, is therefore considered, the one between practice and research. Is it possible to deem architectural practice as a form of research? According to Jeremy Till, this is one of the three myths that have evolved around architectural research, sometimes holding back its development.[2]

Carlos Martì Arìs has a different position: he argues that any theoretical construction in architecture should assume an auxiliary role compared to works, the authentic repositories of knowledge as much in architecture as in any other artistic activity (Martì Arìs 2021).

To deal with this issue, it is first necessary to reason about the meaning of architectural research. According to the EAAE Charter on Architectural Research (2024), architecture is the discipline devoted to the creation, transformation, and interpretation of the built environment and the articulation of space at various scales, while architectural research is a process aimed at generating new knowledge concerning the discipline. The dividing line separating the latter from other fields is not so easily distinguishable: one of its 'edge' constituent elements is surely its object, the building, or any artifact of a small enough scale that does not cross the border into urban and landscape design. Another distinguishing element is its "timeless quality" (Rocca 2022, 170). Connecting the two themes mentioned

2. As Jeremy Till states, the three myths are: architecture is just architecture; architecture is not architecture; building a building is research (Till 2007, 4-6).

above – the quality and the architectural object – seems important to answer the starting question. Leaving aside the extended number of subjective aesthetic categories, perhaps the only way to judge the quality of an architectural object lies in the reasons for its being: the awareness of its designer, his historical and cultural background, the choices that led to the object's conception in a certain time, place, and way. And this, after all, compares architectural research and practice: the knowledge of those who exercise them. If we consider, for instance, the considerable critical and architectural output of Rem Koolhaas,[3] it is evident how architectural research and practice constitute inseparable parts of a single circular process, the result of continuous revision, repetitions, and improvements, which fulfills the function of producing knowledge and development concerning architecture.

In conclusion, if "architecture is a form of knowledge that can and should be developed through research" (Till 2007, 4), the built object can be considered a product of research or, even better, a tool for research: its design cannot be separated from a suitable cultural background of the designer, and its value, which does not exhaust with its construction but survives and matures throughout its existence, lies in constituting tangible research material.

Drawing vs. Photography: The Narration of a Project

Drawing and photography are often used by the architectural discipline to describe a project or enrich the narrative of research. Despite the differences between the two tools, they are still parts of an

3. Rem Koolhaas is one of the contemporary architects who has maintained an interdependence between theoretical positions and design strategies. After the Office of Metropolitan Architecture (OMA) foundation in 1975, he established the research studio AMO in 2000.

iconographic apparatus and, as such, can be freely manipulated to communicate a particular point of view. Thus, drawings and photographs change significantly if they are produced or employed by an architect or a different figure.
Browsing the article of Domus about Villa Planchart (Ponti, 1961), it is possible to make a comparison between the photos by Paolo Gasparini and the drawings by Gio Ponti: on the one hand, the disenchanted perspective of the commissioned photographer, who describes the space and its intrinsic and extrinsic relations through multiple frames that, as a whole, should provide an overall sight of the project; on the other hand, the point of view of the designer, who uses drawings as main communicative tools (fig. 1). Sections, elevations, and axonometric projections describe in this case the architecture and its structure in an analytical way, while the plans come alive and prefigure possible actions through

Fig. 1. Gio Ponti, Villa Planchart, Caracas, 1953-1957. Dichotomy between the pictures by Paolo Gasparini and the drawings by the architect. (Graphic re-elaboration by the author).

Fig. 2. Amsterdam Orphanage by Aldo van Eyck, Amsterdam, 1960. Dichotomy between the picture by Violette Cornelius (on the left) and the one by Aldo van Eyck (on the right), with a plan of the orphanage. (Graphic re-elaboration by the author).

which to build the space: thus, they play the role of diagrams, revealing a particular interpretation of reality.

Another interesting example of the dichotomy between architects' and photographers' points of view is evident in the pictures by Aldo van Eyck and Violette Cornelius, taken in the Amsterdam Orphanage around 1960 (fig. 2). Aldo van Eyck conceives design as an opportunity to invent a new form based on the particular users' needs, so that his moral intent is encapsulated in a microcosm made up of a few simple design actions. The attention paid to human behavior similarly orients the work of the Dutch photographer Violette Cornelius, who takes some pictures just inside the Amsterdam Orphanage: as Figure 2 shows on the left, the architecture serves as a backdrop for the children, protagonists of the space, whose actions could be equally replicable in other areas of the building. The picture by

Aldo van Eyck, on the other hand, has a different meaning: the protagonist is the architecture that allows a certain action to occur, such as mirroring. The children are in the center but still play a secondary role in their surroundings. In this case, therefore, the picture tells something more than the building's floor plan: its social value. Thus, photography is fully part of a complex design program, as it contains the intentions of the architect and, in a certain sense, it carries out the value of the plan for Gio Ponti: a tool for understanding the project according to the complex relationship between use, form, and function.

The essay by German architect and theorist Oswald Mathias Ungers, entitled *Morphologie: City Metaphors* and first published in 1982, represents another proof of the specificity of the architectural point of view: here, Ungers juxtaposes city plans, photographs, and texts to concretize his critical perspective (fig. 3). The book keeps the same layout, with a plan on the left and a photograph on the right, accompanied by a single metaphorical word, in English on the left and German on the right. This choice is not accidental, but shows how thought behaves after recognizing a certain object – in this case, the city plan – and reproducing it in the most familiar language. In the essay, drawing, photography, and text contribute equally to structuring the research: photography, to take up the previous comparisons, is used here as an analogy of the urban form.

Even different is the role of photography in the great production of JR artist: it has the power to transform the context in which it is applied completely, while architecture represents only its physical support (fig.4). This is a further example of how the author can manipulate an image (or architecture, in JR's case), overturn its meaning, and lead to totally different results.

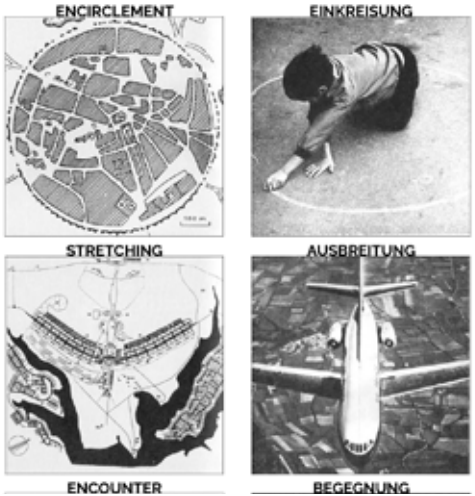

Fig. 3. Analogies from Morphologies: City Metaphors by Oswald Mathias Ungers. (Graphic re-elaboration by the author).

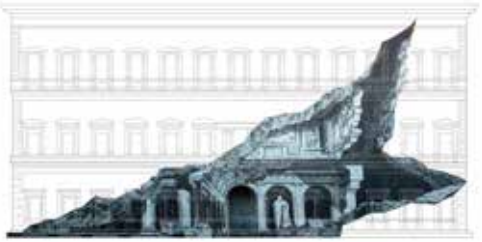

Fig. 4. Human-scale collage by JR on Palazzo Farnese, Rome, 2021. (Graphic re-elaboration by the author).

Text vs. Image: The Research Structure through a Comparison between Venturi and Koolhaas

So far, it has been proved how images, in their various forms, can be manipulated in different ways and according to a well-defined point of view: together with the text, they also represent central tools for understanding research, involving the actions of reading, drawing, and writing. Thus, text and image are opposite in terms of form but not in terms of content: their complementarity is evident, for example, in several re-editions of *De Architectura* by Vitruvius, supplied with valuable illustrations missing instead of in the original version.[4]

4. *De Architectura* by Vitruvius has not survived in its original transcription but in the form of several manuscripts without images that, probably, must have accompanied the text. The editio princeps was by Giovanni Sulpicio da Veroli around 1486, with illustrations by Giovanni Battista da Sangallo. Since then, the work of Vitruvius acquired extraordinary fame, including many editions characterized by a balanced alternation of drawings and descriptions (Sdegno 2005).

Starting from this dichotomy, the present section investigates the possibilities of defining the content of architectural research through inspectional reading.[5] To do so, text and image are further divided: the former is represented by the title (to understand the main themes of research), the table of contents (to understand the structure of research), the bibliography (which defines the background of research), and the abstract (in which the intentions of research are stated, summarizing the ‘what’, ‘why’, and ‘how’); the image can, in turn, be a photograph, a drawing or a diagram, placed on the cover and throughout the

5. “This kind of reading is the art of skimming systematically. When reading at this level, your aim is to examine the surface of the book, to learn everything that the surface alone can teach you [...] Upon completing an inspectional reading, no matter how short the time you had to do it in, you should also be able to answer the question, “What kind of book is it—a novel, a history, a scientific treatise?”” (Mortimer and Van Doren 1972).

reading to facilitate the comprehension of a text and vice versa.
By analyzing the cover of some books, together with the table of contents, abstract, and figures, the ability of the iconographic apparatus to define the critical point of view of architectural research will be investigated, and thus, its coherence with the textual content. To carry out the study schematically, two well-known architects and theorists are chosen: according to Peter Eisenman, a discursive relationship with significant figures for our discipline is important to develop a personal approach to architecture and, consequently, to research (Eiseman 2015, 9). Then, two essays are selected for each author: *Complexity and Contradiction in Architecture* and *Learning from Las Vegas* for the former, *Delirious New York*[6] and *S,M,L,XL: Small, Medium, Large, Extra-Large*, for the latter (fig. 5). This choice is justified by the desire to test how the same author structures the relationship between text and image in different ways, according to the content of the research.
The first essay, *Complexity and Contradiction in Architectur*e, shows on its cover a photograph of the Porta Pia in Rome, isolated and without any other highlighted elements: it is mentioned within the book as a contradiction (Venturi 1977, 62) due to the different elements surrounding its opening, also superimposed redundantly for both structural and ornamental reasons. The choice of this image is not accidental: reading the title and the preface, it is clear that complexity and contradiction in architecture interest the author, and they are investigated while keeping distance from the historical and environmental context, as the features of the buildings are considered of greater value than their

6. The analysis refers to the 1994 version of the book's structure, to the original 1978 version for the cover.

Fig. 5. Comparisons between the original covers of *Delirious New York* (1978) and *S,M,L,XL: Small, Medium, Large, Extra-Large* (1995) by Rem Koolhaas; *Complexity and Contradiction in Architecture* (1966) and *Learning From Las Vegas* (1972) by Robert Venturi. (Graphic elaboration by the author).

style. Hence, then, would derive the choice of the Porta Pia: an architecture avulsed from its context, consistent with the title and content of the essay. Also consistent is the subdivision of the table of contents: a catalog of chapters that refer to the terms ‘complexity’ and ‘contradiction’ or that, in any case, consider architecture and its elements without any reference to the context. Finally, the iconographic apparatus consists mainly of drawings and photographs: the latest show interiors and exteriors of isolated buildings, with very little presence of human figures, revealing the desire to present the architecture itself.

Even the second essay, *Learning from Las Vegas*, features a photograph on the cover but with a completely different subject: the scene, in its chaotic appearance, is divided by the sidewalk line, placed about 3/4 inside the composition, separating the barren Las Vegas landscape, on the left,

from the road lane, ruled by cars. An advertising sign for a body oil stands out in the foreground. The visual reference is clear and consistent with the preface: from the very first lines, the two authors state that the book consists of a study of Las Vegas architecture on the one hand and a theoretical generalization about the iconography of American sprawl on the other (Venturi and Scott Brown 1972, IX). Even the title seems simple but effective: the authors, according to their architectural perspective, study Las Vegas and learn from it something about the settlement form of the American suburb. In addition to photographs, the iconographic apparatus is dominated by the use of diagrams: comparative maps highlighting different patterns in the city, interpretive schemes, and juxtaposition of images according to the principle of cataloging are just some ways in which the complexity of urban culture and its meanings are summarized.

Rem Koolhaas organizes the relationship between text and image differently, immediately evident in the covers of two of his most famous essays. The first, *Delirious New York*, features a drawing by Madelon Vriesendorp: in a general attempt to humanize the major architectures of Manhattan, the Empire State Building and Chrysler Building stand out in the foreground, surprised at lovemaking by the Rockefeller Building, which lights them up under the incredulous and disappointed eyes of the Statue of Liberty and the other skyscrapers of the city. The only object to remain as such is the painting behind the bed: perhaps a reference to what New York might have been before its urbanization. The cover is, again, fully consistent with the content of the essay: an investigation into the intriguing reality of the American metropolis. The characters in Vriesendorp's drawing are particularly reflected in the introduction,

punctuated by several keywords including, “manifesto”, “ecstasy”, and “density” (Koolhaas 1994, 9-10).
Here are also stated reasons for the structure of the volume, “a simulacrum of Manhattan’s Grid: a collection of blocks whose proximity and juxtaposition reinforce their separate meanings” (Koolhaas 1994, 11). The final chapter, entitled Postmortem, has an obvious reference to a no longer living body, “the shriveling of Manhattanism” (Koolhaas 1994, 293).
The iconographic apparatus, once again, respects the critical point of view that governs the research: unlike Venturi, imaginary axonometric projections, photographs of architectures perfectly contextualized and often animated by people, postcards, and models appear, showing an iconography of the congestion, as well as the stylistic signature of OMA’s researches.
The last essay, *S,M,L,XL: Small, Medium, Large, Extra-Large*, has no image on the cover: the title and the authors’ names, with a font reminiscent of the giant order, are the only protagonists. Again, the reasons for this choice lie in the very structure of the book: a kind of dictionary of OMA’s projects, arranged according to scale and interrupted with a list of keywords referring to architecture in general, in alphabetical order.
The images have a crucial value in contextualizing the different projects, being an integral part of the narrative and ranging, once again, from drawings of plans, sections, and elevations to photographs, collages, and diagrams, according to a seemingly random and analogical organization.
In conclusion, all four essays demonstrate how text and image are two collaborating factors in the drafting of a research project. The image, in particular, can be narrated by all its different declinations from the critical point of view of the

author, revealing a very specific plan and fully fitting, consequently, into the research project.

Conclusions: The Identification of an Architectural Research Perimeter

In this contribution, the dichotomy has been used as a tool for comparison between the opposing terms: research and practice (referring to research by design), drawing and photography (referring to research by drawing and research by reading), text and image (referring to research by writing, research by reading, and research by drawing). The outcome was to build, in its complexity, a perimeter for architectural research, defining some of the aspects that differentiate it from other disciplines. Through a personal synthesis, or even a "unitary interpretation" (Aureli 2011, IX) of the dichotomies mentioned above, some key topics have been identified for a preliminary definition of such a perimeter: the production of architectural knowledge, the narrative, and the structure of research through the relationship between text and image, which can be manipulated differently while always maintaining a specific architectural point of view.

From the dichotomous analysis, it is possible to provide a personal definition of architectural research: an original contribution to the architectural culture, capable of generating knowledge and revealing, through a clear and specific language, a well-defined critical perspective.

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Dogmas, Pixels, Scripts, Types, and Other Matters of Boundaries in Architectural Research

Filippo Lorenzo Balma

In architecture, the determination of a suitable research approach holds unprecedented significance compared to other fields. The intricate interplay between scientific, artistic, and humanistic domains within architectural design renders its boundaries ambiguous, methodologies diverse, and objectives multifaceted. Moreover, the design process necessitates a constant oscillation between theory and practice, demanding a thoughtful exploration of the positioning of architectural research and the establishment of crucial connections between these two realms to generate meaningful knowledge.
The primary challenge for emerging researchers and doctoral candidates in this field lies in comprehending the vast expanse within which they must navigate. Recently, various authors and institutions have sought to delineate guidelines and indications with the aim of narrowing the action of architecture research. Among these, the “EAAE Charter on Architectural Research” (2022), drafted by the European Association for Architectural Education, stands as the principal reference document for architectural schools and universities, including the Politecnico di Milano and the AUID doctoral program.
Arguably, the central issue of architectural research is defining the limits of its field of action. Specifically, how architecture should interact with and leverage other domains: when it is naturally multi- and trans-disciplinary, as defined by the “EAAE Charter”, and when it risks being misplaced, stepping beyond its competencies. Establishing clear borders aids in addressing research toward coherent and significant results for architectural understanding.
Certainly, the complexity of contexts in which architecture emerges, coupled with the global challenges and transformations design faces, compels researchers to

naturally engage with other disciplines. These disciplines, to varying extents, interact with architecture, touching upon cultural, historical, ethical, aesthetic, socio-economic, and environmental conditions,[1] which both influence and are influenced by the design process and the life of architecture and the city.
Nevertheless, as mentioned above, there is the risk of losing focus. As Jeremy Till claims in his "Three Myths", on the one hand, architecture, as a discipline, should not be entirely autonomous and self-referential; however, on the other hand, it should also avoid turning into other disciplines for authority.[2] While architectural research correctly draws on other scientific contributions, it should not be completely overshadowed and dragged by them. Architecture possesses its own voice in academia and the production of knowledge.
Therefore, how can research achieve the correct balance between these two conditions? Perhaps this occurs when design takes center stage in the investigation, emerging as the driving force of the research, blurring the distinction between theory and practice.[3] This is evident, for instance, in the work of Pier Vittorio Aureli and Dogma studio, where architectural discourse strongly incorporates economic and social elements, typically associated with other fields, through a robust connection of research, profession, and teaching, blurring the lines between theory and practice. This serves as a strong example of so-called Design-Driven Research, where design is both the objective and the

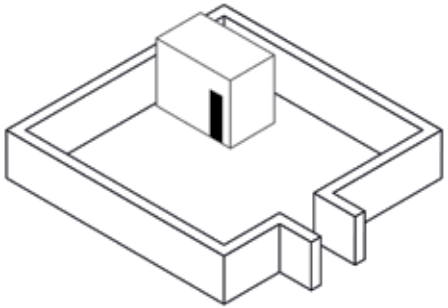
1. European Association for Architectural Education, "EAAE Charter on Architectural Research" (Brussels, 2022), 2-3.
2. Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007.

3. Alessandro Rocca, "Research vs. Design: A Favorable Conflict." In *Comparison. CA2RE / CA2RE+ Conference for Artistic and Architectural Research* (Siracusa: LetteraVentidue, 2020), 43-50.

process of the research, making the issue of delineating boundaries superfluous. The following chapters explore how to overcome the issue of boundaries in architectural research through the examination of case studies and four main research actions: reading, drawing, writing, and comparing.

Reading through Dogmas

Even in the field of architecture, reading assumes a pivotal role in the research process. It is essential to not only engage with texts but also to discern what specific information we are seeking in order to align with our research interests. Authors adopt diverse approaches in crafting and organizing their written works, whether it be a book, paper, or other documents. What roles do texts, images, and drawings play in them? How are they linked and related to one another? Consequently, comprehension varies based on the authors' individual writing styles,



What are the boundaries in architecture? (Drawing by the author).

structures, and aims.
Pier Vittorio Aureli and Dogma Studio exemplify a well-defined approach in their publications. In their recent work, Living and Working (2022), the studio explicitly outlines their method. The book compiles a decade's worth of research on domestic space, examining the history of domesticity and design projects with a specific focus on the relationship between living and working.[4] Theoretical research and design practice are strongly interrelated, as in their profession; the investigations presented in the first part of the work serve as a foundation for the projects introduced in the second part. However, the authors outline in the preface that "there is no cause and effect between the two parts, but a continuous tension between critical inquiry and attempts to reform",[5] in this case, the housing space.

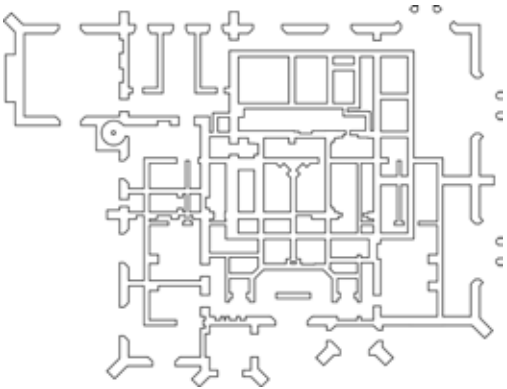
4. Dogma, *Living and Working* (MIT Press, 2022), 4.
5. Ibid.

For sure, the textual component dominates the initial section of the work, where the research needs the support of a more traditional narration. The exploration of domestic space involves historiographic analysis aided by contributions from etymology, economy, anthropology, sociology, and gender studies. The intersection of disciplines, along with a neo-historic materialist approach, is ingrained in the studio's mindset.
Yet, drawings and illustrations are the core aspects of Dogma's works, both in theory and design. The history of domesticity unfolds through meticulous re-drawings of housing spaces from proto-history to the present. A detailed comparison of various plans guides the narrative, with plans displayed side by side, illustrating the evolution of domestic space in composition and distribution, engaging in a dialogue with the text. In the second section, illustrations are

employed to present design proposals and evoke new perspectives of domesticity. In both instances, a rigorous graphic code serves as a dogma, with plans, sections, axonometries, and views uniquely represented for each.
This commitment to rigor and repetition not only establishes the studio's identity but also reveals an original research methodology strongly related to architecture and design, which the researcher, as a reader, needs to understand.

Drawing in the Pixeled Arena
The instrument of drawing stands out as a distinctive element in architectural and design research. The unique capability to represent spatial realities, intricate processes, and prospective scenarios through images is an important asset, setting architects and designers apart from their counterparts in other disciplines. This advantage is not confined solely to the practical application of design but extends seamlessly into the realm of research. In alignment with the insights of Simon Unwin, drawing in architecture can be interpreted in three ways: firstly, as a medium for communication, facilitating interaction with different figures, such as clients and builders; secondly, as a medium for developing and generating ideas, within the design practice; and thirdly, as a medium for analysis.[6]
Especially through the lens of analysis, scholars and researchers harness the power of drawing to acquire knowledge and new understanding, probably in a manner that is arguably more accessible and intuitive than traditional textual forms.
However, among these three interpretive dimensions, a genuine demarcation does not exist. Unwin posits that drawing is not

6. Simon Unwin, "Analysing Architecture Through Drawing." *Building Research & Information* 35, no. 1 (2007): 102.



Reading domesticity (elaboration and montage by the author from plans of: hypothetical model of a tripartite house from the Late Ubaid period, 5000-4300 BCE, house in Olynthus, Greece, ca. 450 BCE, proposal for a Model House for Families by Henry Roberts, 1851, gentlemen's house by Robert Kerr, 1865, from Pier Vittorio Aureli and Maria Sheherazade Giudici, "Familiar Horror". Log, no. 38 (2016): 105-129; Robert Kerr, The Gentleman's House. John Murray, 1865).

merely a medium but a distinct arena where mental conception and physical realization coalesce.[7] The conditions of the arena undergo continuous transformations over time, evolving with the advent of new approaches to architectural drawing. From traditional sketches, handmade plans, and sections to contemporary digital renderings and photomontages, the methods of communication, exploration, and spatial intention have undergone a profound shift. Nicola Braghieri explores this transition from the analog to the digital era in architectural representation in his article "Versifying machines or executive tools?" published in Casabella 914. Braghieri investigates how the new emerging technology and techniques influence both visualization and design architecture. Indeed, this transition to digital technology concerns not only the devices and instruments of designers but

7. Ibid., 109.

also their minds. Thus, researchers cannot overlook this revolution when approaching drawing.
In the digital era, Unwin's arena evolves from a place of "continuous" shades, as in Leonardo's painting, to a dimension of "discrete" intervals,[8] akin to a pixeled videogame scenario. Logic, repetition, regularity, and control take precedence over the ambiguity, variability, and uncertainty inherent in analogical thought. Algorithms and mathematical rules govern the new methods of drawing architecture, buildings, and spaces. Similarly, the analysis of drawings adopts the same rigor, employing processes of repetition, categorization, and comparison through rigid matrices and abacuses archived in databases.
This process of pixelation of architecture extends its influence on design practices. In recent years, design approaches have evolved in tandem with the new modes of representation of the digital era. The widespread adoption of algorithmic and parametric trends among starchitects is proof of this. However, it is particularly pronounced in the distinctive creative method employed by BIG. The studio perceives the design process as a computational algorithm characterized by sequences of phases, where the human factor is subtly obscured beneath the apparent logic. Its illustrations are recognized for vividly depicting this methodology: from an initial form of communication, it became its own way of projecting.
The evident dialogue and interdependency between drawing and design captivate architects when delving into research through drawing and understanding drawing. This intricate relationship not only reflects the evolution of tools and technologies but also underscores the profound impact of drawing on the very

8. Nicola Braghieri, "Versifying machines or executive tools?," *Casabella*, October 2020, 4.

nature of architectural thought and creation in our contemporary era.

Beyond Words

The third important aspect of research is the action of writing. While publications often serve as the primary output for scholars, unfortunately, they are sometimes produced solely to garner recognition in academia. It is essential to redefine the purpose of publications, pointing out that they should not merely serve as a final product or a medal highlighted in a CV. Instead, publications should be viewed as active and participatory tools integral to the research process, contributing to knowledge creation.

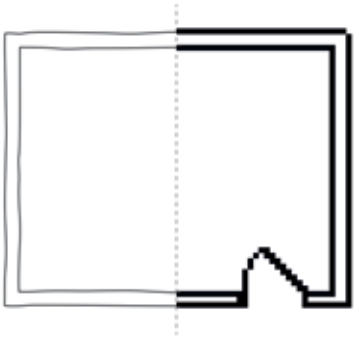
Adding to the complexity of this endeavor is the difficulty of making writing participate and apply in the architectural project practice. In other words, how the power of writing can generate new awareness on a material level: architecture that belongs to a different type of project, naturally, with diverse approaches, dynamics, and purposes.

With these considerations in mind, I would like to focus on writing as an awakening tool for the construction of knowledge rather than focusing on how to arrange a text (partially explored in chapter 2). For this reason, I find it interesting to start with the analysis by Alessandro Rocca in *Selve in città* (2022). The author proposes to reverse the classical relation between writing and designing in architectural criticism. The writing of critiques should follow or even anticipate the design process.[9]

Writing beforehand or during the designing phase leads to assuming a journalistic and investigative role in architecture. In this assumption, writing

9. Alessandro Rocca, “Epica e Beffarda. Gli ultimi giorni della diga,” in *Selve in città*, ed. Alberto Bertagna and Massimiliano Giberti (Milan: Mimesis, 2022), 172-179.

means scrutinizing research deep into the inner workings of the act of the design process of architecture, understanding things in the development and not at the end when finished. This ongoing narration grasps the real complexity of the project, not only the mere description of the final object. It can interact in the process to construct a dialogue and create discontinuities that could redefine the project itself. In this context, writing could be compared to the role of a sketch or a maquette made in an atelier or a design studio. Sketches and maquettes are not meant to be a final product, but an active tool in the process of making architecture; they are redrawn and rebuilt several times to investigate the design.So, should writing be a parallel investigation, in part, constitutive of the project?
The optimistic perspective on writing as an active process in research should extend to academic publications. Instead of being perceived as mere consumable



From analog to digital (illustration by the author).

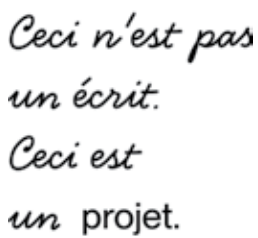
products, they should be recognized as processes of consciousness construction. By embracing the dynamic and participatory nature of writing, scholars can contribute meaningfully to the ongoing discourse in architecture, transcending the conventional boundaries of publication as a finality.

Not Only Imitation

The research delves into the recognition that the process of architectural evolution occurs through iterative repetition and imitation. In "Ornament. The Politics of Architecture and Subjectivity", Antoine Picon asserts that the doctrine of imitation prevailed in the arts, especially until the XVIII century. However, while painting and sculpture tended to imitate nature, architecture was prone to imitate itself.[10] This propensity still persists in contemporary architecture. The pursuit of "invention" in design continues to draw upon past examples in terms of form, language, structure, and symbolism. Consider how the canons and expressions of Classical architecture have transcended into movements like Modernism with figures such as Ludwig Mies Van Der Rohe, Postmodernism with, for example, Aldo Rossi, and even in contemporary architecture with designers like David Chipperfield.

Therefore, in research, understanding the evolution of design in architecture means uncovering the underlying principles guiding this process of imitation and repetition. In essence, it requires identifying a key for the comparison and re-reading of architecture. However, due to its trans-disciplinarity and fragmented nature, the blurred and porous borders of architectural research seem to pose challenges in achieving this goal. Carlos Martí Arís suggests that the

10. Antoine Picon, *Ornament. The Politics of Architecture and Subjectivity* (Chichester: Wiley, 2013), 14.



Writing as designing (illustration by the author).

concept of "type" can serve as this interpretative key, narrowing the borders of investigation through comparison. Through the notion of type, architecture reaches a level of abstraction.[11]
As Aldo Rossi asserts years earlier in *L'architettura della città*, the type is what is closer to the essence of architecture, persisting as a principle of architecture and the city.[12] It is a formal constant that transcends the issues of history and geography, language, and style.
The type is not an isolated "thing" but rather a derivation of relationships established among things.[13] This perspective is crucial because it allows us to interpret architecture through relations and abstraction, enabling an understanding of its evolution, or stability, over time. Research by comparison guides

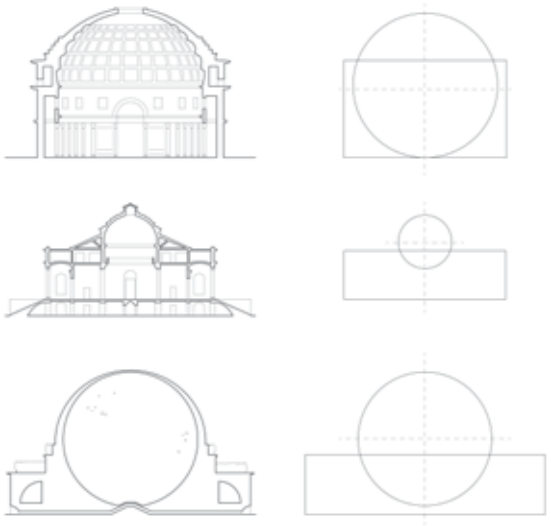
11. Carlos Martí Arís, *Variations of Identity. Type in Architecture* (Marseille: Cosa Mentale, 2021), 25-26.
12. Aldo Rossi, *L'architettura della città* (Milano: il Saggiatore, 2018), 37.
13. Carlos Martí Arís, *Variations of Identity*, 26.

the design practice of architectural studios and firms with different approaches. Two of the studios previously mentioned in this paper, Dogma and BIG, serve as examples.
In the case of Dogma, its investigation of domestic space aims to analyze the evolution of housing through the rigorous comparison of plans. The analysis pursues a typological examination of houses over time. Here, the type is understood as the abstraction of the compositional layout and the distribution of architecture in plans. Thus, Dogma uses research by comparison to acquire knowledge on the domestic space and its transformations by putting plans in parallel (as seen in the book *Living and Working*).
The design practice of the studio typically works in contrast or repetition of investigated types.
On the contrary, BIG uses its own interpretation of type as a starting point for design and research comparison. The type could be meant as the process of transformation (extrusion, shifting, cutting, etc.) of an original form (generally, a rectangle or a parallelepiped).
In this case, the comparison is based on the differentiation from the original form and serves as the instrument of "invention" in design: new variations of transformations mean new projects.
In essence, architectural evolution hinges on the dual principles of imitation and comparison. The concept of "type" not only offers a key to understanding this intricate process but also influences diverse approaches in both research and design practices.

Conclusions

The dynamic landscape of architectural research demands a nuanced approach to navigate its intricate dimensions. The primary challenge lies in defining the boundaries of action, as architecture

inherently interacts with diverse disciplines. Design-driven research emerges as a convincing solution. In this paradigm, design assumes a dual role of both the objective and the process, dismantling the problem of rigid boundaries. Indeed, this approach transcends disciplinary confines, fostering an environment where the interplay of drawing, writing, and comparative analysis unveils the intricacies of architecture, maintaining the focus on design.
That underlines the importance of cultivating a dynamic and adaptive mindset in pursuing meaningful knowledge within the ever-evolving realm of architecture. By embracing design-driven research, practitioners and scholars alike can navigate the complex landscape, fostering innovation and pushing the boundaries of architectural understanding.



Comparison, imitation, abstraction (re-elaboration by the author from drawing of: Pantheon, Rome, AD 609; Antonio Palladio, La Rotonda, Vicenza, 1567-1605; Étienne-Louis Boullée, Projet de cénotaphe à Newton, vue en coupe, 1784).

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Research and Design: An Encounter Halfway
Riccardo Maria Balzarotti

One of the characteristic aspects of research in the field of architecture is the complex relationship with the object of the discipline itself, which entails, at least seemingly, a fracture between those who theorize and those who practice. The interrelationships between the world of theoretical speculation and the vast field of professional practice seem suspended in two spheres that rarely penetrate each other, remaining two distant sets. However, neither of the two parties should truly consider itself independent of the other: "As a field of action, and a perspective for research, design offers itself as a way for experimentation and exploration into, by, and for architecture".[1] This aspect is also addressed very clearly by Jeremy Till, who, dealing with the theme of research in architecture and starting from three myths to overcome, tackles the delicate relationship between theoretical and design practice.[2] One of the three myths is that "building a building is research". This possible interpretation that sees the built environment as the repository of architectural knowledge does not fulfill the requirements of representing a "systematic inquiry whose goal is communicable knowledge".[3] In this sense, even if built architecture is the basis of architectural analysis, it is evident that not everything built has value in research. It is not just a matter of good or bad buildings; the correspondence of a building to aesthetic or functional standards, or its widespread success in awards and publications, is not sufficient condition to consider it the result of good research. Starting from this assumption, however, one cannot overlook the fact that the built

1. Johan De Walsche and Susanne Komossa, eds., *Prototype and Paradigms* (TU Delft OPEN, 2018), 15.

2. Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007.
3. Archer in Ibid, 2.

or at least designed object, essentially the confrontation with practice, is essential for advancing architectural research and preventing the discipline from living in a situation of isolationism and marginality, as the research is "crucial in order to avoid that architecture becomes a matter of intuition […]".[4] A key concept is that of mutualism between the two spheres, which, in a system of dynamic exchange of information, works only 'if academia and practice collaborate in order that the loop is continually fed with both data and analysis.'[5]

Design for the Research

In the idea of academia and practice as repositories of shared knowledge in architecture, it is important to note how design itself can be the means of communicating architectural theories[6] beyond the sole scope of building a building. In the *Four Books of Architecture*, Adrea Palladio mixed his projects with a series of plans, details, and sections of ancient and past buildings, avoiding a chronological order and re-drawing all of his buildings to be displayed as references to corroborate his theories. The books were published in 1570 and, since then, have become the basis for a constant investigation in architecture, leading to a consistent – and seminal – corpus of architecture essays that investigated the discipline through the Palladian architectures.[7]

4. Pier Vittorio Aureli, "Learning from Architecture," in *Prototype and Paradigms*, ed. Johan De Walsche and Susanne Komossa (TU Delft OPEN, 2018), 25.
5. Ibid., 9.

6. Alessandro Rocca, "Research vs. Design. A Favorable Conflict," in *Comparison: CA2RE | CA2RE+ Conference for Artistic and Architectural Research, Book of Proceedings*, 47.
7. A complete reference list of the most prominent research works about Palladio that goes from Durand to Wittkower and from Rowe to Eisenman would require a specific dissertation. As a reference, see the issue Palladio. Instructions for Use, *Fuoco Amico* n. 5, October 2017. MMXII Press.

Robert Venturi's book *Complexity and Contradiction in Architecture* is another example of an architecture essay whose relationship with practice is fundamental. The opening and closing of the text are the two poles where the designer-researcher manifests, enclosing in the central part the speculative construct of the researcher-professional. In this sense, the preface is an explicit declaration: "This book is both an attempt at architectural criticism and an apologia, an explanation, indirectly, of my work. Because I am a practicing architect, my ideas on architecture are inevitably a by-product of the criticism which accompanies working […]",[8] while the final section is a compendium of the author's projects, examined and tested through the lens of theoretical assumptions presented in the central part of the book.

8. Robert Venturi, *Complexity and Contradiction in Architecture* (The Museum of Modern Art, 1977), 15.

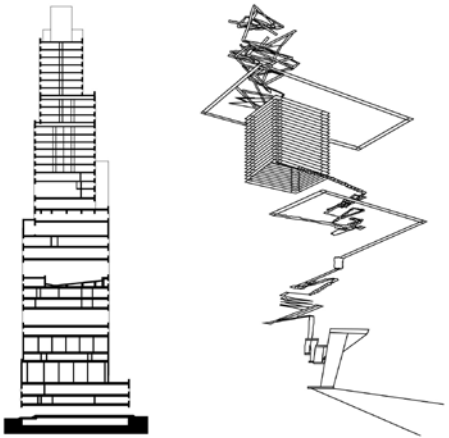


Figure 1 – Research for. Downtown Athletic Club section (*Delirious New York*, 1978) – Hyperbuilding, OMA (1996). (Graphic re-elaboration by the author).

Delirious New York by Rem Koolhaas – which reports a selection of ideal and parodistic architectures designed by the founding members of OMA in the last section – represents an exquisite reflection on architecture that laid the groundwork for the Office for Metropolitan Architecture design production, whose "consistently explored the psychological associations of urban architecture by post-surrealist juxtaposition and ironically reformulated modernist visions".[9] The book production later represented for OMA a constant peculiarity in the design process, which was meant to be a communication device and a validation strategy in the practice activity.[10]
These examples of research through the author's own design, which led to the formulation of consistent and successful theories in architecture, are mentioned to underline the strong relationship between research, writing, and the constant contribution from the design activity, which can be authorial or from external sources. Considering design as a potential form of research and a source of inputs is a crucial aspect of research in architecture, as in the above-mentioned idea of the 'loop' in Till, where the practice has "the raw data on which architectural knowledge is founded; academia can release this potential through research".[11]

Design and Research through Drawing

The basic research tool in architecture is not only textual. The primary medium for research is the writing activity; in the specific case of the research in design, whose primary medium is the drawing, finding a balance between the two is

9. Anthony Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (MIT Press, 1992), xiii.
10. Alessandro Rocca, *Totem and Taboo in Architectural Imagination* (LetteraVentidue Edizioni, 2022), 56 – 57.

11. Till, "Three Myths and One Model," 8.

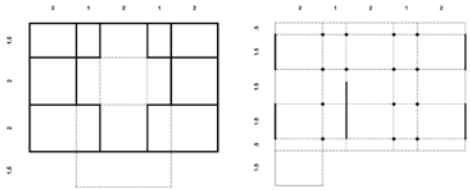
essential, as "we can find the research's true architectural essence and quality in the tension between the two different media: the text and the drawing".[12] The work of collecting and comparing iconographic material is, with different purposes and methods, a constitutive part of the structure of the dissertation in architecture, without which the theoretical effort would perhaps be even in vain. This dependence on the image, understood as a form of creation, visualization, or analysis of ideas on which the theoretical construct depends, is a constant element underlining the interdependence relationship that exists in architectural research between theory and theorized object.
As the assumption that 'building a building is research' appears to be a myth, architectural drawings must underline their scope and purpose to be addressed as a part of research. Simon Unwin identifies three typologies of drawing as an architectural medium, proposing three categories: drawing as a medium for communication and presentation, as a medium for generating and developing design, and as an analytical tool.[13] While the first two categories are more related to the practice activity – the first to discuss and interact with clients and builders, the second to perform the design activity – the element of interest for the research domain is drawing as an instrument for acquiring knowledge and understanding. In this peculiar meaning, analyzing the work of Paul Frankl, Unwin identifies a key element in the balance between research and practice: "[the drawing] occupies a liminal situation between the mind of the architect and the mind of the analyst, except that each is working in the

12. Alessandro Rocca, "Research vs. Design. A Favorable Conflict," 49 – 50.

13. Simon Unwin, "Analysing Architecture Through Drawing." *Building Research & Information* 35, no. 1 (2007): 101–110.

opposite direction".[14] The architectural drawing is indeed identified as the medium point of a flux that shares the same path in two opposite directions: the analyst starts from the spatial form to identify, through drawings, its "spiritual import, its content, its meaning",[15] while the designer uses drawings to convert intelligible matter in spatial form.
In this interpretation of the drawing emerges a compelling parallel with the epistemology of architecture in Carlos Martí Arís.[16] Addressing Popper's 'three worlds' theory, Martí Arís indicates the epistemological relations between the built architecture (world 1) and the analytical theories (world 3), posing them at the end of one segment, in which the halfway is the architect's speculative activity (world 2). Moving from one end

14. Ibid., 105.
15. Frankl in Ibid., 105.
16. Carlos Martí Arís, *The Variations of Identity: Type in Architecture* (Editions Cosa Mentale, 2021), 33-34.



Research in. Analytical diagram of Villa Foscari and Villa Stein by Colin Rowe (*The Mathematics of the Ideal Villa and Other Essays*, 1976). (Graphic re-elaboration by the author).

to the other of the segment, it is mandatory to pass through the world 2. The path from the built environment to the theory is the research activity. The opposite way is the design activity.
Both authors refer to the work of Colin Rowe, comparing Andrea Palladio's Villa Foscari with that of Le Corbusier's Villa Stein.[17] The former to explain the analytical value of drawings in research, the latter to support his dissertation about the type in architecture. In *The Mathematics of the Ideal Villa*, Rowe's diagrams comparing the geometric framework of the two villas are a clear example of using drawings in an analytical way. At the same time, Unwin notes that those drawings also have communicative purposes; beyond the use of drawing to understand the most profound meanings of the two projects, the hypothetical absence of them would make it "impossible to understand the burden of Rowe's preliminary comparative analysis of the geometric frameworks of the villas Foscari and Stein."[18]
On the opposite, drawings with solid creative purposes, more typical of the design discipline, can also have analytical peculiarities and research value; one clear reference is the plan that OMA drew for the Dutch Embassy project in Berlin.[19] This representation uses the potential of abstraction of analytical drawing to create – and, in this case, communicate – a design process. The architectural drawing par excellence, the plan – which is in itself an abstraction but simultaneously something very connected to reality – is here extremized in an unrolled continuous drawing of all the main circulation system cutting through the different floors. Far

17. Colin Rowe, *The Mathematics of the Ideal Villa and Other Essays* (MA: MIT Press, 1976).

18. Unwin, "Analysing Architecture," 106.
19. François Chaslin, The Dutch Embassy in Berlin by OMA / Rem Koolhaas (nai010 Publishers, 2004).

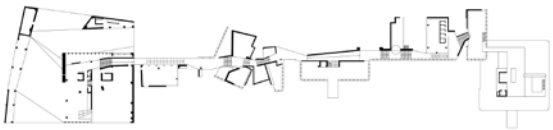
from being an exact planar representation but still coherent in geometrical proportions, it visually communicates a design strategy: the idea to make the distribution space a continuous promenade.
Having two examples of the opposite flows that analysis and design follow, it is more clear how drawings represent a threshold at the midpoint between research and practice; the proposed scheme, as a linear segment, is, however, a simplification of a process that also from an epistemological point of view, is composed by non-linear actions that are all "[…] roaming and interacting simultaneously on the same arena, the arena that is drawing"[20] leading to a conception closer to the idea of 'loop' mentioned by Jeremy Till, shifting to a circular paradigm of the design and research interaction.

20. Unwin, "Analysing Architecture," 109.

Different Ways of Comparison

The same approach of a two-way process to tackle the research and design relationship could also be suitable with a specific method for research in architecture, namely the comparison. The comparison between built objects through analytical drawings – in this bipolar model – can both stimulate the process of design and be the foundation of epistemological processes. It is the case, as a reference, of the above-mentioned Colin Rowe's research, where the comparison between two buildings, schematized in diagrams and drawings, can unleash a deep understanding of architectural meanings.
The comparison can also happen among a larger pattern of buildings. It is used by Martí Arís for his research on architectural type.[21] In this case, the identification of the type is approached by juxtaposing

21. Carlos Martí Arís, *The Variations of Identity: Type in Architecture.*



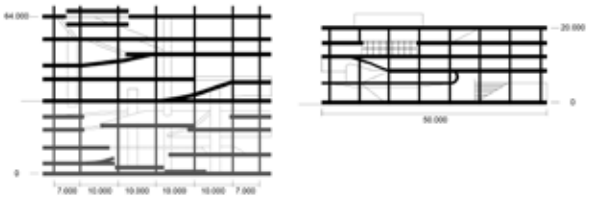
Research through. Unrolled plan of the Netherlands Embassy, OMA (2003). (Graphic re-elaboration by the author).

mostly planimetric drawings of projects that share common characteristics in their formal structure, regardless of the conceiving period or the most evident stylistic externalities. Indeed, it is precisely through the comparison between these stylistic differences that the permanency becomes even more evident as the essential form of the project, while the variation represents the affirmation of the singular freedom that the project manifests through its self-defining principles that lie in the type. The very idea of type and variation is something that emerges exclusively from the comparison of objects that are alike.
A relevant work of research by comparison, led by one of the most prominent exponents among contemporary practitioners, is the book *Copy Paste: The Badass Architectural Copy Guide*,[22] whose aim is to show

22. Winy Maas, Felix Madrazo Salazar, Diana Ibáñez López, and Adrien Ravon, *Copy Paste:*

through text and visually immediate yet profound drawings, how the design processes relate to the theme of copying and referencing, two other key concepts in the idea of architecture as constantly balancing between the will to create and the contingency of replicating. The analysis wants to expose, by exploring the geometric similarities between iconic buildings, the design approach that led to the generation of analog forms.
By comparing, among others, the OMA design for the Jussieu Library (unbuilt, 1992) and the VPRO building by MVRDV (built, 1994), which was accused by Koolhaas to be 'a fragment of a building OMA conceived', the focus falls on the absence of a critical view that goes beyond the formal similarities: "What I think is shocking about the VPRO building, […] is that no writer or critic has gone to the trouble to point out not so

The Badass Architectural Copy Guide (nai010 Publishers, 2017).



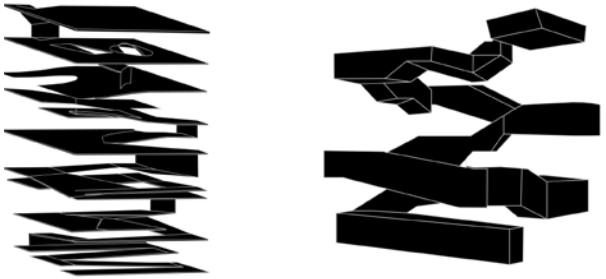
Analytical comparison. Schematic sections of the Jussieu Library by OMA (1992) and VPRO building by MVRDV (1994) (*Copy Paste: The Badass Architectural Copy Guide*, 2017). (Graphic re-elaboration by the author).

much the similarities […] but the differences".[23]
Because 'copying' in architectural design is not a linear process that deliberately leads from one object to its replica. In that sense, according to the author, it should not be a taboo either. Copy, reference, precedents, quotation, imitation, or even self-imitation are, in the design process, all components of a tacit[24] work of comparison that happens in the mind of the designer, where the stratification of past and present architectural objects, external or self-produced, contributes to the creative process that is, at the end of the path, delivered in a constructed – or designed – building: "As practicing architects, we do well to get acquainted with the enormous repository of knowledge and experience contained in the history of architecture. […] Architecture is, however, not a linear process that leads more or less logically and directly from architectural history to new buildings".[25]
Thus, the process that goes the opposite way of the analytical research by comparison, the design process, appears to be more clumsy, less structured, and more subjective. Operations like San Rocco *Book of Copies*[26] – whose statement is 'a database comprised of images that may be copied in order to produce architecture' – or the *A List of Analogies*[27] webpage by Valter Scelsi try to give a form to the design action, cataloging a collection of visually similar

23. Ibid., 58.
24. Jeremy Till, "Three Myths and One Model," 3. Till refers, using this term, to the research performed by practitioners.

25. Peter Zumthor, *Thinking Architecture* (Birkhauser, 1998), 22.
26. San Rocco Magazine, "Book of Copies," accessed February 29, 2024, https://www.sanrocco.info/bookofcopies.
27. Opus analogico, "A list of Analogies," accessed February 29, 2024, https://opusanalogico.tumblr.com/.

references that are very effective in communicating how the creativity works, but at the same time confirm how erratic it is. These challenges can be addressed by research in architecture. Where design is a tacit process, often subjective and not always sharable, research can dissect, study, and reassemble architecture in a theoretical framework that objectivize and transmit knowledge that can benefit the design activity. This idea appears explicitly in Martí Arís, whose research on type exposes a series of overlaps and connections that unveil the complexity of the discipline in its relationships between the study and the studied object. Nevertheless, this complexity not only does not pose an obstacle to a conscious use of the tools that research identifies but is rather the very proof that 'theory cannot be separated from the reality that constitutes its object,' emphasizing how the idea of type and variations in architecture is not solely an



Self-comparison. Floors scheme for the Jussie Library. OMA (1992). Graphicization of a study model for the Netherlands Embassy in Berlin. OMA (2003). (Graphic re-elaboration by the author).

epistemological procedure but also an operational tool at the very basis of the act of designing.[28]

Conclusion

Through the analysis of architectural design speculations, the use they do of the drawing medium, and its comparative method, it is possible to identify a recurring dialectic pattern between research and design, composed of two main areas and a third one in the middle of the bond that connects the first two. Where Martí Arís identifies the two main areas in the built environment and the analytical theories, the link in the middle, whose form can be variable depending on the direction of movement between one and the other pole, can be identified in different objects: the writing activity performed by reflective practitioners[29] or theorists, the analytical or generative drawings, and the comparative method as an epistemological or creative procedure. It is possible to read these same three partitions in a similar/parallel way to the definitions that Jeremy Till identifies for the research activity in architecture: "Architectural research may be seen to have two main contexts for its production, the academy, and practice. Research 'in' is traditionally the domain of the academy, and research 'through' is that of practice, with research 'for' somewhere in the middle".[30] The comprehension that these forces – the research and the design – travel in opposite but convergent directions should pose the basis for the design-driven approach to research in architecture, where a common focal point exists and should be constantly investigated and verified.

28. Carlos Martí Arís, *The Variations of Identity: Type in Architecture*, 26 – 27.
29. Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (Taylor & Francis, 2017).
30 Till, "Three Myths and One Model," 3.

Three Tools and One Discipline
Federico Casati

I. On the Harsh Coexistence between Theory and Practice in Architecture

Architecture has always seemed to suffer more, if compared to other disciplines, from the categorical and almost insurmountable distinction between theory and practice. The result is a fragmentation of the discipline into different currents that would like to see one or the other prevail as the more influential in the definition of Architecture. Perhaps one of the reasons for this categorical separation derives from the fact that the two activities use very different and incompatible tools. The theory uses the written word to produce a result; the practice relies on the construction and relational dynamics of the construction site. Other disciplines, which use a single tool for literature, certainly suffer less from this separation between theory and practice.

"When I began my career, the categorical imperative of every young writer was to represent its own time. […] Soon I became aware that between the facts of life that should have been my raw materials, and the quick light touch I wanted for my writing, there was a gulf that cost me increasing effort to cross. Maybe I was only then becoming aware of the weight, the inertia, the opacity of the world – qualities that stick to writing from the start, unless one finds some way of evading them" (Calvino 1988, 3-4). Italo Calvino reflects on his initial difficulty in freeing himself from the world and from the heaviness of reality (considered just as mere raw data) to achieve a coherent result with respect to his personal vision of what writing should be. In his case, research and practice coincide. He cannot do without the only tool at his disposal, the written word, which allows him to erase the gap between theory and practice and directly experiment with his own theoretical vision through writing. However, if we

share the idea that architecture is always devoted to ‘doing’, to a practical impact (even if very often only potential), then we might say that to architecture, this evasion from the world is denied since it is inevitably connected to it. And yet, affirming that architecture could exist only as a tangible object would be a mistake.

This difficulty of communication between practice and research is stressed by Jeremy Till when he affirms that “A ‘good’ building is not necessarily good research, and good research may lead to ‘bad’ buildings” (Till 2007), sub-dividing the discipline into two opposite poles that might be unrelated. Now, we want to try to consider a third tool as a point of intersection between these two spheres of the same discipline: drawing. Drawing is the most effective tool used in the design process and is capable of communicating directly with the practical and theoretical spheres. Referring to Jeremy Till’s sentence, we could say that a good project is the result of good research and that a ‘good’ building is the result of a good project. Starting from these premises, architecture is intended as a complex yet unitary product or wanting to remain within the scope of the tools it uses and, as a result, achieved through the use of words, drawings, and construction.

Jeremy Till, reflecting years later on his own essay in 2019, also seems to identify a possible point of intersection in the gray area of the design process: “However, we were left with a gap in research; a hole right in the center of our discipline, namely research through the very act of design. In 2007, this was still a contested area” (Till 2019).

In his text, Jeremy Till seems to suggest that the particularity of architectural practice lies precisely in the design process, understood as a tool to integrate and make practice and theory compatible and so to form a complex instrument able

to tackle the complexity of the world: "It is in the light of this new maturity that design research can now be more confident in being developed on its own terms. It is necessary for design research to accord with the basic tenets of research in terms of rigor, originality, significance and communicability. But it should not be shoehorned into the methods of other disciplines. Indeed, it may be argued that design research has very particular strengths that are uniquely positioned to address the complex, wicked, issues that confront the world, and the other disciplines should be looking to and learning from these strengths" (Till 2019). Architecture is, therefore, a complex discipline that does not exist in the separation between research and practice but rather finds its uniqueness in the union of the two by design processes. In this short text, we do not want to fall into the mistake of establishing a hierarchy but rather define theory, design, and practice as elements that contribute to the definition of architecture. The project without a theoretical foundation and pragmatic aspiration would be just a set of drawings.

II. **Adding and Removing or: From Opaque Reality to Theoretical Transparency and Vice Versa**

We have tried to propose a vision of architecture as a complex yet unitary product of texts, drawings, and construction in which the project, which uses drawing as its main tool, occupies an intermediate gray area that can easily overlap with research or practical activity. We must, therefore, understand drawing (even more precisely drawing in architecture) as an operation of abstraction that potentially hosts both the written and the built work. In this way, the drawing could be defined as a vector with two polarities where the intellectual operation of the architect defines its

prevailing “direction” or “sign”, so to speak.
This feature of drawing, orienting itself towards practice or research, becomes quite clear if we take into consideration two books, written at very different times: *Towards a New Architecture* by Le Corbusier and the second of *The Four Books of Architecture* by Andrea Palladio.
In these two books, drawing becomes a “bridge” to unite the natural and the abstract, as Colin Rowe observes: “Geometrically, both architects may be said to have approached something of the Platonic archetype of the villa, which the Virgilian dream could be held to represent. The idealization of the cube house must lend itself very readily to the purposes of Virgilian dreaming. Here, the conflict between the contingent and the absolute, the natural and the abstract, is set up; the gap between the ideal world and the too-human exigency of realization receives its most pathetic presentation. The bridging must be as competent and compelling as a well-executed fugue, charged as in these cases with almost religious seriousness, or sophisticated, witty allusion; it is an intellectual feat which reconciles the mind to the fundamental discrepancy of the program” (Rowe 1947, 104).
Both authors use drawing as a tool to complement that writing to make their theoretical discourse more effective; both architects feel the need to unite theory and practice in a single body of work. Both architects mainly use their own projects, but their intentions are completely different: while Palladio presents drawings of completed projects (eighteen of the twenty-two presented), Le Corbusier almost exclusively includes drawings of unrealized projects in his book. If, on the one hand, Palladio aimed to define a theoretical space within which to fit his buildings, Le Corbusier wanted to prepare the field for his future activity.

The drawings presented by the two authors are indeed diametrically opposed: Palladio tries to summarize his works through the plan, leaving out the complexities of the created artifact, while Le Corbusier uses axonometric views, plans, and perspectives to legitimize his unrealized works as "real". In the first case, Palladio performs an operation of subtraction with respect to the real complexity, while in the second case, Le Corbusier adds details to transition his ideas from the abstract sphere to the real one (addition). By recalling the initial text Calvino quoted before, one could say that the drawing can turn in two different directions: towards the opacity of reality or towards theoretical transparency. Exemplary is the comment that Le Corbusier inserts as a caption to the image of one of his few realized projects, the Ozenfant House, in the chapter about Regulatory grids in relation to the construction of an ideal villa:

"I apologize for citing my examples here, however, despite my research, I have not yet had the pleasure of meeting contemporary architects who have dealt with this problem. In this regard, I have caused nothing but amazement or encountered opposition and skepticism" (Le Corbusier 1947, 62).
Le Corbusier's apologizing is quite unexpected, especially in such a book. He does so for having included a completed project, almost as if its realization constituted a paradox in the logical system of the treaty, almost as if the "opacity" of the construction was obstructing the light, transparent progress of his writing manifesto. By doing so, he demonstrates that he has intentionally given his selection of drawings a very specific direction, aimed toward a future realization that has not already occurred.

III. **Not a Funny Thing**

Once the drawing has been understood as

a vector capable of defining the intentional direction of the author toward research or construction, further clarification is needed. Drawing in architecture is never fun. This is not to say that there is no intrinsic pleasure in drawing for the architect, but that architectural drawing is never a game in itself; it can never escape from its duty of defining a direction toward the realization or the definition of a theoretical point of view, and it is precisely this limitation that clearly defines it and separates it from the pure formal gesture. Returning to the words of Colin Rowe, drawing in architecture "must be as competent and compelling as a well-executed fugue", requires a certain degree of preparation, and is the main tool at disposal for an architect to move from one sphere of architecture to another in his own production, for its well-executed fugue from the real to the abstract and vice versa.

The drawing, therefore, imposes a certain dynamism that cannot linger in pure contemplation. Even when the drawing is understood as an analytical tool, it is not capable of abstaining from a certain judgment, from a certain intention:
"For some years I have used a notebook to analyze architecture through drawing. I find this exercise useful as an architect, and it helps to focus my teaching. My simple premise is that one's capacity for 'doing' architecture can be developed by studying the work of others. In this way, one can discover some of the powers of architecture, and, by looking at how other architects have used them, see how they might be managed in one's own design." (Unwin 1997, 9).
Simon Unwin seems to be aware of the ambivalence that drawing must have to be admitted into architectural production. For him, drawing is a tool with multiple directions that enhances one's design method or that serves to crystallize an

idea to define a precise teaching method. This architectural drawing differs from simple drawing because it must always consider a certain potential complexity, whether theoretical or pragmatic and must define the most effective way of codifying that complexity from time to time. Understood in this way, drawing always has a scientific character of precision, accuracy, and descriptive capacity, which distances it (even if not totally) from the more figurative aims of other types of drawing without, however, bringing it into the field of scientific drawings (anatomy, botany, etc.). In this sense, therefore, for architects, drawing can never be just for fun because it is "forced" to always take multiple aspects into consideration.
Even when in summer, in the precious free time that this season grants, I try to play with the drawing; I always arrive at a plausible result that takes into consideration its possible future realization (and it is precisely one of the most fun parts) and always looks to a certain theoretical panorama, trying to establish a link with it.

IV. **Bad Drawings**
If we try to follow the reasoning done so far, it is quite clear that all research in architecture should rely on the tool of drawing, not only to obtain a more convincing result but precisely because we have tried to define architecture as a unitary system, where drawing ensures direct communication between practice and architecture. In a very similar way, Jeremy Till invited practice to a profitable exchange with research and vice versa: "The key to overcoming this problem lies in communication. […] There is some urgency in this, because if architecture fiddles around at the margins of the research debate, it will be confined to the margins of the development of knowledge." (Till 2007).
We tried to demonstrate how

communication between different sectors of the same discipline can be ensured using drawings. Drawing is, therefore, capable in architecture of approaching, if not overlapping, with the act of writing precisely because it categorically renounces pure figurative expressiveness, because it renounces the pure artistic gesture, moving toward a more abstract realm, where theoretical research operates. If we look at the history of architecture and at the drawings it has left us, many of them are “bad” drawings, sketches, and diagrams.
This is because their value is attributed to judging their ability to “translate” certain projects or theoretical visions and not their formal results. Architectural drawing always refers to something else, and its ability to effectively refer to something else defines its relevance in architecture. We have used terms like translate and communicate; all terms are usually addressed to language, which is another coding tool, a code shared by a large group of people. Drawing works in architecture in a very similar way, as a code shared by many people, to immediately translate concepts or the complexity of a building. Thus, drawing is not a simple formal tool but a code that recalls other complexities. Archizoom’s No-Stop City, designed with a typewriter, tries to stress (more or less consciously) this fine line of drawing in architecture as code or codification, making it coincide with writing and completely removing it from a figurative discourse.
“In those years, there was a spread of the assembly line throughout society; therefore, the alienation of the factory concerned the entire society […] This is the premise, well represented by the first drawings, such as those typed where an idea of total ‘inexpressiveness’ was pursued” (Branzi 2010).
Typed characters are used to draw a possible plan of the No-Stop City. The

We are architecture, (drawing by the author).

theoretical idea is translated directly into drawings by using the same medium. Unsurprisingly, those first drawings of the No-Stop City are among the most famous drawings in the contemporary history of architecture: they share a certain degree of freedom of interpretation with the language and have fueled many research and practice projects equally.
If it is true that the problem of the profession is to remain on the margins of the theoretical debate, as Jeremy Till states, the opposite is equally true. If architectural research does not use drawing as its main tool, it will deny a possible channel of communication with practice, remaining a purely academic debate that is difficult to transfer to a more operational sphere.

V. **About Comparison**
The last point is perhaps the most predictable when talking about drawing, yet it is useful to reflect on the ability of

drawing to make different projects and, as we will see, different architectural theories comparable. As already mentioned, together with the project, drawing occupies that gray area between practice and theory, that common ground shared by both activities, and we have tried to demonstrate that it is also the obligatory transition point to proceed from one to the other. Another point that must be taken into consideration now, since it is very specific to architectural drawing, is the scale. Architectural drawing that uses this geometric convention immediately gain a certain scientific value and uses the metric scale to "tame" the dimensions of buildings, giving the drawing an immediate comparison capacity that is impossible to achieve in a written text and is complicated to obtain with other means (e.g., the photography. Another discussion could be set for maquettes which are indeed very comparable but are still a result of the process of "translation" of drawings). Furthermore, even when two exactly comparable photographs are obtained, one always has an image of the building as it was realized, a partial image hindered by the opacity of the world. The photograph portrays the building as a point of arrival, usually heavily compromised by many factors. The drawing recovers the author's initial will, and allows us to appreciate its logical clarity, connecting the building to the more transparent world of abstraction.
It is no coincidence that Colin Rowe when comparing Palladio's Villa Malcontenta and Le Corbusier's Villa et Garches, uses only a series of drawings (two structural diagrams, two plans of the main floor, two elevations, and a diagram) with the same scale. By using those drawings, he makes his critical reading clear and unequivocal, managing to put into dialogue not only two buildings apparently distant stylistically and chronologically but also

the two authors who, at first superficial glance, might seem antagonistic. When he uses drawing as a starting point, be it a plan or a scheme, Colin Rowe can take unassailable positions, making the theoretical vision of Palladio and Le Corbusier coincide in many moments: “Thus, either because, or in spite of theory, both architects share a common standard, a mathematical one, defined by Wren as ‘natural beauty’; and within the limitations of a particular program, it is not surprising that the blocks should be of corresponding volume—8: 5½: 5. Corbusier has carefully indicated his relationships by regulating lines, dimensions and figures, and overall he places the ratio of the golden section, A: B = B: (A+B)”.
Reversely, whenever he refers directly to the two realized works, he seems to register the inevitable gap between theory and practice and is forced to approximate: “Thus, he (Le Corbusier) indicates the ideal with which he would wish his façade to correspond, although in actual fact, the figures 3: 5 = 5: 8 thus represented are only approximate. Palladio also provides his plan with cryptically explanatory dimensions, and thus, the rooms comprising the suites of three can be read as a progression from a 3: 4 to 2: 3 relationship. They are numbered 12: 16, 16: 16, and 16: 24. The façade is divided vertically into four main units, the two central ones being really a single division by their common expression as a portico. The horizontal divisions are complicated by the introduction of the order, which presupposes, alongside the “natural” proportions, a series of purely “customary” relationships.
In fact, these horizontal divisions are uneven although, as the figures show, they roughly approximate to a division into fifths-a fifth part to the attic and approximately three-fifths of the remaining wall surface to order and

entablature" (Rowe 1947, 102-103).

VI. **An Excursion of its Own**

In conclusion, it is perhaps useful to reiterate that we did not want to establish a hierarchy between practice, research, and project, but rather a possible way to "compact" architecture understood as a heterogeneous activity, where each field nourishes and enriches the other. With this brief text, we have tried to reflect on the potential of drawing, which is understood as a useful (and extremely peculiar) tool in carrying out any type of activity within the field of architecture. The text was born from a personal need to try to understand if there is some activity common to the practitioner and the researcher, given that who is writing has recently abandoned his professional activity to undertake a research path. One of the concerns that the text tries to answer is that of finding one's own personal method, and perhaps with this paper, some interesting hints and ideas have crystallized. From the analysis of various authors, different ways of using drawing have emerged: as the backbone of a discourse or as a medium, used to achieve results otherwise inaccessible with the written text alone. In the first case, the drawing acts as proof (almost scientific) supporting the theoretical discussion, while in the second case, it constitutes a body in itself within the research. Particularly illuminating, continuing with the parallelism between language and drawing, is the text in the preface of Beatriz Colomina's book *Privacy and Publicity*: "I was writing in Spanish and then translating into English. When, soon after, I tried my hand at English, I was shocked at the extent to which not only the way I was writing had changed but even what I was saying. It was as if with the language, I was also leaving behind a whole way of looking at things, of writing them. Even when we

think we know what we want to write, the moment we start writing, language takes us on an excursion of its own" (1996). It is probably precisely that capacity of drawing of taking you "on an excursion of its own," crossing lands between practice and research, the aspect that interests me the most. For some reasons, also analyzed here above, architectural drawings constitute a very specific kind of language, and by using it, we are even capable of changing the way we look at things and approach certain topics.

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Inspiration vs. Plagiarism: Nurturing Originality in Research

Xinyan Chen

“Architecture is the art and technique of designing and building, as distinguished from the skills associated with construction” (Gowans 2018).
Architectural design is a discipline that focuses on covering and meeting the needs and demands to create living spaces, using certain tools and, especially, creativity. Creativity, an area of pure intuition, must be based on a knowledge of past solutions applied to related problems, and creation is a process of adapting forms derived either from past needs or from past aesthetic ideologies to the needs of the present (Colquhoun1969). Therefore, designing with the help of precedents’ knowledge and constituting new knowledge cannot be defined as a mere copy in architecture. Research that considers precedent knowledge and its imitation should also consider the transforming processes of the knowledge and its media rather than merely focusing on precedent or knowledge (Özgür 2018).

The paper aims to excavate how to nurture originality by discussing five distinct stages: design-based research, research by reading, research by drawing, research by writing, and research by comparison. Each stage is a crucial component and step in the research process, especially for architectural research, which communicates architectural ideas beyond the range of just a project.
During these phases, researchers generate their unique and innovative thinking, contributing to the architecture field. The first phase, “design-based research,” compares the method of research by design and design-driven research, underlining the importance of shaping originality from the design-based method. In contrast, the subsequent four phases introduce four techniques and methods as tools in research to obtain vital knowledge and properly shape independent and creative thinking. The exploration of these

five stages intends to find the balance between drawing inspiration from existing works and avoiding the pitfalls of plagiarism.

Five Stages of the Research Process: Design-Based Research

Research in the field of architecture needs to interact and integrate with design in relation to the nature of architecture, which involves not only technique but also art. Architectural design is the art of drawing and crafting structures with acuteness and functionality in mind: “Architectural design, built and unbuilt, is able to communicate architectural ideas beyond the scope of the project itself” (De Walsche 2016). “Architectural research is an original investigation undertaken in order to generate knowledge, insights, and understanding based on competencies, methods, and tools that are proper to the discipline of architecture” (EAAE Charter 2022). The interactions of architectural design and architectural research present different forms regarding the varying targets and methods, such as research by design and design-driven research, which are very common in the research process. “Research by design” and “Design-driven research” are related concepts but have distinct emphases and approaches. The former, research by design, it is to consider design as a specific form of research or a valuable tool for research relating to spatial investigation. In contrast, the latter, design-driven research, is a method that emphasizes the combination between design and theory in the research process. Different from merely being a tool at a particular step, the design in the stage of design-driven research participates in nearly whole periods of research to understand the need, generate the methodology, set the design process, and examine the final research result.

Despite some distinctions between the

two stages, research by design and design-driven research share a common genesis and trajectory, commencing with the design phase of the research process. This foundational stage, intrinsic to architecture, is instrumental in upholding the paramount significance of aesthetics and originality, thereby endowing architects with an artist's identity rather than merely that of researchers or inventors. The design stage for research emerges as a pivotal period, functioning not only as a preparatory step but as a crucible for nurturing and fostering originality. Within this phase, researchers scrutinize the research topic and its status, delving into an extensive array of references to absorb pertinent knowledge. Subsequently, a dynamic process for researchers to the creative imagination, starting brainstorming sessions to delineate the methodologies and approaches that will guide their exploration. This iterative process, infused with inventive thinking, becomes the crucible in which the architect's originality is forged, with the evaluation of innovative approaches and the ingenuity of design thinking.

When designing a specific stage in research (in the research by design stage) or designing the overall ideas and overall situation in research (in the design-driven research stage), we can learn and draw on excellent ideas and ideas from other research. The method is the inspiration of our design, but we cannot wholly copy and follow the entire process with the same methodologies as others. Otherwise, we will lose innovation and become plagiarism.

Therefore, in architectural research, the design stage assumes a crucial role in distinguishing between research by design and design-driven research. Simultaneously, it serves as the incubator for nurturing individual innovative thinking, essential for shaping originality.

Fig. 1. Drawing for the stage of design-based research.

This stage critically discerns whether the design process in research is genuinely inspired by others or inadvertently slipping into the realm of plagiarism.

The Stage of Research by Reading

"Architecture is the discipline devoted to the creation, transformation and interpretation of the built environment and the articulation of space at various scales" (EAAE Charter 2022). It goes beyond mere design, encompassing the generation, documentation, and integration of theoretical content. Insights are gleaned by researchers from textual narratives and visual representations through the process of reading, enabling them to augment the design process and foster a profound comprehension. As researchers gain mastery over this knowledge, it transforms into a database, forming a cohesive network. This, in turn, empowers researchers to mold and cultivate their independent thinking.

Effective reading techniques play a pivotal role in the research process. Initially, the crucial step involves searching for relevant bibliographies, where having a clear perspective on the desired discoveries acts as a filtering tool for selection. Subsequently, the process of extracting valuable content becomes paramount. When delving into selected books, the challenge lies in reading the whole content of the book intensively or absorbing all knowledge comprehensively within a limited time. However, a strategic approach involves reading the initial 1-2 pages to grasp the research topics, the authors' introductory approaches, and the overall structure and sequence of paragraphs. Furthermore, at the phase when reading the main text, which typically follows a narrative order in books and essays, researchers have the flexibility to opt for specific chapters, enabling them to selectively extract the essential content that aligns with their research objectives, in this reading strategy, researchers can enhance their efficiencies a lot.

Nurturing originality in the “Research by reading” stage is the process of integrating and creating. In order to strengthen the argument, quote the example of reading the essay “On Typology” written by Rafael Moneo: Firstly, as a researcher, when we read the entire complex content, including the text and drawings, we need to filter and extract the pertinent and valuable contents for our research, to build a foundation of knowledge from the chosen books and essays with researchers’ thinking, involving our logic and methods to arrange content. For example, while reading “On Typology”, an excellent reference for the study of architecture typology, it’s essential to excerpt the relevant sentences or paragraphs especially related to the definition of typology, typology in the design process, the difference between type and model,

Fig. 2. Drawing for the stage of research by reading.

etc. After that, a foundation of knowledge from this essay was generated, combined with other pertinent resources such as the essay “On the Typology” by Giulio Carlo Argan, which engaged with diverse perspectives. Diversifying the reading sources is another effective way to nurture originality because, in this way, our thinking is not limited by a single or a few references. With the integration of different materials, with a critical stance, to analyze and compare the content and thinking from them, and in this process, our individual thinking forms. Therefore, in this phase, if our reference material is excessively narrow or if we fail to incorporate our own insights and innovations following the reading, there is a heightened risk, during the later stages of idea generation, of losing originality and inadvertently falling into the scope of plagiarism.

The Stage of Research by Drawing

Imagination consists of the desire for deformation, and the deformation is the image of the desire (Scolari 2012). Architectural imagination is the essence of research by drawing, which is usually expressed through drawings. Drawing draws its value and its quality from the intrinsic potentiality of a critical moment of synthesis and, therefore, of communication and explanation of the ideational proximity; it is also true that this role of intermediary originates from the strength of its belonging to the whole process of architecture construction in prefigurative terms (Florio 2020).
In architectural research, especially in the literature of architecture, drawing is presented as being used in three distinct ways: as a medium for communication (with clients, builders, etc.), as a medium for design (private “play”), and as a medium for analysis (the acquisition of knowledge and understanding) (Unwin 2007). The first way the drawings are used in research is through applicational images, which simplify the content and show the ideal much more straightforwardly to get more accessible communication, such as getting the immediate expression of design concepts, inspiring discussions and feedback, etc. Secondly, drawing plays a significant role in various architectural design processes, offering a range of benefits that contribute to brainstorming and problem-solving, precisely embodied as visualizing design progression, idea generation and conceptualization, improved spatial understanding, problem discovering and solving. The phase uses drawings to strengthen analysis, making the data more visual and readable, mainly for site analysis and contextual studies.
In addition to these three benefits generated from drawing in the research process, drawings can also promote understanding by translating the written descriptions into the drawings. It is a

prevalent method, especially in the stage of creating paintings through scenes depicted in literary works such as drawing creation from *The Classic of Mountains and Seas*, which is one of the oldest mythological literary works in China, and the stage of creating paintings through the description of historical events and characters such as *The Night Watch* from the artist Rembrandt van Rijn. In this way, it is more apparent and more accessible for people to know the concept of design or research from drawings, especially people who are not in the architecture field and are unfamiliar with architecture. Moreover, when we create the drawings in this way, the drawings entirely have originality because they come from an abstract text description; before forming into the drawings, they went through the painter's subjective thinking and creation, integrating their own interpretation and ideas in it.

The nurturing of originality in the "research by drawing" stage encompasses various drawing types, with particular emphasis on two frequently utilized categories. Distinguishing between these types involves understanding their distinct methods of creation and subsequent applications. The first category is concept drawings, which constantly form in the initial phase of conceiving design or research processes. "The sketch, more than any other drawing, is able to speak instantly with a single logic, because through its paths the hand imitates the idea with voluntary omissions" (Scolari 2012). Many architects are fond of drawing simple sketches before beginning the project, such as Coop Himmelb(l)au, not only because it can visualize and materialize their concepts but also because it makes it possible to capture the fleeting inspiration in mind in a very short time. If the thinking is totally created from the painter's mind, the drawings have total originality without doubt. In

other cases, if the drawings form with other references, the proportion of the independent view and the reference content decides the level of their originality, whether they are inspired by others or plagiarized.

The second, more commonplace type crucial in architectural projects is technical drawing. These drawings encompass plans, elevations, facades, details, and more, ensuring the design's feasibility and the structure's safety during construction. Technical drawings play a significant role in realizing the architect's vision. Besides, this graphic representation is the language that allows engineers and architects to communicate ideas that would be very difficult to explain with words (López-Chao 2020). The originality of technical drawings is intricately tied to the design they illustrate, encompassing the chosen materials and construction methods. Consequently, the originality of technical

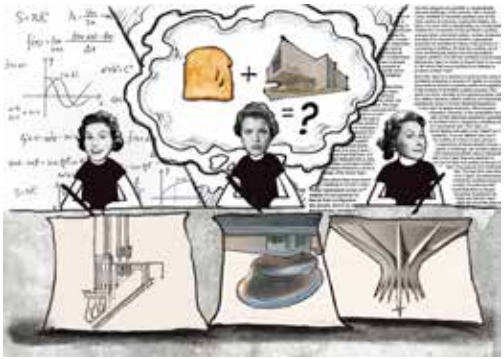

Fig. 3. Drawing for the stage of research by drawing.

drawings is directly linked to the uniqueness of the underlying design.

The Stage of Research by Writing

In the research on the writing process, the storytelling method proves highly effective in captivating readers, articulating findings, and, notably, elucidating intricate ideas. This approach not only fosters reader engagement but also allows researchers to express content and thoughts with enhanced clarity and logical coherence. By integrating storytelling, the research gains a distinct uniqueness and originality, safeguarding it against the risk of plagiarism. This method transforms the research narrative into a compelling and authentic exploration, enriching the overall quality of both the content and its outcomes.

The writing and storytelling methods share some similarities in terms of logic, sequence, and structure. The initial phase of this parallel involves setting the theme to introduce the main idea of the article. This marks the juncture where the researcher grapples with the challenge of organizing a central question within the intricacies of a complex subject matter. Subsequently, as the narrative unfolds, there is a need to establish a hierarchical structure for the research, which focuses on arranging chapters and dividing the different content into different steps or sections, forming a cohesive and comprehensive exploration of the research. To place chapters in this phase, researchers can first list all objects, steps, and keywords, then pick out the required parts and integrate them with a certain logic. After setting the chapters, we write specific content for each chapter; in this period, we need to concentrate on consistency, clear objectives, and logical organization.

It is prevalent to use the storytelling method to illustrate the architectural project, especially in a place with a long

and abundant history or where places have experienced war and been severely devastated. For example, the architectural project “The Museum Building” was designed by Bernard Tschumi, located in the historic area of Athens, Greece.
In many websites and literature records, the writing of this project, which illustrates both its research and design aspects, uses the storytelling method, which has a significant effect. The project uses chronological order to narrate, starting from the description of the historical background of the museum, which shows that the Acropolis of Athens has been destroyed many times during some historical events. Then, the previous museum needs to be built because the number of antiquities unearthed from archaeological excavations is increasing dramatically, which requires a museum to store and protect them. The demand for this museum is because of the need to move outdoor artifacts indoors for better protection and the lack of storage space in the original museum, where the museum designed by Tschumi was born. After that, the narrative comes to the process and the concept of this museum. “Designed with spare horizontal lines and utmost simplicity, the museum is deliberately non-monumental, focusing the visitor's attention on extraordinary works of art. With the greatest possible clarity, the design translates programmatic requirements into architecture.”[1]
Finally, the narration turns to the details of this design. Therefore, narration using the storytelling method is more beneficial for illustrating the author's point of view, attracting the reader, and guiding them to read further. Moreover, it is clear and easy to understand the author ideas and intentions, which could prove the author’s

1. ArchDaily. “New Acropolis Museum / Bernard Tschumi Architects”. 27 May 2010. ArchDaily. Accessed 15 Feb 2024. https://www.archdaily.com/61898/new-acropolis-museum-bernard-tschumi-architects.

Fig. 4. Drawing for the stage of research by writing

originality.

The Stage of Research by Comparison

Comparison is an indispensable technique throughout the research process, intricately linked with the reading, drawing, and writing phases. The notion that architectural design and research should not always strive to create new types or fields is underscored. Often, the emphasis lies in analyzing and comparing a multitude of comparable existing research results and architectural design practices. Researchers and designers systematically generate and optimize their own research and design by comprehending different projects similarities, differences, merits, and shortcomings. This is particularly evident in architectural typology research, where the core methodology involves the comparative study of multiple similar types or forms of elements in the same time and space, demanding analogy and

induction for understanding.
This essay uses examples to illustrate that the ensuing paragraph engages in research by undertaking a comparative analysis of three prominent museums. These institutions share masonry as the primary material for their building envelopes and are situated in distinct temporal and regional contexts.
The first example is the “Kolumba Museum”, a creation of Peter Zumthor that was completed in 2007. The design approach consolidates existing fragments into one cohesive structure, seamlessly integrating with the ruins. “The warm grey brick of the massive building unites with the tuffs, basalt, and bricks of the ruins”,[2] showcasing an organic connection with the existing structures. The organic integration with the existing ruins, the perfect integration with the surrounding site, the texture and color of new and old building materials and the charming indoor light and shadow effects. The architects made these local-specific designs based on full respect for the site and presence, which together resulted in this outstanding building. The second museum under scrutiny is the “Ningbo History Museum”, designed by Wang Shu and erected in 2008. Wang Shu’s vision is to preserve memories of demolished villages by using materials recycled from the site. It can be seen that recycling materials from demolished buildings on the site present the design of this building. From this point of view, this approach also preserves the original “ruins” on the site. There are similarities with the Kolumba Museum. However, in terms of design essence, this building is a large-scale public building newly built on a blank site. The facade design and interior material selection could be more complex

2. Divisare. “Peter Zumthor Kolumba Museum”. Divisare. 24 Jul. 2017. Accessed 15 Feb 2024. https://divisare.com/projects/349228-peter-zumthor-rasmus-hjortshoj-kolumba-museum

and diverse. This is different from the former. The third case is the “Kadokawa Culture Museum”, crafted by Kengo Kuma in 2020. Kuma aimed to recreate a more distant memory - the moment when the Musashino Plateau was formed by the squeeze of the tectonic plate. To some extent, this project shares some similarities, such as the concept of the previous two projects, but the irony is that the granite used in this building to preserve the Japanese culture comes from China instead of local Japanese materials. At the same time, this building gives people an intuitive sense of the uniqueness and weirdness of the building itself and does not give people the feeling of integrating into the surrounding site. These examples reveal that although these three buildings are similar in materials, colors and functions, the most significant differences are the site, architecture, the coordination and unity of indoor and outdoor materials and indoor effects, and

Fig. 5. Drawing for the stage of research by comparison.

the implementation of the architectural concept. These examples reveal that although these three buildings are similar in materials, colors, and functions, the most significant differences are in the site, architecture, the coordination and unity of indoor and outdoor materials and indoor effects, and the implementation of the architectural concept. These are the characteristics that good original works should have. As Peter Eisenman stated, “Imitation must be practiced in the absence of the original”. We need to fully learn the essence of the reference project we admire so as to realize our own creation and show our own ideas to realize the originality, rather than directly and bluntly using elements that have not been “digested” personally.

Conclusion

Architecture has been at the center of discussions on “originality” with the abundance and distribution of knowledge.[3] Overall, the stages of design-based, reading, drawing, writing, and comparison are not merely procedural steps in architectural research but transformative methods to shape original and innovative thinking. The pivotal role of each stage in fostering creation and guarding against plagiarism is evident. The essence of these phases lies in interpreting, synthesizing, and inventing rather than repeating and copying. The originality is a fundamental criterion and persistent pursuit.

3. Söhmen Tunay and Uz, “Deconstructing ‘Original-Copy’ in Architectural Manifestos from 20th Century to Present”.

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The Dualism between Theory and Practice
Isabella Giola

Architectural research helps you look where you would never have thought of looking before. It critically tries to intercept an unknown, unclear, poorly defined aspect, attempting to bring it back to light. And that is exactly why "this process may often seem 'chaotic' in the sense of 'unstructured' or even 'random' – and sometimes is. However, this is a self-reflective, iterative process where the findings of these seemingly "random" actions are again and again critically questioned and contextualized".[1]
It is precisely this small spark of knowledge that intrigues us and generates self-reflection in architectural research: it is a crucial point. The non-scientific nature of design research is an aspect that makes me understand that issues of this type are necessarily intrinsically connected to an ethical and moral sphere.

1. EAAE Charter on Architectural Research - European Association for Architectural Education, 2022.

The production of quality research in this discipline "is first of all a problem of awareness: awareness of the importance of stating where we are".[2] I must first understand my point of view and my position on the topic. Since this process is based on extremely subjective reflections and perspectives, I find it difficult to imagine a field that affects even more pragmatic and concrete areas.
The observations are on concrete things, but the product of the observations is still pure and intangible theory: thinking about a tangible thing does not produce a new visible one but an effect, an impact that this thought will have on something else in the future. It is constantly looking ahead. It is a steady internal struggle.
A battle over developing reflections on concreteness and giving substance to an ethereal knowledge. We, as researchers,

2. Jean Nouvel, "Spirit, are you there?", interview by Walter Mariotti. In "Invention springs from character", supplement, Domus 1063, (2021).

have to offer new insights that lead to a narrative "captured in anecdotes",[3] generating stories that will have an "impact on theories of creativity".[4] And if stories, to be told, require protagonists, architecture, intensely connected to man, is the most fertile soil in this context. If no individual were interacting with the world around it, interfacing with reality in all its many facets, it would not even be possible to open architectural questions intentionally: interrogatives on the determination of space, on the quality of environments, routes, distances, permeability of areas, and so on. Architecture is inhabiting spaces; whether external or internal, it is still a being. For this reason, when we talk about research in the architectural field, we inevitably enter into a psychological, introspective, and intimate scene: separating the two areas just mentioned is complicated and perhaps not even possible. It would not make sense. This accentuates a psycho-anthropological value that Marc Augé himself attributes to his famous "Non-Places";[5] we must see space in relation to the psycho-relational effects, through which a process of "construction of solitudes"[6] emerges which adds to the list of contemporary alienation phenomena. Architectural research, by definition, is an act of constant inquiry, discovery, and investigation. It involves constantly questioning yourself and creating questions you cannot find peace with. These assumptions intercept areas of a humanistic nature: this contamination

3. Richard Blythe, Leon van Schaik, "What if design practice matters?" In *Design Research in Architecture: An Overview*, ed. Murray Fraser (Surrey: Ashgate, 2013), 53.
4. Ibid.
5. Marc Augé, *Non-Places: Introduction to an Anthropology of Supermodernity*. Translated by John Howe (New York: Verso, 2009).
6. Michael Sheringham, "Marc Augé and the ethno-analysis of contemporary life". *Paragraph* 18, no. 2 (1995): 211.

Egon Schiele, Haus mit Glockentürmchen, freehand drawing, 1912.

is only a pretext to underline a deep mental and spiritual approach of such an apparently material discipline.
In the end, what appears to be a contradiction, as in the case of this architectural dualism, it's simply a way out to avoid the isolation of architecture as an object of research, "as an autonomous discipline, beyond the reaches or control of outside influences".[7] Accepting the internal coexistence of these two factions is the survival of architecture itself.

Research by Reading: Architecture, Read as a Synthetic Image

It is not simple to let these two souls of the project coexist in the research process. If, in some way, this development is equivalent to storytelling, we need to understand what the most suitable way is to communicate our tale and to convey

7. Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007, 1.

it to our audience. There are infinite roads. The iconographic apparatus has always appeared as an effective tool for immediate understanding and in support of what is expressed: the image is able to strengthen and amplify the deepest meaning of our discourse. However, if we cannot master this communication channel properly, we could risk setting up a sterile collection of information that does not provoke or trigger any type of reaction: this may even cause us to lose focus on the topic being discussed. How, then, can this be managed? The architecture that has taken shape (in the present or in the past), in a rudimentary definition, is matter. It is tangible. The space around us is visible: it is there, existing, it is not in our mind.
Talking about concepts in the architectural field, the result of observations and analysis of existing things is in fact, possible because we have seen these objects: laid out in a book, published in a catalog, presented on a different scale, through a model, at an exhibition. But also posted online, filmed in a movie, projected at a conference, or simply more laboriously seen with our own eyes during an inspection.
Our thinking about architecture, therefore, starts from physical observation, in the presence of something sensitive, or through the report of someone else's direct experience. Precluding this tool in our architectural research would be like not giving others the opportunity to generate different and unexpected doubts like us, perplexities which could in turn generate other interesting intuitions. Therefore, as Fabrizio Gay[8] suggests, rather than giving value to images in the

8. Fabrizio Gay is a full professor and currently the holder, at the IUAV University of Venice, of a course on Representation for the Architecture. He conducts studies on theory (semiotics and anthropology) of images, on history and techniques of graphic representation and on morphology of artefacts, especially referring to the field of architecture.

field of architectural research, it would be better to talk about "the effectiveness of architecture as an image".[9]
The image is understood by him both as an extrinsic and intrinsic approach:
"Considering architecture as an image I am referring on the one hand to the intrinsic image of a construction its iconicity or workmanship and on the other hand to its extrinsic image, how it presents itself socially by participating in the circulation and genres of images. These two sides of the same reality are generally understood in a schizophrenic way; phenomenological and morphological theories look only at the intrinsic face of architecture as an image, while its extrinsic face is framed by historical and anthropological theories of visual culture".[10]
Following this trail of reasoning, Rem Koolhaas in *Delirious New York*[11] uses the expressive force of architecture, in terms of visions, to accompany the reader on a parallel and reinforcing narrative path for the text: rigid planimetric grids sublimate little by little into utopian fragments showing how the author has a careful construction both on a scenographic and mental level.
This work is a perfect and complex

9. "Specifico il tema della 'visualità' nella questione della efficacia delle immagini in architettura o, meglio, dell'efficacia dell'architettura in quanto immagine", Fabrizio Gay, "Architettura in quanto immagine: spazio contro tempo", in Impronte (Rome: Artegrafica, 2014), 219.

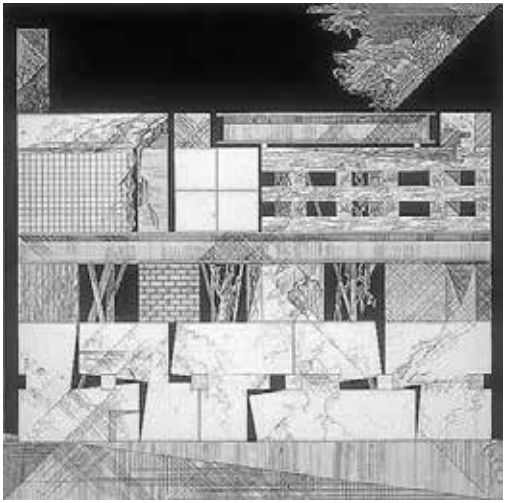
10. "Considerando un'architettura in quanto immagine mi riferisco da un lato all'immagine intrinseca di una costruzione la sua iconicità o fattura e dall'altro lato alla sua immagine estrinseca, cioè al come essa si dà socialmente a vedere partecipando alla circolazione e ai generi delle immagini. Questi due lati di una medesima realtà sono generalmente colti in modo schizofrenico; teorie di tipo fenomenologico e morfologico guardano solo al volto intrinseco dell'architettura in quanto immagine, mentre il suo volto estrinseco inquadrato da teorie storiche e antropologiche della cultura visuale.", Ibid.
11. Rem Koolhaas, *Delirious New York*, (New York: Monacelli Press, 1997).

communicative apparatus where the images give shape to the persistence of the words, synthesizing a "totality"[12] that the latter lack: the reading of images in the architectural project, therefore, does not accompany the reading of the words but enhances them by completing their meaning.

This synthesis could also be read, finally, as an initial point of arrival in our research process: if a bare text in this field already leads us to mental representations, the superposition of visual pictures would amplify the awareness of our reasoning, pushing "the reader into conceptual abysses from which he emerges exhausted as well as enriched".[13]

Research by Drawings: The Project, Drawn as a Cognitive Act

12. Yona Friedman, *L'ordine complicato. Come costruire un'immagine.* Translated by Paolo Tramannoni (Macerata: Quodlibet, 2018), 2.
13. Antonino Saggio, "Franco Purini tra Futurismo e Metafisica," *Costruire*, no.131 (1994): 124-128.



Franco Purini, Sovrapporre, 1993. From: Come si agisce dentro l'architettura, exhibition curated by Gianni Contessi, Accademia di Brera (Milan) autumn 1993.

If the image manages to summarize the totality, the drawing takes a subsequent step: it reworks what has been to re-propose it in a personal way, taking our belief elsewhere. In this kind of research, the selection of certain graphic representations or self-produced drawing-redrawing already represents an implicit but accurate critical position.
The autonomous decision of choice does not necessarily have to produce a result; sometimes, it is just an externalization of a thought that is articulated in a process. During my initial phase of architectural research, I am considering the act of redesigning architecture produced by other authors as a fundamental phase that can give greater body (not method) to the constant and chaotic flow of my thoughts: the idea would be to start from a broad rereading of projects similar to my theme to then proceed to a skimming where I capture what can really give value to the topic; not because it is a new aspect but because perhaps little investigated and valorized, because at the beginning considered not of importance or because, on the contrary, overexposed but for other reasons. This operation is a mental collage of ideas which, through a graphic decision of representation, layout, and visual setting, assists in covering the original projects with different clothes; it is as if you superimpose a filter that distorts commonly accepted and shared perceptions.
Drawings are not finished products that uniquely tell what they show. They appear as shapes with permeable pores that can modulate based on what we perceive, acquiring “the meaning of a reflective attitude. Aptitude through whose exercise the evolution of knowledge proceeds in the consciousness/unconscious dialectic. This attitude, which we can also call the potential for reflection, becomes a cognitive act, that is, a reflective act, through its own objectification in the

represented content: the primordial image. The latter therefore comes to coincide with the symbol. Once the symbol is brought to consciousness it is weakened, transformed into a sign, and ceases to act unconsciously on man's behavior. In this way, however, it is possible for new symbolic contents to emerge which contain new responses to the new demands that the world places on the individual".[14]

14. "La dinamica archetipica, in quanto disposizione alla rappresentazione finalizzata alla conoscenza, acquista il significato di attitudine riflessiva. Attitudine attraverso il cui esercizio procede l'evoluzione della conoscenza nella dialettica coscienza/inconscio. Tale attitudine, che possiamo anche chiamare potenzialità alla riflessione, diventa atto conoscitivo, cioè atto riflessivo, attraverso la propria oggettivazione nel contenuto rappresentato: l'immagine primigenia. Quest'ultima arriva quindi a coincidere con il simbolo. Una volta che il simbolo è portato alla coscienza si depotenzia, si trasforma in segno e cessa di agire inconsciamente sul comportamento dell'uomo. In tal modo però si rende possibile l'affiorare di nuovi contenuti simbolici che contengono le nuove risposte alle nuove esigenze che il mondo pone all'individuo", Giorgia Moretti and Mario Mencarini, *Alle soglie dell'infinito* (Castelfranco Veneto, 1995), 148.

I cannot know in advance that there is a provocation that may arise, just as I cannot know that the process, I am currently following will remain constant and valid for each work or author taken into consideration.
However, the only certainty I have is that this development starts from my thoughts. The drawing allows me to show these aspects more accurately because I can dismantle and recompose the project based on what I saw inside it.
The act of drawing gives an opportunity to explore every possibility of expression of architecture, leading me to an exorbitance of material, positive aspect because, as Manfredo Tafuri reminds us, "excess always brings knowledge".[15]

15. "È proprio per tale esperienza del limite, per i loro eccessi, vale a dire, che essi ci interessano: l'eccesso è sempre portatore di conoscenze", Manfredo Tafuri, "Les bijoux indiscrets", in *Five architects N.Y.* (Rome: Officina Edizioni, 1976), 10.

The act of redrawing, from this perspective, is not a mere copy and paste because even just the choice of the thickness and style of the line, of highlighting one element instead of another, identifies an original way of seeing things. I can remove, add, distort, shrink, and enlarge: I create my version of the project.
This immediately became clear to me in the work *Victims* by John Hejduk[16] because, even though I know almost nothing about this work, I immediately understand that there is a caricatural and provocative approach: I perceive a fictitious architecture that generates contrasting emotions, doubts, and questions. Drawing as it is used becomes a self-sufficient process, an experimental language, completely free "from the obligations imposed by function, place,

16. John Hejduk, *Victims* (London: Architectural association, 1986).

John Hejduk, sketch, A catalogue of Architectural Monster, 1986. From: John Hejduk, *Victims* (London: Architectural Association, 1986).

technique or program".[17]

Research by Writing: The Fragment, Written as a Coherent Structure

What we produce in the context of academic research, however, personal and introspective as a point of view on a given topic, must not be misunderstood with the unfiltered transposition of opinions. Before mistakenly transcribing an incessant flow of thoughts, it is essential to know how to master the tool of writing by starting to consider it as an expressive planning tool on par with drawing. "The architect must expand his traditional tools beyond drawing, including the word in the form of writing and as the production of concepts to communicate ideas in a more transmissible way and open to subsequent modifications".[18]

A planning approach to writing can be undertaken to start from a selection of the topic you want to talk about and giving a coherent organization by theme: there does not have to be an immediate chronological order, but at least hypothesize a corollary of themes that would help to better understand our topic. The ability to understand what to discard and what to keep is also closely connected to the concept of time in the research process. We must be aware that research takes time, but we must know how to handle it: falling into the oblivion of an endless chain of sensations, perceptions, and information is the greatest risk.

The temporal and content scansion of a research paper allows you to give rhythm

17. "Nello stesso modo in cui i pittori erano stati capaci di prescindere e liberarsi della dipendenza contenutistica che aveva caratterizzato le arti visive, gli architetti avrebbero dovuto affrancarsi dagli obblighi imposti dalla funzione, dal luogo, dalla tecnica o dal programma", Rafael Moneo, Inquietudine teorica e strategia progettuale nell'opera di otto architetti contemporanei. Translated by Stefano Giuliani (Milan: Electa, 2005), 125.

18. Roberto Damiani, "Postfazione", in *Inside Out: Scritti 1963-1988* (Macerata: Quodlibet, 2014).

to the work process, not wasting time on research that would risk being an end without leading to a point (closed or open, it does not matter).
You could spend your whole life investigating a project, a context, a phenomenon, unearthing everything that has not been said and reinterpreting what has already been said through new connections. But in doing so, we would constitute static monographs, maps, and anthologies in a sterile assemblage of knowledge. The goal would be lost, namely that of preserving the identity and specificity inherent in the fragment of knowledge found and made one's own. To avoid this, the contents covered must be selected with a view to highlighting this small piece of intuition: themes that do not overshadow it.
In *Privacy and Publicity*,[19] this aspect is central: the author observes a new facet of architecture as the result of the constant influence of the mass media. This theme raises a question in her about what an internal domestic space should be like compared to an external space, whether an intimate and private retreat or a constant movement and extension of what is outside.
Colomina finds a snippet to investigate and macro areas through which to highlight the potential of her theory. She starts with concepts related to how architecture is seen and what it shows, thanks to keywords: Archive, City, Photography, Publicity, Museum, Interior, and Window. And to talk about architecture, you need architecture. That is why the works of Adolf Loos and Le Corbusier are essential in this book; their projects show the duality of her vision and thoughts.
Clear and precise fragments, keywords that enhance the singularity of the

19. Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge: The M.I.T. Press, 1994).

fragment, and practical examples are potential tools to adopt for a coherent process of research.
Through this structure, it is possible to bring to light theoretical concepts that are not purely fictitious and ideal but have a pragmatic base and roots that start from important architectural considerations.

Research by Comparison: The Imitation Game as Emancipation and Blame in Architecture

You can never let your guard down in the architectural research process.
Unlike the methodology and rigorous logic of other branches of knowledge, every aspect in this field of research is questioned and often generates dualisms, contrasts, or contradictions: this is because the object of the research, that is, architecture, is an object undefined and with blurry edges. Research tools such as reading, drawing, and writing have been investigated so far in this text, and

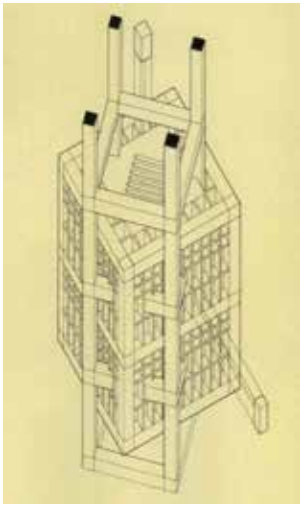
O.M. Ungers, sketch, Fragments of a polycentric shrinking city, 1977. From: O. M. Ungers, Rem Koolhaas, Peter Riemann et al., *The city in the city: Berlin: a green archipelago*, (Zürich: Lars Müller Publishers, 2013).

in all three contexts. the mechanism of comparison was always implicit: without the activation of the act of comparison, the maturation of a thought-critical by such means would not be possible.
I can reflect on an architectural work only if I have prior knowledge, not of the work itself, but of at least similar cultural background. I must know something more, something else.
Comparing etymologically means "putting two things on the same level", "on par", and preparing or producing something ready for use: the leveling operation automatically becomes an evident expression of the non-existence of pure originality. Ideal originality is a deception: any architecture placed before our eyes never arises from nothing.
"It is something that is inherent to architecture, the accumulation of knowledge, notions, images, and examples that make up a more or less organized and more or less conscious system, which we recognize as the conscience and knowledge of the architect".[20]
Originality in terms of creation can only exist in architecture within the concept of variation. In physics, the third principle of dynamics applies: nothing is created, nothing is destroyed, but everything is transformed. If everything is always changing, it means that to adopt different guises, it must have its own basic structure: its primary nucleus, which it maintains and to which it attributes new modes of expression. In architecture, this everything can be traced back to the type. As Carlos Martí Arís underlines, type

20. "In realtà, si tratta di qualcosa che è connaturato all'architettura, del cumulo di conoscenze, nozioni, immagini ed esempi che compongono un sistema più o meno organizzato, e più o meno consapevole, che riconosciamo come la coscienza e la conoscenza dell'architetto", Alessandro Rocca, "Esercizi di imitazione", in Cinque temi del contemporaneo. Memoria, natura, energia,comunicazione, catastrofe (Macerata: Quodlibet, 2020), 68.

allows us to reveal both the "essential content and an operational method that constitutes the very basis of the act of designing".[21] This concept is the starting point from which it is possible to constitute creative acts and not a rigid grid from which one cannot escape.
However, the comparison is possible precisely because there is an equal basis, which allows the variations to be noted. This "Human desire"[22] of escape is possible due to "a new variation".[23]
So, this constant reminder of something else is the only creative form that architecture can acquire because it "is eternally, inescapably condemned to different repetition and imitation",[24] as it will never be able to completely detach itself from the process of imitation of nature, of mimesis.
Compared to the fictitious world of art, architecture has this constraint and strength at the same time, which is called reality: reality demonstrates a complexity greater than what has been understood about it; in fact, realization is always different; the transition to concreteness leads to diversification, growth, complexity, and authentication. While in the abstract, purely ideal idea, the sterile copy is worth as much as the original.[25]

21. Carlos Martí Arís, *The Variations of Identity: The type in Architecture* (Marseille: Cosa Mentale, 2021), 27.
22. George Kubler, *The Shape of Time: Remarks on the History of Things* (New Haven: Yale University Press, 1962), 72.
23. Ibid.
24. Alessandro Rocca, *Totem and Taboo in Architectural Imagination* (Siracusa: LetteraVentidue, 2022), 106.
25. Gillo Dorfles, *Artificio e Natura*, (Milan: Skira, 1968).



Stanley Tigerman, axonometric drawings for the Formica Company, 1986. From: Marco Moro, “The Auckland Drawing School. On the margins of architectural representation”, *FAMagazine. Ricerche e progetti sull’architettura e la citt*à, no. 59-60, (2022): 194-202.

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[Un]Speakable Space
Kaiyue Guan

The origin of architecture is often considered to be the result of architects' creativity, thus intertwined with subjectivity, unique perspectives, and artistic expression. According to idealism's understanding of objectivity, the realm of artistic thought is seen as inherently subjective and cannot be accessed through pure rational means. In this context, architectural research is often juxtaposed with scientific inquiry, with architecture being viewed as an art form that transcends logical processes and emphasizes sensitivity and creativity, thereby lacking objectivity and independence in research.

Building upon Karl Popper's "Three Worlds Theory" (Popper 1980, 141-167), Carlos Martí Arís proposed a new interpretation of scientific and architectural research, leading to profound reflections in the field of architectural research. Arís delineated three distinct domains: World 1 encompasses architectural works themselves, representing subjectivity, uniqueness, and artistic expression within the objective realm of architecture. World 2 encompasses the creative thought processes of professionals such as architects, representing mental states and imagination. World 3 represents the concepts and statements related to architecture, forming the architectural corpus. Similar to World 1, World 3 also possesses objectivity and autonomy (Martí Arís 2021, 53).

In this theoretical framework, architectural research can be understood through two complementary pathways. From World 1 to World 3, it involves abstract analysis and universality exploration, focusing on the overall principles and concepts behind architectural works.

This pathway represents the processes of analysis and induction, aiming to reveal the inherent patterns and meanings in

architectural creation. Conversely, the pathway from World 3 to World 1 emphasizes the concrete expression of architectural ideas, focusing on spatial composition, materiality, and contextual relevance. This pathway embodies processes of synthesis and expression, translating abstract concepts into tangible architectural forms.

Although these two pathways have different directions, they are fundamentally interconnected and mutually reinforcing, constituting a dynamic and continuous flow in architectural research. Like a bidirectional flowing river, they represent ongoing exchanges and interactions between abstract analysis and concrete expression within the architectural domain. This holistic perspective enriches our understanding of architectural research, highlighting its multifaceted nature and intrinsic connections to artistic expression and knowledge exploration.

The Autonomy of Language

"[...]Seeing that nearly all words to be found in the dictionary stand for universals[...]" (Russell, 2012).

The autonomy of language is inherent in its essence, which encompasses abstraction, definition, and form. Language serves not only as a means of communication but also as a mode of thought and a form of cultural expression. Through language, abstract concepts can be concretized and defined, facilitating the transmission and comprehension of ideas. Every object that can be named harbors infinite possibilities because language assigns specific names and meanings to them (Martí Arís 2021, 45), rendering them objects of thought and communication. Thus, the autonomy of language lies in its ability to shape and influence our cognition, thought, and behavior, stemming from its inherent abstraction and definitiveness. The autonomy of language endows it with

Michelangelo, Studies and expresses for the staircase and vestibule of the Laurentian Library, Florence (Casa Buonarroti 92A), 1525.

limitless creativity and expressive power, continually enriching and expanding human cultural and knowledge systems.
Behind language lies the representation of human thought and consciousness. In the traditional dualistic perspective, thoughts, as well as the concepts and statements they produce, are considered as a unified whole, as opposed to the external objective world, giving rise to a cognitive model of external objectivity and internal subjectivity. However, Karl Popper reshaped this dualistic perspective by introducing the “Three Worlds Theory”. Popper proposed that the concepts and statements emanating from thought and consciousness can exist independently as intelligible objects, possessing objectivity and autonomy similar to the external material world.
Such considerations have sparked the possibility of an objective epistemology in architecture. Architecture can exist independently of the activities and mental

processes of individual architects, becoming an objective body of disciplinary knowledge with its own autonomy (Martí Arís 2021, 53). On the one hand, architects generate theories and statements about architecture through their perceptions and thoughts, contributing to the architectural corpus. On the other hand, leveraging the autonomy and objectivity of this corpus, they influence the objective world through the process of design, whether in three dimensions or two. Conversely, architects utilize their mental world to analyze architectural works, infusing new energy into the architectural corpus. This interplay represents the allure of architectural research and, in parallel, the allure of reading within language.

Beyond the Word, the Power of Silence

"What can be said at all can be said clearly, and whereof one cannot speak, thereof one must be silent."(Wittgenstein

Gustave Doré, The Confusion of Tongues (1865). Woodcut, depicting the Tower of Babel. circa 1865-1868.

2023, 108). Architecture can be understood as a place that accommodates various activities. However, activities precede architecture itself. Architecture emerges only when a series of activities are concentrated or fixed, giving rise to the need for spatial organization (Martí Arís 2021, 105). From this perspective, the primary purpose of architecture is to generate spaces that accommodate behavior. Architecture research, to a large extent, therefore manifests as the study of space. When architectural elements come into relation with one another, space emerges inadvertently. Space, as an abstract entity, is often difficult to comprehend and study.

Henri Lefebvre's concept of the spatial triad aids in further understanding the role of space in architectural research. Unlike traditional dichotomies, Henri Lefebvre proposes that space can exist in three states: the spatial practice representing the physical world, the spatial representations perceived by architects and urban planners, and the representational spaces experienced by users. These three states are not mutually exclusive. Analogous to Popper's three worlds theory, they each have their own autonomy while also exhibiting entanglement and correlation. From this perspective, space exhibits a superimposed state, serving as both the origin of architecture, the process of thought, and the outcome of architectural design.

The triadic nature of space makes it challenging to accurately convey through words, particularly when describing spatial experiences. For instance, it is difficult to use words to precisely describe the public or private states of everyday living spaces, let alone the fact that these spaces themselves are often a superimposition of multiple private and public dimensions. The cognition and understanding of space, thus, exist in a realm of ineffability and mystery within

language. However, the purpose of architectural research is not to create more words or further abstract abstraction. In a sense, architecture is anti-profound. As Ludwig Wittgenstein said, when faced with the unspeakable, we should remain silent. So, how can the perception of space beyond words be better understood and discussed?

To navigate this challenge, the realm beyond verbal expression finds articulation through visual means. As Wittgenstein suggested, the unspeakable can find visibility (Wittgenstein 2023, 51), and the potency of imagery emerges as a potential conduit. The exploration of the power of images and models lies in utilizing visual elements as a bridge, bridging the gap between the ineffable aspects of spatial perception and tangible representation, thereby advancing architectural research toward a deeper understanding and discourse on spatial issues.

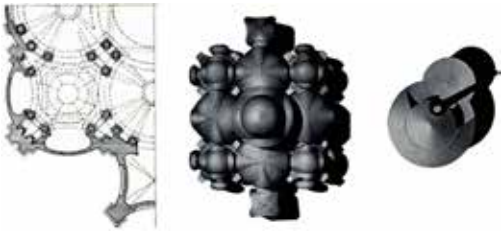
The Space: Under the Gaze

In contemporary discourse, there is a notable paradigm shift in the comprehension and depiction of architecture and spatiality. Modern architectural frameworks and their intricate connections with urban settings are undergoing profound reevaluation, prompted by an array of visual media encompassing photography, cinema, advertising, fashion, and related forms of visual representation.

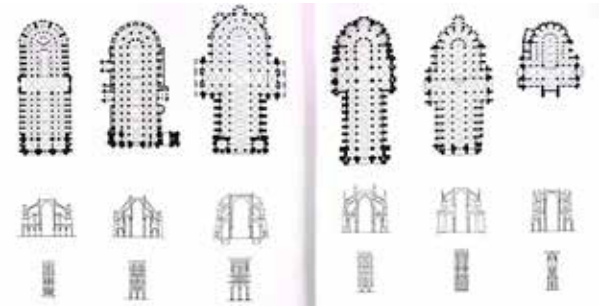
Diverse cultural backgrounds and historical epochs yield distinct expressions of domestic spaces. As theorized by Lefebvre, “(social) space is a (social) product” (Lefebvre 1991, 32), suggesting that space, akin to industrial products, is the culmination of each society’s unique production processes. The dichotomy between public and private spatiality assumes varied manifestations across cultural landscapes and historical periods. The domestic

space, being intimately tied to human existence, embodies notable discrepancies in its spatial morphology and articulation. In numerous designs by Adolf Loos, the domestic space serves as a stage where inhabitants act as both performers and spectators. With the infiltration of social activities into domestic settings, Loos integrates elements of publicness within private domains.

By delineating physical and visual connections, residents can seamlessly transition between observing and being observed, thus, assuming dual roles as subjects and objects within the space (Colomina 2022, 197-209). This overlapping state of spatial intimacy subtly unfolds within the architectural confines, while externally, the building adopts a neutral stance within the urban milieu, discreetly asserting its dominance and becoming the subject of external gaze. Conversely, Le Corbusier employs horizontally expansive windows to direct



Luigi Moretti, Using models and drawings to visualize space. Strutture e sequenze di spazi, Spazio, 7/1953.



Carlos Martí Arís, The great French gothic cathedrals of 12th and early 13th century: Paris, Bourges, Chartres, Reims, Amiens and Beauvais, 1993.

gazes outward from domestic spaces, initiating an observation of the external environment, while floating frames montage-like shape the architectural context. In Le Corbusier's designs, windows function as lenses, controlling the line of sight (Colomina 2022, 253-265). Concurrently, these open windows become integrated into the urban environment, altering the focal point of observation, with the interior of the building becoming the object of gaze. For Le Corbusier, influenced by the new urban environment and media, the distinction between the interior and exterior of the building becomes less significant. Space transcends the presence of walls; rather, it materializes through the act of gazing.

Type: Creativity and Anti-Creativity

Architecture exhibits a tendency to replicate itself (Picon 2013, 14), echoing its own forms and structures across

different contexts and time periods. Since antiquity, architecture has been regarded as a discipline characterized by its capacity for classification, organization, and transmission of knowledge. Consequently, the notion of architectural types serves as a foundational concept in architectural research, offering a framework for understanding and analyzing the organizational principles inherent in architectural design.

The concept of architectural types can be understood as analogies of organizational structures within architecture. These types represent recurring patterns and configurations of architectural elements and forms that have emerged through historical precedents, cultural influences, and functional requirements (Martí Arís 2021, 46). They encapsulate the accumulated wisdom of architectural traditions, embodying principles of spatial organization, circulation, and programmatic arrangement.

However, a persistent misconception regarding architectural types is the notion that their application stifles creativity. On the contrary, architectural types serve as catalysts for creativity, providing architects with a rich vocabulary of forms and spatial configurations to draw upon in their design processes. Rather than imposing rigid constraints, architectural types offer a flexible framework within which architects can explore and innovate, adapting and reinterpreting established typologies to suit contemporary contexts and programmatic needs.

Indeed, within the context of specific architectural types, there exists infinite potential for creative expression. Variations in scale, materiality, spatial sequence, and environmental performance allow architects to imbue each project with a distinct identity while remaining rooted in the underlying typological framework. These variations serve as a

testament to the architect's ingenuity and capacity for inventive design solutions, demonstrating how architectural types can serve as generative sources of inspiration rather than restrictive templates.
Furthermore, while architectural types may imply a degree of universality and repetition, their application within architectural practice transcends mere replication (Martí Arís 2021, 115-117). Architecture is inherently tied to the notion of place, with each project responding to the unique characteristics and context of its site. The specificity and singularity of place imbue architectural design with a sense of authenticity and belonging, emphasizing the role of architecture as a responsive and contextually sensitive practice.
In summary, architectural types represent a rich reservoir of historical knowledge and spatial precedents that inform and enrich contemporary architectural practice. Far from inhibiting creativity, architectural types serve as springboards for innovation, enabling architects to navigate the complexities of design while remaining grounded in the timeless principles of architectural organization. Through a nuanced understanding and thoughtful application of architectural types, architects can create spaces that are both responsive to their context and imbued with a sense of creativity and originality.

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Considerations on Imitation in Design-Driven Research

Shilu Huang

The discussion on imitation in architectural research has been getting increasing attention. Although the historical evaluation of imitation varies, the evolution of architecture could not overlook its importance. This paper aims to consider how architectural design replicates and innovates on imitation, thereby driving the research. Various aspects of imitation are explored, including self-imitation, quotation, comparison, and the construction of an imitative catalog, which focuses on the iterative process of imitation through selection, reduction, and reconstruction. This process can be examined through architectural design methods such as writing, drawing, and practice. Writing and drawing serve as fundamental tools for investigation in architectural research.[1] Meanwhile, practice allows for empirical testing in this period.

1. Rocca, “Research vs. Design: A Favorable Conflict,” 49-50.

Self-imitation in Architectural Design

Self-imitation involves replicating and refining itself, thereby making the architectural design more mature. Erich Dieckmann’s classic self-imitative drawings with metal tube chairs illustrated the innovations in furniture design. This continuous analysis in the drawing is iterated over previous designs to discover new possibilities in design, showing that even minor variations can lead to innovation.[2] Similar self-imitation can be seen in the model-making practice, which facilitates the exploring and testing of design concepts. The model-making process of OMA’s CCTV Headquarters project showcased how to optimize ideas by making similar physical models (fig. 1). The project leader, Shohei Shigematsu, mentioned that the project process could be experimented with and expressed directly through the model. Although he

2. Dieckmann, *Möbelbau in Holz, Rohr und Stahl: Die Baubücher Band 11*, 3-4.

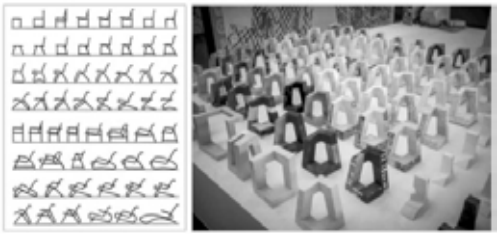

Figure 1. The process of self-imitative design. Left: Erich Dieckmann; right: OMA.

recognized that making models was a traditional way, it was more effective and suggestive.[3] This practice was a straightforward replication of similar models, where the building emerges as a collective product from "repeated, retouched and corrected many times, slightly altered, versioned, rendered, rescaled, and displaced."[4] This approach may facilitate practical imitation and innovative architectural research. Self-imitation demonstrates a process of experimentation in architectural research, which ensures consistency and continuity with aesthetics and techniques in architectural design-driven research.[5] Whether self-imitative drawing or model-making can generate innovative forms of architectural design, it ultimately leads to "a knowledge producing journey with a

3. Yaneva, *Made by the Office for Metropolitan Architecture*, 32.
4. Yaneva, Ibid., 10.
5. Unwin, "Analysing Architecture through Drawing," 107-109.

potentially spectacular outcome."[6]

Quotation in Architectural Theory

Quotation can promote the development of architectural practice by reinterpreting existing theories in architectural writing.[7] Although imitation has long been a crucial element of architectural practice, its methods and virtues are first articulated in the realm of literature.[8] This also underscores the impact of Architecture on quoting theory from other disciplines. In *On the Art of Building in Ten Books*, Leon Battista Alberti advocated for the quotation of methodology from literary studies in Architecture: meticulous inspection and critical adaptation. This quotation facilitated a deeper understanding of the evolution of architectural literary narratives and, thus, a better improvement in practice.

On one aspect, Alberti suggested that architects should undertake a rigorous survey of diverse sources, like a scholar's thorough study of a literary text, which served as a foundational step in the process of imitation: "I would have him take the same approach as one might toward the study of letters, where no one would be satisfied until he had read and examined every author, good and bad, who had written anything on the subject in which he was interested. Likewise, wherever there is a work that has received general approval, he should inspect it with great care, record it in drawing, note its numbers, and construct models and examples of it." On another aspect, he advised to imitate and refine these sources thoughtfully, just as a scholar uses critical thinking to assess and interpret the texts: "...and should he find anything anywhere of which he approves, he should adopt

6. Maas, Arpa and Nilsson, "MVRDV + The Why Factory: factoring the why in design practice," 99.
7. Godts, "By Design For Design 2," 147.
8. Brothers, "Architecture, Texts, and Imitation in Late-Fifteenth-and Early-Sixteenth-Century Rome," 83.

and copy it; yet anything that he considers can be greatly refined, he should use his artistry and imagination to correct and put right."[9]

In addition, Pier Vittorio Aureli described some key theories about imitation in his book *The Possibility of an Absolute Architecture*. He examined and imitated four masters across different eras: Andrea Palladio, Giovanni Battista Piranesi, Étienne Louis-Boullée, and Oswald Mathias Ungers. Aureli offered a new viewpoint on the interplay between Architecture and Urban Planning, emphasizing the independence and importance of architecture as a cultural and political practice.

For instance, he discussed Ungers's 1977 project Berlin as a Green Archipelago, which reinterpreted Berlin as a series of micro-cities and proposed the theory of "city within the city" to address postwar fragmentation. This concept also drew on Karl Friedrich Schinkel's vision of Berlin to address the planning crisis from an architectural point of view. Aureli described "Berlin as a Green Archipelago proposed a paradigm that went beyond modernist and postmodernist references"[10] and advocated architectural forms that were fragmented, autonomous, and politically engaged rather than following current trends. Quotation of imitation sees other disciplines or previous theories as a research source, which is not to be faithfully reformulated but selectively echoed, thereby creating a perspective that is inherently reflective and interpretive. Quotation underscores a broader philosophical stance to evaluate the past architectural theory in a new cultural context.[11] Meanwhile, it may promote interdisciplinary cooperation,

9. Alberti, *On the Art of Building in Ten Books*, 316.

10. Aureli, *The Possibility of an Absolute Architecture*, 180.

11. Hughes, "Pressures of the Unspeakable: Communicating practice as research," 254.

which could potentially foster transformation in architectural research.

Comparison in Architectural Design

Comparison is a way of transcending self-referential thought and action, which fosters the generation of new architectural designs.[12] Peter Eisenman's deconstructing drawings re-depicted the classical forms of Andrea Palladio's Villa Capra-La Rotonda. Compared with Palladio, who focused on logically organizing architectural motivations, Eisenman dissected these buildings through conceptual and geometric forms[13] (fig. 2). He regarded drawing as a research method to imitate and challenge conventional ideas and then proposed new architectural typologies. As he explained in the Harvard Graduate School of Design

12. Pradel and Zanotto, "Tools for Comparison: Building a Common Ground for Doctoral Design-Driven Research," 62.
13. Eisenman and Roman, *Palladio Virtuel*, 39.

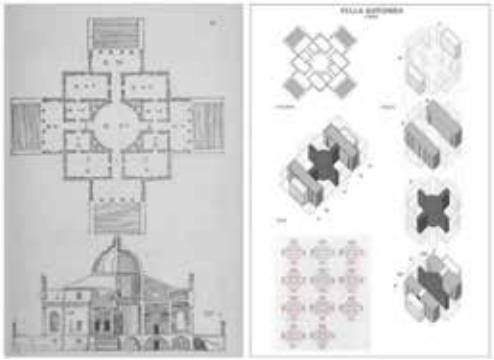

Figure 2. Geometric diagrams of Villa Capra-La Rotonda. Left: Andrea Palladio; right: Peter Eisenman, Matt Roman.

debate in 1982 regarding these drawings, focusing on alternation and significance, and suggesting a different typology—an architectural style that valued disruption, contrast, and the unconventional use of space.[14] These analytical drawings promote Eisenman's invention for a condition of new research, in which imitation may be used in the absence of the original principles and forms.[15]
Another comparison is Rem Koolhaas's practical project, Villa Dall'Ava, which has been interpreted as an inheritance and critique of Le Corbusier's Villa Savoye. Koolhaas's imitation rejected strict modernity, as he concluded on the "critical-paranoid" method,[16] ironically reformulating the "Five Points" (pilotis, roof garden, free plan, free facades, and horizontal windows) under postmodernism. Compared to Corbusier's "Five Points,"[17] Koolhaas exaggerated cantilevered floating boxes, surreal sky pools, narrative space, wave-shaped aluminum panels, and different forms of glass windows, all of which seemingly dismissed modernist "machine aesthetics."[18]
Firstly, in Villa Savoye, Le Corbusier employed pilotis to elevate the structure, creating a continuous and unobstructed space underneath. In comparison, the pillars in Villa Dall'Ava were more random and sculptural in form. Secondly, the roof garden of Villa Savoye featured a reinforced concrete floor that could be used like the lower floor, providing an accessible outdoor space. Similarly, Koolhaas integrated a swimming pool into

14. Katarxis Nº 3, "Contrasting Concepts of Harmony in Architecture: The 1982 Debate Between Christopher Alexander and Peter Eisenman."
15. Eisenman, "The End of the Classical: The End of the Beginning, the End of the End," 154-173.
16. Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*, 235-241.
17. Le Corbusier and Jeanneret, "Five Points Towards a New Architecture," 99-101.
18. Koolhaas and Mau, *S, M, L, XL*, 130-193.

the roof garden of Villa Dall'Ava as a social living space. Thirdly, the free plan in Villa Savoye aimed to free the plan from structural constraints, while in Villa Dall'Ava, the structural components were separated and integrated into the design, creating a "conceptual order" that reflected the multifaceted demands of contemporary life.[19] Fourthly, the free facades of Villa Savoye, independent of the structure, were liberated from the previous load-bearing wall system. However, in Villa Dall'Ava, this freedom was explored not only on structural constraints but also responded creatively by material and color on functional and aesthetic considerations. Fifthly, the horizontal windows in Villa Savoye provided interior spaces with more natural light and better views of the surroundings. Koolhaas preserved the idea of continuous windows in Villa Dall'Ava. He employed sliding glass walls to enhance light penetration while using combined transparent and frosted glass to ensure privacy. As mentioned, the change from Villa Dall'Ava represented "a magnificent to face contemporaneity and modernity"[20] (fig. 3).

Imitation, in comparison, serves as a medium to explore the commonalities and differences between the original and imitated works while also explaining how original works are perceived and interpreted in contemporary contexts.[21] It situates both the originals and reproductions within a broader architectural discourse, encouraging an open exchange of ideas. Both Eisenman and Koolhaas express their homage and a kind of rebellion against architecture in their imitation of past outstanding works. In architectural research, while the focus

19. Burriel-Bielza, "Structure in Villa dall'Ava: Rational order versus conceptual order," 447-454.

20 Metalocus, "Villa Savoye and Villa Dall'Ava."
21 Lawrence, *The Architecture of Influence: The Myth of Originality in the Twentieth Century*, 166.

Figure 3. Comparison between Villa Savoye and Villa Dall'Ava on "Five Points." (montage by the author).

often rests on "builders," these "breakers" may be crucial to the discipline's advancement.[22]

Construction of an Imitative Catalog

The construction of a catalog is useful for the systematic study and reference of architectural imitation. It is widely used in contemporary architectural design-driven research by compiling a comprehensive database. The drawing catalog *Book of Copies*, initiated by the architectural magazine *San Rocco*, focused on creating a database of architectural images that served as templates for architects to imitate existing works[23] (fig. 4). It demonstrates how the original projects in the database were effectively embedded in the creative processes of architecture to discover unique and innovative solutions. The imitative catalog can also be seen in Winy Maas' seminal pamphlet *Copy*

22. Price, *Re: CP*, 6-8.
23. San Rocco magazine, "Book of Copies."

Figure 4. Database of website and books for the Book of Copies catalog. (Image reorganized by the author).

Paste. This pamphlet combined writing, drawing, and comparison to establish an archive of architectural imitations for further research. Through writing, Maas articulated the transformation of classical elements into modern spaces, thus, concluding the variation of architectural forms. This approach not only preserves the intellectual lineage of the designs but also achieves innovation through the integration of imitation methods. In the drawing, Maas utilized advanced digital tools such as Photoshop, Rhino, and Grasshopper to visually explore the evolution of classical architectural forms and their transformation into reformed spaces. The comparison further deepened this exploration by examining the similarities and differences in iconic architectural landmarks. *Copy Paste* probes into the superficial initial observations of similar structures, and urges a more profound analytical approach to understand their “genealogy

of built form." By enumerating examples such as "pyramids" and "pixels," the pamphlet put forward a layered analysis that moved from the apparent similarities to the intricate details that distinguished each architectural typology[24] (fig. 5). In a word, this "badass guide" not only praises the value of "good fakes," but also redefines imitation as a vital tool for architectural research.

A catalog for architectural imitation can be a resource for education and research, to analyze the trend, method and influence of imitation, and to promote the formation of architectural design strategies. As Maas's research institute, The Why Factory, underlined, effective imitation could surpass original references and contribute to architectural innovation.[25] This also urges architects to rethink their engagement with existing forms and methods in order to generate innovative insights.

24. Maas et al., *Copy Paste: The Badass Architectural Copy Guide*, 368-370.
25. WA Contents, "Winy Maas Celebrates 'Good Fakes' in the Copy Paste Book Newly Released by The Why Factory."

Conclusion

By considering the above aspects, imitation can be examined as an effective medium for architectural design-driven research. It clarifies that imitation is utilized not merely as a straightforward method of replicating established designs, but also as a creative process, like Krishna Menon's view of "inventive mimesis."[26] This creative replication would enhance the understanding of the past, maintain continuity within architectural discourse, and potentially drive new research. It is a dynamic research process that adapts to new contexts and promotes the advancement of the architectural discipline.[27] To some extent, the theme of

26. Starn, review of Architectural Imitations: Reproductions and Pastiches in East and West, 77.
27. Blythe and Stamm, "Creative Practice Research

Figure 5. Database for the *Copy Paste* catalog. (Image reorganized by the author).

each design includes at once architecture itself and the betrayal thereof. Architecture, as a discipline, constantly tests in practice; every action also challenges the field itself, which also leads to "a critique which often jumps backwards and forwards between standards."[28] Although imitation can serve as a starting point, it requires a great deal of effort for groundbreaking advances, which need to be considered with a critical attitude. With the development of technology, the imitative features of architecture may become more subtle. Future architectural research is likely to reinforce the interplay between replication and invention from a broader perspective, which may be non-conformist to the past and uncertain to the future.

Glossary," 341.
28. Rocca, *Totem and Taboo in Architectural Imagination*, 51.

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Beyond Replication: The Role of Subjectivity in Imitation and Parody

Dongni Li

From the fresco period onward, fine art evolved through constant redrawing and imitation. Similarly, constrained by the context of their time, Roman architects imitated and adapted the architectural elements from ancient Greece from painting to create a new style of architecture. Subsequently, “Classicism”, rooted in the Renaissance, led the architects to adopt and reorganize a set of fixed components, forming a logical yet visually cohesive architectural language (Maas et al. 2017). This evolution of architectural style can be regarded as an early exploration of the relationship between imitation and subjectivity: Imitation is more than simple copying; it becomes a production of social transmission within a cultural and historical context, responding to the needs of the times and the culture.

Subjectivity in Imitation

The concept of “imitation” is always mistaken as mere “copy and paste”. In the context of art, imitation refines itself as a medium that integrates the creator’s subjectivity, leading to diverse outcomes based on distinct intentions. Walter Benjamin predicted the coming age of imitation shaped by mechanical reproduction and the diminishment of authenticity (Benjamin 1936); Andy Warhol explored between homogeneity and uniqueness by employing mass production techniques, creating repetitive images that tested these subtle differences; Marcel Duchamp, meanwhile, revealed the subjective mechanism inherent in the process of art creation, distinguishing originality from reproduction. These examples indicate that imitation serves as a medium for creation, where subjectivity becomes a variable and generates different forms of replication.

In this way, Imitation does not merely replicate form but integrates specific

significance. It is essential to research how imitation and parody serve as mediums through which architects can express their subjectivity, identity, and response to their context. Under the influence of subjectivity, imitation expresses its metaphor and true intention, allowing architects to analyze images, symbols, and meanings to convey broader expressions, investing architecture with a richer symbolic language and making it a response to social, cultural, and political issues.

Parody and Subjective Exaggeration

Parody, as a variant of imitation, also implies the subjectivity. The parodist highlights or exaggerates the distinctive features of the original, often with irony, while concealing its real intention to challenge the established standards. Giorgio Agamben described how "parody goes from being a literary genre to the very structure of the linguistic medium in which literature expresses itself". He further introduced "serious parody" to apply modern architectural ideology through "the preservation of formal elements into which new and incongruous contents are introduced" (Agamben 2015). Parody thus maintains a strategic distance from the original while reinterpreting the core idea through exaggeration.

In this regard, Rem Koolhaas observes that "parody tends to become the norm," indicating that this tactic preserves a balance between imitation and innovation. Expressed through reinterpretation, parody captures the essence of the original while highlighting the tension between imitation and innovation.

Imitation in Architectural Discourse

Imitation, as a flexible medium, frees works from the constraints of time, place, and genre. Looking back at the field of literature, for example, rewriting represents a form of reinterpretation

grounded in imitation, where authors from various backgrounds express personal emphasis while respecting the original blueprint. Similarly, in architecture, subjectivity is integral to imitation. As Olgiati observes, architects, whether consciously or unconsciously, integrate their own perspectives into the reinterpretation of the original. (Rocca 2022) The essence of subjectivity grants architects space for secondary creation, transforming architecture into a potent symbolic language, where imitation becomes a critical and creative design tool.

Aldo Rossi illustrates this by introducing montage techniques to deconstruct and reconstruct fragments, achieving a type of imitation through collage. Within this framework, design-driven research positions imitation as a medium that invites reflective and critical dialogue. Architects engage in this dialogue by deconstructing and reconstructing elements through drawing, reading, and writing, making images as an analytical tool that conveys information and engages in dialogue from a symbolic perspective (Tafuri 1987). Imitation and parody become a foundation and orientation, revealing the metaphors and true intentions hidden behind the symbolic forms. Through the architect's perspective, imitation evolves into a creative reinterpretation, inviting viewers to engage in critical discussion.

Imitation as Tools in Design-Driven Research

As tools within design-driven research, imitation serves as a means of exploring architectural principles. The comparison of originals and imitations fosters public interest and invites engagement. For example, Reyner Banham states that architecture is an assembly of diverse components, emphasizing the architect's role in applying communal technology

and knowledge (Banham 1980). This approach encourages knowledge sharing and accumulation, treating imitation as an essential component of a collective architectural language.

Several architectural cases illustrate this perspective. For example, Rem Koolhaas's Villa dall'Ava, located near Le Corbusier's Villa Savoye, simultaneously respects and imitates the iconic structure of the original while reinterpreting the concept of urban house as a set of contrasts. This approach questions and experiments with the modern manifesto: "Five Points of New Architecture". In another example, the city of Las Vegas is renowned for its production of architecture and landscapes catering to consumerism, generating new identities through reproduction. Here, imitation serves as a tool for creating authenticity in spaces. (Venturi, Scott Brown and Izenour 1972) Additionally, the allure of mass production and replication has popularized the term "prototype." Le Corbusier, a proponent of this idea, conducted experiments exploring module designs for mass production to address social housing demands. His Pessac project allowed residents to personalize modular units, resulting in diverse variations that meet community needs through evolving forms. (Boudon 1979) Another example is Mies van der Rohe's reconstruction of the German Pavilion in Barcelona, which reflects on the relationship between site, culture, and architecture, emphasizing subjectivity in contextual reinterpretation. These cases collectively reveal that architecture is not only a physical structure but also a response to social, political, and cultural issues.

The Dialectic of Imitation in Practice

With the advent of the information age, imitation has taken on ambiguous meaning, and it has come to confront the

Villa Dall'Ava vs. Villa Savoye: Innovation through Imitation (drawing by the author).

antithesis between mass production and the pursuit of originality. Parody, with its hyperbolic approach, may risk self-annihilation, as its twisted language could erode inner logic (Rocca 2022). But at the same time, imitation also breaks down hierarchies in architectural development that once hindered progress by hiding subjectivity, providing a platform with blurred boundaries that invites viewers to question and critique the essence of architecture in its current socio-cultural context. This creates a profound impact on postmodern architectural practice, promoting a critical relationship between architecture and society.

However, as imitation and parody advance towards a future of mass production, there is a risk that the original essence will be overshadowed by subjective reproduction, creating a "fake" appearance. To retain the original identity, imitation, and parody must be approached dialectically. Thus, architects' attitudes

towards imitation and parody range from using them as tools for critique and commentary to embracing them as creative, rebellious design approaches. Today, imitation allows architects to deal with controversies of replication and image bombardment, providing a dialectical method to retain the identity of the original.

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Drawing for Documentation, Pedagogy, and Innovation

Zhihang Lin

Architectural Drawings as Recording Media

As a medium for documentation and research, architectural drawing is pivotal in capturing existing architectural conditions and recording observations of architectural history globally. Recent studies highlight three distinct uses of drawing in architecture: "as [a] medium for communication (with clients, builders, etc.), as a medium for design (private 'play'), and as a medium for analysis (the acquisition of knowledge and understanding)."[1]

Palladio's renowned 1570 book *I quattro libri dell'architettura* [The Four Books of Architecture] features woodcut illustrations based on the author's sketches. These drawings precisely articulate Palladio's architectural philosophy, which celebrates the simplicity and purity of classical architecture. Palladio's drawings are invaluable records of now-destroyed or poorly preserved buildings, providing first-hand documentation by a diligent observer who closely studied his subjects.[2] A more contemporary example, *A Pictorial History of Chinese Architecture* by Liang Ssu-ch'eng, represents a milestone in modern Chinese architectural scholarship.[3] This book

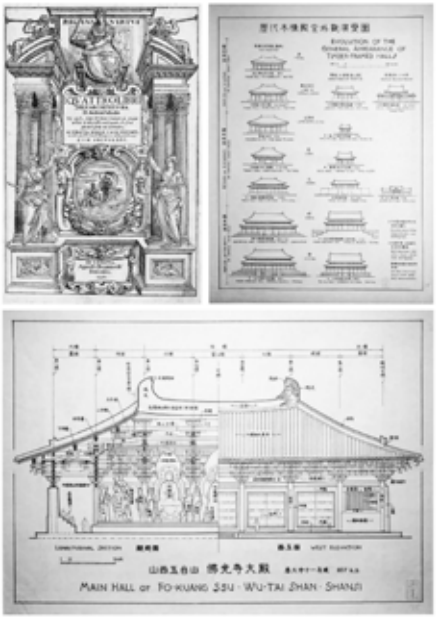
1. Simon Unwin, "Analysing Architecture Through Drawing." *Building Research & Information* 35, no.1 (2007): 101-110, here 102,

2. "The value of Palladio's drawings as a record of buildings now destroyed or less well preserved lies in the fact that, although not a trained archaeologist, Palladio was, unlike man of his contemporaries, a faithful recorder who only rarely allowed his architectural imagination to run riot. […] Most of the drawings are first-hand records of buildings he had studied himself and not, like many drawings contained in Renaissance sketchbooks, second-hand interpretations of the drawings of others. Moreover, as a trained sculptor, Palladio delighted in the intricate detail of a cornice from the Baths of Caracalla with surviving fragments may judge for himself." Donald Emrys Strong, "Drawings by Palladio from the Antique," The Burlington Magazine 102, no. 687 (1960): 265-266, here 266.

3. Ssu-Ch'eng Liang, A Pictorial History of Chinese

vividly portrays Chinese architecture through various visual media, including measured drawings, photographs, models, sketches, and ink renderings. Unlike typical history books that primarily use text, Liang's work prioritizes visual representation, with annotations supporting the imagery. Each architectural example serves as concrete evidence of Liang's account of Chinese architectural history, and his reconstructions of ancient architecture in drawings carry profound conceptual implications.[4]

Drawing has thus long been a foundational tool for documenting historical architecture. It serves not only as a versatile and enduring recording medium for information dissemination but



Examples of drawings as recording media. The cover of Andrea Palladio's 1570 book I quattro libri dell'architettura, and two pages from Ssu-Ch'eng Liang's 1984 book *A Pictorial History of Chinese Architecture.*

Architecture: A Study of the Development of Its Structural System and the Evolution of Its Types (Cambridge: MIT Press, 1984).

4. Delin Lai, "Image, Idea, and the Context: An Analytical Reading of LIANG Ssu-ch' eng's A Pictorial History of Chinese Architecture." *The Architect* 214, no. 6 (2021): 90.

also as a crucial research method for preserving and transmitting cultural heritage to future generations. Architectural drawings reflect the researcher's subjective interpretations rather than strictly factual duplications, providing invaluable insights into the design process, technological advancements, and cultural contexts of their respective eras.

Photographic Representation: Unphotographable Architecture?

Photography is a powerful medium for visually capturing and representing architecture and has become an essential part of architectural documentation. Beatriz Colomina notes that the evolution of photography parallels that of the railway, as they "share a conception of the world".[5] In this analogy, photography relates to architecture as railways do to cities, both playing key roles in mass communication.[6]

Adolf Loos's architectural philosophy, summarised by the concept of "Raumplan,"[7] was described as "unphotographable." Loos argued that drawings and photographs fall short of accurately capturing architecture, seeing architectural drawing as merely a technical language. He stated: "[A] true architect is a man who in no way needs to know how to draw; that is, he does not need to express his inner state through pencil strokes."[8] Loos valued the bodily

5. "Photography was born at almost the same time as the railway. The two evolve hand in hand – because they share a conception of the world." Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge: MIT Press, 1996), 47.

6. "The railway transforms the world into a commodity. It makes places into objects of consumption and, in doing so, deprives them of their quality as places." Ibid.

7. "Raumplan was first proposed by Kulka and further explored as 'space plan,' 'living plan' and 'material plan.'" Ibid, 27.

8 Ibid, 65.

perception of space, believing that architecture is first felt and then concretized. He argued that the effect and experience of a space are impossible to convey in an image: “For photography renders insubstantial, whereas what I want in my rooms is for people to feel substance all around them. […] How can I let the person looking at this photograph feel how good my chair is to sit on, no matter how well-photographed it is?”[9]

9. “I am against the photographing of interiors. Something quite different comes out of it. There are designers who make interiors not so that people can live well in them, but so that they look good on photographs. […] For photography renders insubstantial, whereas what I want in my rooms is for people to feel substance all around them, for it to act upon them, for them to know the enclosed space, to feel the fabric, the wood, above all to perceive it sensually, with sight and touch, for them to dare to sit comfortably and feel the chair over a large area of their external bodily senses, and to say: this is what I call sitting! How can I prove this to someone by means of a photograph, how can I let the person looking at this photograph feel how good my chair is to sit on, no matter how well-photographed it is.” Ibid, 139-140.

While photographs can capture the formal qualities of his architecture, they may overlook the contextual subtleties that inform its meaning and significance. Thus, although photography provides a valuable means of documenting architectural designs quickly and conveniently, it may struggle to fully capture the depth of Loos’ architectural philosophy. Loos’ critical stance on the communicative function of images in architecture encouraged innovative approaches to architectural design research, avoiding conventional solutions and nostalgic imitation. Through careful composition, attention to detail, and a focus on his work’s underlying principles, researchers and photographers may attempt to convey the essence of Loos’ architecture, even if it remains inherently “unphotographable” in its entirety.

Architectural Drawing as Pedagogy

Rob Roggema defines design research as

The main projects of Adolf Loos: “Raumplan” and “unphotographable architecture.” (graphic re-elaboration by the author). Images Sources: Max Risselada, and Beatriz Colomina. *Raumplan versus Plan Libre: Adolf Loos and Le Corbusier, 1919 – 1930.* (Delft: Delft University Press, 1988).

“both the study of design and the process of knowledge production that occurs through the act of design”.[10] Within architectural research, drawing serves as a powerful pedagogical tool for developing essential skills, exploring design concepts, and effectively communicating ideas through sketching and diagramming.
As research deepens on different types of architectural drawings, scholars and architects have progressively synthesized rational approaches to architectural illustration, creating comprehensive resources for pedagogy. For example, Andreas Lechner’s *Thinking Design: Blueprint for an Architecture of Typology*[11] condenses a profound typological understanding into a single volume,

10. Rob Roggema, “Research by Design: Proposition for a Methodological Approach.” *Urban Science* 1, no. 1: 2 (2017), https://doi.org/10.3390/urbansci1010002
11. Andreas Lechner, *Thinking Design: Blueprint for an Architecture of Typology* (Zürich: Park Books, 2022).

presenting 144 examples of classic designs and buildings that reveal underlying categorical typologies despite stylistic diversity. Such systematic compilations provide designers with valuable insights and encourage experimentation with varied forms, configurations, and organizational strategies, fostering creativity and critical thinking in the design process.

Another perspective on tradition and innovation is offered by Winy Mass and Felix Madrazo,[12] whose edited volume includes Aaron Betsky's assertion that architecture should involve "an act of hunting and gathering rather than of inventing," aimed at refining and re-purposing existing resources.[13] By documenting the design process and iterations visually, researchers gain insights into areas for improvement, promoting self-directed research and a culture of continuous refinement.

Similarly, Pyo Miyoung and Kim Seonwook emphasize the use of diagrams to "communicate more clearly within the design process and also to develop the design itself."[14]

Drawing research that holds pedagogical value also investigates how drawings are creatively expressed in an era dominated by visual literacy. For example, Xun Li and Wenjun Zhi's article *From Made in Tokyo to A Little Bit of Beijing: The Impact of Contemporary Urban Record towards Architecture* explores how

12. Winy Maas et al., *Copy Paste: The Badass Architectural Copy Guide* (Rotterdam: nai010 Publishers, 2017).
13. Ibid, 88.

14. "The finished form of architecture is a space that is felt and remembered without any special descriptions or diagrams, and some that leaves behind sentimentality is impossible to be explained by diagrams… there is an increase in information and desires of the city, where architecture is the design subject." Pyo Miyoung, and Kim Seonwook, *Architectural and Program Diagrams 2: Construction and Design Manual* (Berlin: Dom Publishers, 2013), 6.

documentation connects to creativity and provides critique and inspiration for architectural practice.[15] Their analysis highlights the importance of architectural images and underscores their role in examining the relationship between people, buildings, and cities. In this context, architectural imagery becomes a tool for thinking and research, allowing for an in-depth study of urban life. Drawing Architecture Studio emphasizes that while remaining perpetually relevant may be challenging, continuous innovation and advancement foster long-term vitality.[16]
Thus, innovative architectural drawings remain vital in education as they evolve to reflect contemporary needs, integrate digital technologies, and facilitate design exploration. As a pedagogical tool, architectural drawing must continue to generate new ideas, push the boundaries of the discipline, and contribute to the ongoing development of architectural theory and practice.

15. Xun Li, and Wenjun Zhi. “From Made in Tokyo to A Little Bit of Beijing: The Impact of Contemporary Urban Record towards Architecture.” *The Architect* 3 (2019): 94-99.
16. Yang Liu, Research on Architectural Graphics of “Drawing Architecture Studio” in the Age of Graph Reading, (Master’s Thesis, China Central Academy of Fine Arts, 2021), 66.

Diagram Representation in Architectural Design

Architectural diagrams, as intuitive tools for thought and communication, have evolved over decades into a specialized graphic language that conveys spatial information. In the information age, the dissemination of architectural drawings is continually changing, with diagramming now focused on facilitating effective and efficient communication. Architectural diagrams aim to support design-driven research by providing a rational, analytical method of auxiliary representation.

Many architects and scholars have contributed to developing diagram theory. For example, Antoine Picon outlines a brief history of diagram evolution in Western architecture, identifying "non-representational," "abstraction," and "graphic" as the three main criteria[17]. He notes a shift in recent practices from abstraction towards materiality.[18] Similarly, Peter Eisenman uses diagrams to summarize decades of architectural research, presenting his design philosophy in *Diagram Diaries*[19]. Starting with the "nine-square grid" diagram for analyzing historical context, Eisenman introduces "internality" and "externality" into architectural design.

Rem Koolhaas, a prominent avant-garde architect, has also advanced innovative ideas about spatial imagery. His book *S, M, L, XL*, co-authored with Bruce Mau, combines architectural projects, photographs, and sketches organized by scale. The development of image-driven approaches brings new possibilities for spatial transformation and innovation. In the *Seattle Central Library* (2004), Koolhaas uses deconstructive analytical diagrams to design a three-dimensional spatial organization. His diagrams effectively convey the library's flow, the interaction between virtual and physical spaces, and the concept of "uncertainty" as a blurred boundary between inherent and virtual spaces.[20] Diagramming, as a

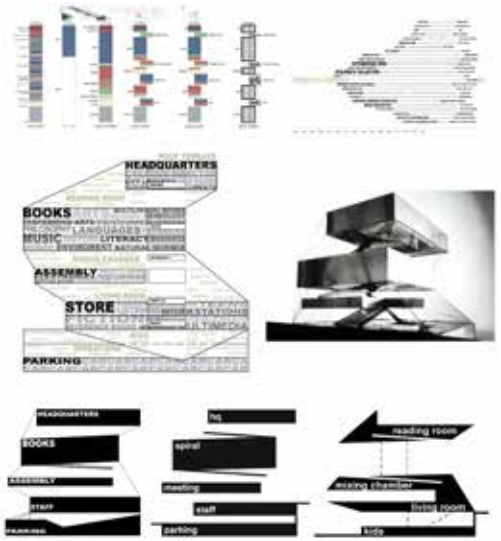
17. Antonie Picon, "Architectural Diagramming: From Abstraction to Materiality," (in Chinese and English), in *Time + Architecture* 5 (2016): 14-21.
18. "[…] from abstraction to materiality, or rather from abstraction to an inextricable blend between the abstract and the concrete, and between the conceptual and the material, which no longer appears as opposed one to another: such is the general shift revealed by recent diagramming practices in architecture." Ibid, 20.
19. Peter Eisenman, *Peter Eisenman: Diagram Diaries* (London: Thames & Hudson, 1999).
20. "Seattle Central Library / OMA + LMN," ArchDaily, Accessed February 15, 2024, https://www.archdaily.com/11651/seattle-central-library-oma-lmn

design method, transforms architects from mere creators to controllers, allowing them to communicate the essence and function of buildings through a visual medium.
Eisenman and Koolhaas offer complementary perspectives on diagrammatic design. Though they approach program creation differently, throughout the design process, both use diagrams as tools for architectural generation and as representations of core design concepts. Diagrams naturally emerge as a means of resolving spatial contradictions and advancing architectural thought.

Towards a New Diagrammatic Translation in Architectural Practice

With the advent of the digital age, architectural design is continuously enriched by new media and digital technologies, which are reshaping both design methods and outcomes. Digital diagrammatic representations now offer options beyond traditional drawing techniques, expanding possibilities for architectural practice.
Stan Allen, considered one of the foremost advocates of diagrammatic representation in contemporary design, uses diagrams to harness digital capabilities for data gathering and analysis.[21] Similarly, Lars Spuybroek, focusing on interactive architecture, works in machining architecture, where

21. “Stan Allen, the principle of the avant-guarde firm and formerly the partner of Field Operations with Jim Corner, is one of the most active promoters of diagrammatic representation as an imperative for the contemporary design. Experimental design approaches in Stan Allen’s work rely on diagramming as a means of representation fully deploying digital capacities for data collection and analysis, taking into account the conceptual formulae of space-time, while preserving the original specificity and space-making instrumentality of the map.” Maria Fedorchenko, “Modes of Visual Control: Stan Allen’s Diagrammatic Cartography of Spatial Production,” *96th ACSA Annual Meeting Proceedings*, Seeking the City, (2008): 496.



Concise and effective diagrammatic representation of the Seattle Central Library by OMA (graphic re-elaboration by the author).

design spaces are informed by research data on human interaction.

Another insight comes from The Why Factory, led by MVRDV, which explores the tactical progression of architecture between tradition and innovation since architects compete fiercely for innovation while freely and heavily appropriating designs from the past.[22] In the chapter "*Game of Clones*", The Why Factory presents a collection of projects organized as a board game with numerous drawings and diagrams, sparking reflection on the role of iconic architecture in shaping future cities and exploring "which ready-made icons can best absorb new uses and function at multiple scales."[23] Such

22. Winy Maas et al., *Copy Paste: The Badass Architectural Copy Guide* (Rotterdam: nai010 Publishers, 2017).

23. "This challenging exercise, designed by T?F tutor Felix Madrazo in boardgame format, will help you reflect on the role of signature architecture in forming future cities, as well as train you in the skills of fabricating a concept narrative, programmatic adaptation and design variation across scales. […]

diagramming techniques speculate on the future of architectural representation, suggesting new directions for research. Increasingly, architects recognize the need to broaden their understanding of their practice through the study of varied examples, similar to approaches in other creative disciplines.[24] In the context of globalization and digitalization, this expanded perspective strengthens architectural graphic language and advances design-driven research.

Conclusion

This paper underscores the multifaceted role of architectural drawing in design-driven research, tracing its development from traditional documentation media to sophisticated pedagogical and representational tools. Historical and contemporary examples show that drawing provides architects with a powerful means of documenting, analyzing, and communicating design concepts. In addition, integrating photography, diagrammatic methods, and digital technology has broadened the scope of architectural drawing, enabling a deeper exploration of spatial relationships and phenomenology. By fostering new visual languages and methodologies, architectural drawing remains essential to advancing theoretical discourse and promoting design innovation in an increasingly interconnected world.

The aim of the game is to find which ready-made icons can best absorb new uses and function at multiple scales, to create a city without resorting to anonymous, tired urban types." Ibid, 206.
24. "Apart from particular moments in the history of architectural polemic when it was implied that architects should work without reference to buildings from the past (during 'hard-line' Modernism, for example), it has generally been recognized that architects, as do artists in other creative disciplines, can and should extend their understanding of what it is that they do by studying examples." Ibid, 104.

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Untying the Knots of Objects
Francesca Monteleone

To start thinking about what architectural research, specifically design-driven research, is and what it should concern, there is the need to recall what architecture is in its essentialness: the production and modification of space.[1] The production of space is a subject that can be unveiled through a design approach, but that design can be unpacked and analyzed to focus on the process[2] of this configuration. Here lies the fading border between design and design-driven research. The output of design-driven research should not be the design in itself, namely, not completely.[3] Otherwise, it will turn into a self-referenced system where the input is the same as the output.
So, how can design-driven research tackle the question of architectural research without producing a design? Recalling Jeremy Till's approach in the definition of architectural research as "the processes that lead to the building, in the representation of the building, in its use, in the theories beyond the building, in the multiple interpretations of the building

1. "To grasp space, to know how to see it, is the key to the understanding of building…The experience of space, which we have indicated as characteristic of architecture, has its extension in the city, in the streets, squares, alleys and parks, in the playgrounds and in the gardens, wherever man has defined or limited a void and so has created an enclosed space…. That space – void – should be the protagonist of architecture is after all natural. Architecture is not art alone, it is not merely a reflection of conceptions of life or a portrait of systems of living. Architecture is environment, the stage on which our lives unfold". Bruno Zevi, *Architecture as Space: How to Look at Architecture*, trans. Milton Gendel; ed. Joseph A. Barry. (Da Capo, 1993), 23-32.
2. Jeremy Till, in his explanation of what is architectural research, states as the objective of an architectural research the investigation on the processes that led the design. Jeremy Till. "Architectural research: Three Myths and One Model," *Collected Writings*, 2007. Accessed February 06, 2024.
3. In the same work, Jeremy Till points out the incompatibility of the research activity in the design of a building as an outcome of a research. Jeremy Till. "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007.

and so on".[4]
The production and modification of space is not extinguished in the object as a building. The production of space is the product of many forces that push to the creation of an object.[5] Such an object can be recognizable as a building, a piazza or a part of a city. What gives this object an architectural relevance is the composition[6]

4. Jeremy Till, "Architectural Research: Three Myths and One Model" *Collected Writings*, 2007.
5. In the same chapter previously mentioned, Zevi addresses the plurality of values that defines a building, therefore the building emerges as a sum of different influxes. Bruno Zevi, *Architecture as Space*, 23-32. Jeremy Till also underlines the interdisciplinarity function of the buildings. Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007.
6. "The history of architecture is primary the history of spatial conception. Judgement of architecture is fundamentally judgement of the internal space of buildings." Bruno Zevi, *Architecture as Space*, 32. Zevi, in this work, stresses the importance of the conception and observation of the space as a product of architecture in which the judge is not asked to judge the aesthetic but the quality of space of the specific architecture. The domain of architecture is internal space, while the one of

of the parts that can be unveiled through research.
According to Till, the false myth of interference from other disciplines has to be erased to validate architectural results.

urbanism the exterior space. In this specific context, I consider relevant both qualities of spaces in terms of spatial conception that are originated through a multi-layer process that needs to be explained. Consequently, in my opinion, agreeing with Zevi, what defines the quality of such space is the composition to be conceived as the overall balance of the elements that compose the space. Balance therefore can be derived from the harmony of all the elements that albeit the same, are always differently matched: "The same general type of face is the property of every individual: nose, mouth, forehead, etc., and also the same general proportion between these elements. There are millions of countenances constructed on these essential lines; nevertheless all are different: there is a variation in the quality of the features and in the relationship which unites them. We say that a face is handsome when the precision of the modelling and the disposition of the features reveal proportions which we feel to be harmonious because they arouse, deep within us and beyond our senses, a resonance, a sort of sounding-board which begins to vibrate." Le Corbusier, *Towards a New Architecture*, trans. Frederick Etchells, (Dover Publications, Inc, 1986).

However, “The building as building reduces architecture to mute objects. These in themselves are not sufficient as the stuff of research inquiry. In order to move things on, to add to the store of knowledge, we need to understand the processes that led to the object and to interrogate the life of the object after its completion.”[7] Therefore, such modification of space is not standalone but is embedded in its context, elevated by its composition, and linked to a certain vision of such space that is derived from the contamination. In this sense, it is possible to question the object and grasp from other disciplines in a reverse way, not to validate a theory[8] but to explain and untie the knot that has produced such space. Starting from what has been there, the reality is that it is possible to explain what has been done and the design process.

By unveiling the construction of the space, the research process has the possibility and responsibility to criticize such a process.[9] Untidying the research from the practical production of the object, the design, the research assumes the broad possibility of criticizing and questioning the reality and pushing even

7. Jeremy Till, “Architectural Research: Three Myths and One Model,” *Collected Writings*, 2007.
8. “There is a terrible tendency for people, as soon as they start talking about their work, to refer to one or another theorist (usually not an architect) and validate what they were doing by saying, Well, it's like this' and 'It's like that”. Leon Van Schaik, Richard Blythe, “What If Design Practice Matters?” In Design Research in Architecture. An Overview, ed. Murray Fraser (Ashgate Publishing Company, 2013), 54.
9. As reported by Alessandro Rocca in his paper “Research vs. Design. A Favorable Conflict”, architecture can be conceived as a tool that submit to society to provide efficient results but conceiving the discipline only as a mere instrument empties architecture from its theoretical and artistic debate that arise critics and provide innovative results. Alessandro Rocca, “Research vs. Design. A Favorable Conflict”, in *Comparison: CA2RE | CA2RE+ Conference for Artistic and Architectural Research, Book of Proceedings,* ed. Fabrizia Berlingieri and Francesca Zanotto (Siracusa: LetteraVentidue, 2021), 43-50.

the applied research into the field of possible to direct the production on what "it ought to be".[10] Everybody can read a book, but only somebody can read a plan. Designing a space means establishing and ordering paths and movements that the users of the space experience unconsciously.[11] Having the power to unpack these ordering principles and explaining them in a more communicable manner in the form of a text helps to gain awareness of the surrounding space, producing understandable knowledge at a large scale.[12] Architectural research is therefore dependent on the relationship that is established with other disciplines in questioning what lies beneath the production and the modification of space, but it is independent in the research process that led to the explanation of such space and in the possibility of independently define the quality of such space, questioning current reality and discussing future visions. To fulfill such goal, there are some tools that come to our aid to help in managing, deepening, and communicating those architectural questions.

10. Herbert A. Simon quoted in Alessandro Rocca, "Research vs. Design. A Favorable Conflict".
11. The experience of space generates our unconscious "spatial intelligence", as Leon van Schaik refers to in Leon Van Schaik, Richard Blythe, "What If Design Practice Matters?" In *Design Research in Architecture. An Overview*, ed. Murray Fraser. (Ashgate Publishing Company, 2013).
12. If, as stated before, the objective of the research activity is to question and even criticize the reality, then it is undoubtful that this knowledge has to be shared even with external people. As pointed out by Rocca, in some disciplines the research is addressed to external targets, in other fields the research is mainly addressed to scholars, "Architecture acts in an intermediate space, where the clarity of intention often exceeds the design's quality". Communication is therefore crucial in reaching the target. Alessandro Rocca, "Research vs. Design. A Favorable Conflict", 46. Moreover, as stated by the EAAE Charter on Architectural Research, research should produce a communicable and useful output. European Association for Architectural Education, EAAE Charter on Architectural Research.

The Forms of Reading

If the research activity is embedded in the analysis and disclosure of the process that lies behind the architectural object, then the form as the outcome of the object is our starting point. Consequently, one of the first spontaneous actions that is undertaken is to read the form of the object.

The form of the object is a layered space where each layer refers to a certain influx. As stated above, the actions of architectural research are in charge of unveiling the mutual influences that different inputs bring[13] to explain the process of development. Therefore, the initial activity is to start reading and scanning those interferences. Through the tool of reading, it is possible to classify different sets of offers, narrowing down the focus to comb out the knots of a research topic. By this mixture of thoughts, it can be possible to track justifications and explanations of certain design activities that may fall into interdisciplinary publications, too, as far as they are powerful and useful to track the reality back to the project.

Intuition can be everywhere, and the logic of the readings stands out in the author's coherence and in the unique narrative path constructed to explain the chosen topic. The reading activity expresses itself in the choice of adequate reading time in every aspect and in the forms of reading used to deconstruct the content, such as schematic reading,

13. “Although architecture has its own corpus of specific knowledge, it needs to engage with other disciplines to create new knowledge and synthesis. In that interaction, architects contribute their ability to act in complex- non-reductive particular environments. By embracing aspects of rationality and intuition, objectivity and inter-subjectivity, technique and emotion, logic and creativity, architectural research enriches the understanding of the world. Architectural research is therefore fertile for trans- and inter-disciplinary endeavors and forms an essential part of these endeavours”. European Association for Architectural Education, EAAE Charter on Architectural Research, 3.

summary reading, deep reading, scan reading, etc. There is no unique way to approach and read a book since there are multiple ways in which books answer our questions, connected to the tool in which we approach the text. In all its forms, the reading activity is the main medium through which we order, categorize, choose, and collect the research material, which is then elaborated and matched together. In architectural research, these forms of reading are also expanded to and through the space,[14] reading and therefore recognizing the symbols and elements that give identity[15] reading and therefore recognizing the symbols and elements that give identity to such space, which will be then elaborated in the development of the research. The extension of the reading activity towards the space is deeply rooted in the author's point of view.[16]

14. If according to Zevi, the character of architecture is the spatial conception and its judgement is a judge on it, then what it is performed is a critical reading of the space. Bruno Zevi, *Architecture as Space*, 23-32.

15. "The identity of architecture comes down to formal constants perceived through endless examples, each materializing in a different way". Carlos Martí Arís, *Variations of identity. Type in Architecture.* (Éditions Cosa Mentale, 2021), 36. As stated by Martí Arís, the identity of architecture relies on the elements that compose the architectural object. By a critical reading of each object, it is possible to decompose and identify all the elements and the composition process lying beneath.

16. As reported by Alessandro Rocca in "Endogenous/exogenous, the two hemispheres of architectural research", in the architectural research field, a peculiar role is assumed by the personal perspective of the researcher and this aspect is one of the keys of success of great research. Therefore, the original point of view, personal elaboration of a topic and self-validation process is crucial in this field and reflect the architect's forma mentis. Alessandro Rocca, "Endogenous/exogenous, the two hemispheres of architectural research", in *CA2RE / CA2RE+ Collective Evaluation of Design Driven Doctoral Training. 2 Evaluation Of Design-Driven Research*, ed. Edite Rosa (Main Editor), Matthias Ballestrem, Fabrizia Berlingieri, Tadeja Zupančič, Manuel Bogalheiro and Joaquim Almeida. (Edições Universitárias Lusófonas COFAC / Universidade Lusófona do Porto, ARENA (Architectural Research European Network Association), EAAE (European Association for Architectural Education), ELIA (European League of Institutes of the Arts), 2022),

It is the peculiar personal attempt at reading this space that generates differences. The object of study is always the same in its immanence, but the critical interpretation of the space through its reading produces new ways of explaining reality.[17] Robert Venturi has given a perfect example in *Learning from Las Vegas*, where he gave value to one of the most commercial, popular, and heterogeneous landscapes of the world, finding architectural value to the everyday object by analyzing the relationship of the elements, observing and questioning the reality through an architectural reading of the context. "Learning from the existing landscape is a way of being revolutionary

167-171.

17. The goal of critically interpret the reality in new ways and forms, at this research stage, is strictly linked to the quality of originality exposed in the EAAE Charter on Architectural Research and, in my opinion, every starting point of an architectural research relies on an original critical reading of the space. European Association for Architectural Education, EAAE Charter on Architectural Research.

The forms of reading: the space and the text. (Drawing by the author).

for an architect. Not the obvious way, which is to tear down Paris and begin again, as Le Corbusier suggested in the 1920s, but another, more tolerant way; that is, to question how we look at things".[18] It is the architectural point of view that makes the difference, and it is crucial to push forward the limits of architecture. Another example stands in Rem Koolhaas' *Delirious New York*, tracking the genesis of the skyscraper by looking into a new invention: the introduction of the lift. He combined this invention, reading the space where it was inserted, explaining the birth of a new typology.[19] Therefore, it is possible to read books, to read space, to read the space in the books. This combination of different forms of reading constructs the basis of the future personal elaboration of the research. What is crucial is to keep an architectural point of view, especially of what surrounds us.

18. Robert Venturi, Denise Scott-Brown, Steven Izenour, *Learning from Las Vegas*. (The MIT Press, 1977), 3.
19. Rem Koolhaas, *Delirious New York*. (The Monacelli Press, 1994), 82.

The Need for Drawing

The activity of reading is a silent analysis to approach a topic that broadens the mind to arrive at a concept. However, when reading a book or a text, proof of understanding the content relies on drawing diagrams and schemes for ordering and understanding information. It is the power of drawing. Drawing constitutes a fundamental tool through the research to construct and deconstruct connections and thoughts that become the research.

"What most nearly fulfills a conception is a freehand drawing executed without resolving the continuity between thinking and figuration, so that the line resembles not so much the thing that wants to be contained as the thought to which it refers. In freehand drawing the skein of thought, with its dislocations and accidents draws

from the line solid form. The sketch, more than any other drawing, is able to speak instantly with a single logic, because through its paths the hand imitates the idea with voluntary omissions".[20] By the act of drawing, we prove our ideas, and by hand drawing, we extend the limit and the space of our minds, continuing the thoughts in a material form to be revised, corrected, and eventually communicated. "Thought cannot travel through spaces; the hand has to show the secret of the labyrinth".[21]

Drawings have the power not only to help to reason on what has been read and observed, but they have the power to show off these thoughts.

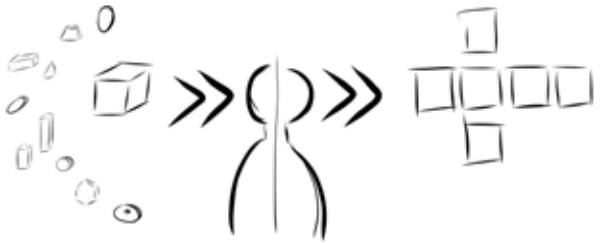
Elaborating personal drawings can help construct and communicate a personal logical elaboration. It is not a case that one of the best examples of explaining through drawing is a PhD thesis of Peter Eisenman,[22] where his own reasoning is unveiled through the drawing, and this author does not just realize these drawings; they correspond directly to the author's mind and manifest his way of reasoning in a concrete form. Eisenman has read the context and the space, and he has given us back its own construction of such space and, consequently, of a process in an immediate way through the diagrams.

Drawing is also essential in architectural research because of the selection of elements shown. By weighing the elements that are shown and represented in a drawing, it is possible to explain a concept, design, or idea.

This is the case of the work on the façades of Farshid Moussavi and Michael Kubo.[23]

20. Massimo Scolari, *Considerations and Aphorisms on Drawing*, ed. and trans. James S. Ackerman, (Edizioni Stella, 2007), 7.
21. Id., 13.

22. Peter Eisenman, *The Formal Basis of Modern Architecture* (Lars Muller, 2006).
23. Farshid Moussavi and Michael Kubo, eds., *The*



The extroverted, reasoned activity of drawing (by the author).

Their drawings did not faithfully represent the façades of the chosen buildings, but they homogeneously redrawn parts of them, choosing specific elements to focus on. They used drawing as a double check and as a presentation of evidence of reasoning. Therefore, the crucial aspect of drawing is to be communicative, easily understandable and representative of a precise idea. “Form becomes figure when the idea abandons it”.[24] An image fixes a moment in time, frame an aspect of reality, a drawing has the power to interpret a selected portion of reality, continuing to inspire even after decades. That’s why we need drawings in architectural research, to represent a process, to order a thought, to explain and validate a personal portion of reality. If reading is mainly an introverted activity, from the world to the mind, drawing is extroverted, from the mind to

Function of Ornament. (Actar, 2006).
24. Scolari, Op Cit., 12.

the world. Drawings show off and expose minds and processes.

The Tool of Writing

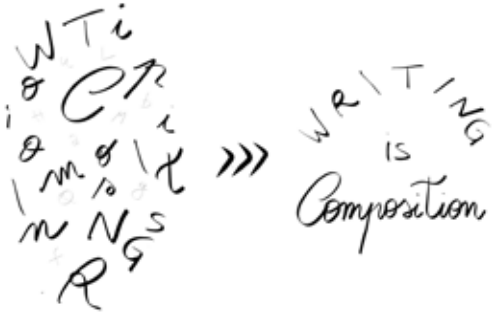
After having elaborated a personal concept, it is necessary to communicate it.[25] In a research work, undoubtedly, the tool used is writing. Writing is the Mouth of Truth; it reveals to what extent a specific topic is known and expresses the capacity of the personal elaboration and collection of the different studied concepts, revealing everyone's personal style. Concepts may be copied, but the style of writing is unique.
In the research activity field, some requirements and regulations must be respected when writing the paper and the research book.[26] However, the organization of the content can make a real difference. When approaching a book, one of the first things to verify if it matches the chosen topic or field of interest is reading the index. The index is the structure of the book, and it corresponds to what will be deepened. Each index and chapter word used refers to a specific topic in the book. This reflects how the author has decided to organize and present his or her work. The index is a sort of in-between derivation from a drawn diagram and the prelude of the writing activity. The index is not always written before the text, but a similar structure of the content is the input of the writing activity. The writing activity is like composing a puzzle; we have all the pieces we need, lay them on the table, and compose them to make a homogeneous product.
However, rather than a puzzle, a relevant aspect of writing is its power of selection. One of the major architectural firms, OMA, is famous for its extensive use

25. Ref. note n.12.
26. The reference here is to the specific standard of writing required (i.e. Chicago Style, etc.) for each University and specialized Journals.

of polystyrene for building models, and models are so spread in the office to characterize it.[27] Well, not all those models are then published, and not all models end up being real buildings; architects choose some of them and develop or abandon others. In writing, the activity is quite similar; not every concept or drawing we make to learn and think about a topic has the power to be inserted, and we select those we need according to the narrative.

In architectural research, not only is writing used to explain and communicate the product of the research, but it can also be a method of self-proving, ordering thoughts, and checking the consistency of the work.[28] It is in architectural research

27. The reference is to the Yaneva description of OMA office reported in Alessandro Rocca, *Totem and Taboo in Architectural Imagination.* (LetteraVentidue, 2022), 72.
28. The reference is to Yaneva description of the use OMA does of books: “We also spend a lot of time on making books, which is also part of the



Writing is Composition.(Drawing by the author).

that writing unveils a unique feature: its powerful clearness of communication when it marries drawings. Let us go back to Eisenman's work.[29] The diagrams reflect his mind and the text perfectly matches the drawings. They do not overlap; they complete each other. If a drawing can immediately unveil a concept, writing can explain it, making it recognizable and unambiguous for everybody. The sapient combination of the two reaches the goal of coherence. Writing activity is the composition exercise carried out by words and texts rather than by lines and figures. It is the final step of the thinking. By writing, the concepts and reasonings are checked, tested, and finalized, ready to be shared with the readers.

presentation materials. There is also an element of clarifying things four ourselves" Albena Yaneva, Made by the Office for Metropolitan Architecture. An Ethnography of Design. (010 Publishers, 2009), cited in Alessandro Rocca, *Totem and Taboo in Architectural Imagination*. (LetteraVentidue, 2022), 76.

29. Peter Eisenman, *The Formal Basis of Modern Architecture.*

The Method of Comparison

If reading is the first activity performed in research work, reasoned through drawing and communicating by writing, the comparison activity crosses these tools. Comparison tries to unveil mysteries by observation and reasoning.

Comparison activity can be performed by looking at what someone else has done to highlight similarities and differences. In this sense, this is the very first step that is undertaken by an early-stage researcher to look at what others in the same field have done, to learn from them to avoid replicating the work, and to start from that point. Therefore, comparison can be a starting point; it places the research at a certain point in time to continue. In this sense, the comparison is contemporary an introverted and extroverted activity: I observe what others have done (inward),

I think about what I want to do (outward), and then compare the strategies. Comparison, however, can be done a posteriori on objects that are even distant in time and share the same principles. Carlos Martí Arís[30] made the comparison activity the core method of his research, sealing the definition of Typology in architecture. One peculiar aspect of this work is the dichotomy of history-typology since this relationship is at the very core of the comparison activity: typology is ahistorical, but history is crucial in typology to understand its evolution.[31]

30. Carlos Martí Arís, *Variations of identity. Type in Architecture.*

31. "History and typology emerge as two complementary aspects; while history illuminates processes of change, typological analysis reveals what stays the same during these processes. Furthermore, each of these aspects requires the other, as only change can shed light on what persists. As posed by Aristotelian theory, a thing's essence may be established through the changes it experiences. Essence, then, can be interpreted as the set of powers inherent in a thing, while changes could be considered the evolution of these powers. As a result, types, as architecture's essential conditions, can only be understood through their history." Martí Arís, *Variations of identity. Type in Architecture*, 37.

Therefore, the comparison is historical, but history is crucial in understanding the context and the differences of the objects compared.[32]
Comparison emerges from multiplicity, plurality, or at least the presence of a couple. To make a comparison, it is mandatory to have at least two terms of reference that can be different objects or the same object doubled, namely the same object through time. This is a crucial aspect of comparison because it forces and obliges us to look out, to look forward, to think deeply about a single aspect, and to make relationships. At this moment, we establish relationships, and an argument has been understood so much

32. As stated at the opening of the paper, architecture is dependent towards other disciplines that help to explain its hidden processes. Typological variation is a matter of architecture in itself, but it is the result of social, economic and historical changes.

that it becomes manageable because what has been unveiled is the principle that lies beneath it.
As far as there are multiple terms of comparisons, there are several outputs comparison can highlight, even contrasts. It is possible to make the comparison by remarking on the differences and the friction points of two or more objects rather than the similarities. This is a way of approaching a topic by inserting it in a debate with an opposite opinion. The projects of Forte Quezzi Housing and Begato Dams develop the same topic of social housing complex, establishing specific relationships with the context in two diametrically opposite ways: harmony (the first) and dissonance (the latter) with the surroundings.[33]
This is a comparison that aims to find differences. Each form of comparison implicitly or explicitly highlights differences, even when we are seeking similarities; otherwise, we are in the field of equality. With those differences, it is possible to raise questions, pose doubts, and start a debate because this process is not a confirmation of the possibility but a statement of a problem. Then, the main goal and start of research is to pose questions, which is why comparison is one of the best methods.

33. Alessandro Rocca, "Epica e beffarda. Gli ultimi giorni della diga" in *Selve in città* (Mimesis Edizioni, 2022), 172-179.

Conclusion

Questioning the space is not an immediate activity; all these tools help to clarify the process of construction of the objects, provide answers, and raise questions. I think that in this ambiguous relationship of question-answer with the design practice lies the purpose of an architectural research activity, able to expand its limits out of the building up to the architectural object, going back and forth from asking and answering, as well

as the comb goes up and down to untie a hair knot. In the end, the knot is untied, but that does not mean that all the answers have been provided; instead, the tangled skein of the object has been unraveled, and maybe some of its wires can lead to other knots. What is crucial is the process undertaken and the ability always to keep an architectural point of view. The design practice provides answers; the research practice raises questions.

Research and Design: different approaches (by the author).

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Dragons, Las Vegas, Metaphors, and Readymade

Alessandro Pasero

"On the other hand, architecture is treated as an autonomous discipline, beyond the reaches or control of outside influences, including those of normative research methodologies. This leads to the separation of architecture from other disciplines and their criteria for rigor. Self-referential arguments, be they theories of type, aesthetics or technique, are allowed to evolve beyond the remit or influence of accepted standards, and research into these arguments is conducted on architecture's own terms. The myth that architecture is just architecture, founded on the twin notions of genius and autonomy, leads eventually to the marginalization of architecture. A knowledge base is developed only fitfully and so architecture becomes increasingly irrelevant and, ultimately, irresponsible" (Till 2007, 5).

Architecture is a relational body of knowledge that – as part of the built environment – intertwines itself with many other types of sciences. If the natural sciences are concerned with how things are, on the other hand, design is concerned with how things ought to be (Simon 1969). It is well known that designing is not so much related to the past but to creating possibilities for the future. It is about projecting ideas into the future, exploring possibilities, and developing spatial qualities; as such, it creates a holistic view and develops future possibilities (Jakimowicz 2009). And this is done by projecting into the future through methodologies typical of architecture: architectural practice has the raw data on which architectural knowledge is founded, and academia can release this potential through research. This is also the reason why multiple truths can be explored through design-driven research: if academic research in the architecture design field is both an endogenous and exogenous act (Rocca 2022, 167), then it is important to

stress the relevance that the researchers themselves - with their fetishes and biases – carry along the research project.
In such a complex and varied framework, design-driven research must abandon three myths that have evolved around architectural research and that have held back the development of research in our field, according to Till (2007). The most important one is considering architecture a self-referential discipline with strong boundaries and without considering the broader context. In 2006, Jeremy Till curated the English pavilion at the Venice Biennale of Architecture through research on the architecture of a specific city: when he chose the people of this team, the researchers from different disciplines concluded that he – as an architect, on his own – could not have managed to tie all the dimensions of architecture together. Research in architectural design, therefore, assumes a multi-headed form, a mythological figure (fig. 1), capable of benefiting from the shared knowledge of architecture as a practice but at the same time addressing this expanded field that Till refers to.
Alessandro Mendini (architect, designer, artist, author, among many other things) sees himself as a complex and multi-layered figure who needs to do many things at once in order to address contemporary design culture. Maybe design-driven researchers should be dragons, too. To take into account the expanded field means also looking at things that are traditionally overlooked or looking at famous things from different perspectives. It is a process of non-stop learning. In *Learning from Las Vegas* (Venturi, Scott Brown, and Izenour 1977), the authors approach a topic and a subject that was not part of the architectural debate at the time: this landscape is not designed (by architects or famous ones) and is not an “interesting topic” for their contemporary community, used to display

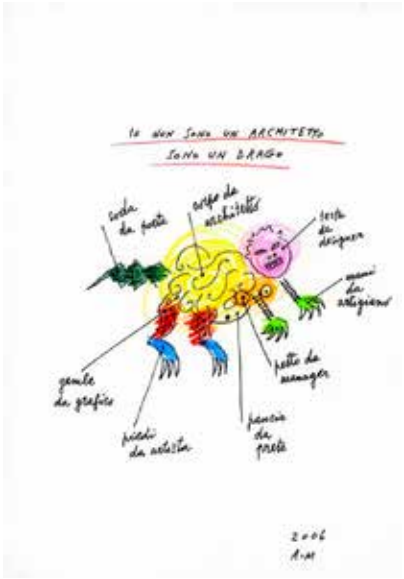

Fig. 1. Alessandro Mendini, Io non sono un architetto. Sono un drago, 2006.

modern and formal architecture as the central topic of architectural debate. Learning from the existing landscape is a way of being revolutionary for an architect. Not the obvious way, which is to tear down Paris and begin again, as Le Corbusier suggested in the 1920s, but another, more tolerant way; that is, to question how we look at things. "[…] Architects are out of the habit of looking nonjudgmentally at the environment because orthodox Modern architecture is progressive, if not revolutionary, utopian, and puristic; it is dissatisfied with existing conditions. Modern architecture has been anything but permissive: Architects have preferred to change the existing environment rather than enhance what is there" (Scott Brown, Venturi, and Izenour 1977)

The research has several tools to study the subject, which typically belong to the architectural processes: survey and fieldwork, photographic reportage,

mapping, and redrawing in order to delineate a taxonomy (more than one). In the end, considerations and speculations. Sometimes images are not shown, and yet they are there in our collective memory (considering architecture a shared knowledge), and it is possible to say that that is why images are interesting if they are investigated: in their work, Scott Brown and Venturi use together images and hand drawings, mapping and diagrams in which they overlap layers of interpretations, going beyond photographs themselves.

Another important "tool" is the comparison (Scott Brown, Venturi, and Izenour 1977): by making comparisons with other landscapes, monuments, and architectures (such as iconic deserts, Roman ruins and so on), they make Las Vegas fit into the architectural narrative. To read this book means to read a way to learn another story, parallel and opposed to one of the modernist masters: by being ironic and polemical at times, this design-driven research applies architectural pedagogy to something that has never been considered "worthy of studying" before. As they state at the end of the introduction: "There is a way of learning from everything" (fig. 2). In 1976, at MoMA, they tested this theory through the project of the exhibition Signs of Life, symbols of the American city: if it is possible to "learn from everything" this exhibition tries to do so, showcasing "the ordinary and the ugly" of American cities landscape and – by textual means that refer to the aesthetic of comics – addresses origins and context of every element, in a series of big tableau vivant. Very similar to a book (is this exhibition a catalog itself?), the exhibition made the audience question, read, and learn from the 1:1 reconstruction of their neighborhoods that are often overlooked. If images and visual research can be such powerful

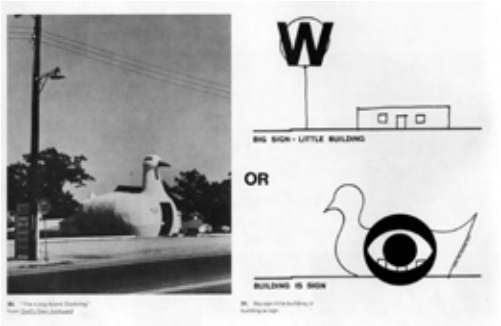

Fig. 2. Venturi, Robert, Denise Scott Brown, and Steven Izenour. *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form.* (Cambridge, MA: MIT Press, 1977).

tools of research, it could be possible to argue that drawings – considering them the first and most vital non-textual tool in architecture – can be themselves a medium for analysis, acquisition, and communication of knowledge. Drawings – and re-drawings – are both pedagogical and research tools through which reality can be investigated (Rocca 2024), but more than that, they are also projects and researches by themselves – considering the paper architecture production from the '60s, from the Fun Palace to the Radical Design Movement, or also the more contemporary way of speculating on the reality by non-built projects or lost competitions drawings, such as the iconic OMA non built proposal for the "Très Grande Bibliothèque" Library competition (Paris, 1989). By drawing, is it possible to make a choice and a selection of what to represent (and what not) that would not be possible through photographic means: in *Victims*, Hejduk

constructs a narration of architecture made of characters (architectures) out of context, whom image is a vague and "sketchy" shape (Hejduk 1985); in *Pet architecture* the surroundings are never represented in a such a way that all the focus is on the details and human scale of the small object in question and its materiality (Atelier Bow-Wow 2001); in *Typology* the architectural objects are simplified in order to be classified: synthesis is necessary to establish a taxonomy (Christ, Gantenbein and Easton 2012).

All of these mentioned researches work through (re)drawing as an act of investigation of reality. The idea of a "series" in a drawing production is a precise tool that makes the research objects comparable and part of "the same story", not only for the sake of comparison itself but also to strengthen a theory or a precise architectural position. To investigate architecture through drawings means to learn the elements that feature themselves in a space, site, or architecture in question. Afterward, the creative act, the design, is here a form of storytelling in which alternative narratives might be imagined (Till 2020); the narration is often built up through a systematic way to approach drawings (fig. 3). If the curatorial act (and by that it is intended the choice) of representation in drawings refers to "what" draw and what not, one could argue that in the process of writing, the curating does not only refer to its content but also to the structure and its management.

The operation of writing itself and structuring the text is an act of research. Regardless of the type and theme of the research, the first instance of writing is an endogenous act of projection, referring to a personal inclination. Beatriz Colomina mentions this reflection on the first page of *Privacy and Publicity, Modern Architecture as Mass Media* (1994) in

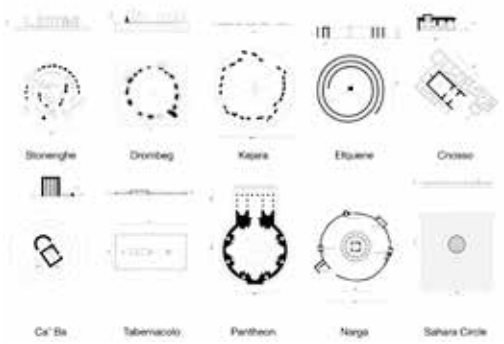

Fig. 3. Research on the space and use of sacred architecture, or hieron, in different times and places (plan, section, ritual). Excerpt from “No-time fence”, Milan and Lanzarote, 2018-2019. (Drawings by the author).

which - before addressing the subject of the research - she first explains to herself and then to the public the construction of the work, the architecture of the book itself: “This book has been with me for a long time. I don't know exactly when it all started, but I do know when I first wrote something that one way or another has ended up here. It was 1981. New York. I was writing in Spanish and then translating into English. When, soon after, I tried my hand at English, I was shocked at the extent to which not only the way I was writing had changed but even what I was saying. It was as if with the language, I was also leaving behind a whole way of looking at things, of writing them. Even when we think we know what we are about to write, the moment we start writing, language takes us on an excursion of its own. And if that language is not ours, we are definitely in foreign territory. Lately, I have started to feel that way about Spanish. I have managed to

become a foreigner in both languages, moving somewhat nomadically through the discourse on an unofficial itinerary. Traces of this complicated movement can be found throughout this book. The text is somehow suspended between the languages and times in which it was constructed" (Colomina 1994).
Structuring a text means designing a hierarchy, a theory, and an architecture for the content: the order of it and how it is presented are essential to the way the research is understood and, therefore, shared. In the case of Colomina, the book is organized through chapters that are named as either architecture elements (city, interior, museum, windows) or media of it (archive, publicity, photography); the index itself is a manifesto of the book: it addresses modern architecture history as a mass media and in its relationship with media themselves (Colomina 1994). The order of the chapters is essential for deep comprehension of the research, but at the same time, they are individual units that can be addressed autonomously: each one starts with an initial quote (that often refers to something external to architecture itself) and is accompanied by a well-structured set of images of different types. Images (photos and other authors' drawings) support the text and the statement, and – even if the times and the geography of the text and image are completely different – through a well-articulated analogy, they collaborate.
In this relationship between writing and images, one as the support of the other, the idea of "series" can be – again – a proper tool to speculate on it: it's an interdependent bond on which storytelling can be built.
When Ettore Sottsass escaped from Milan in the 1970s to go to the Pyrenees, he did so in an attempt to answer profound and fundamental questions about architecture and the culture of design

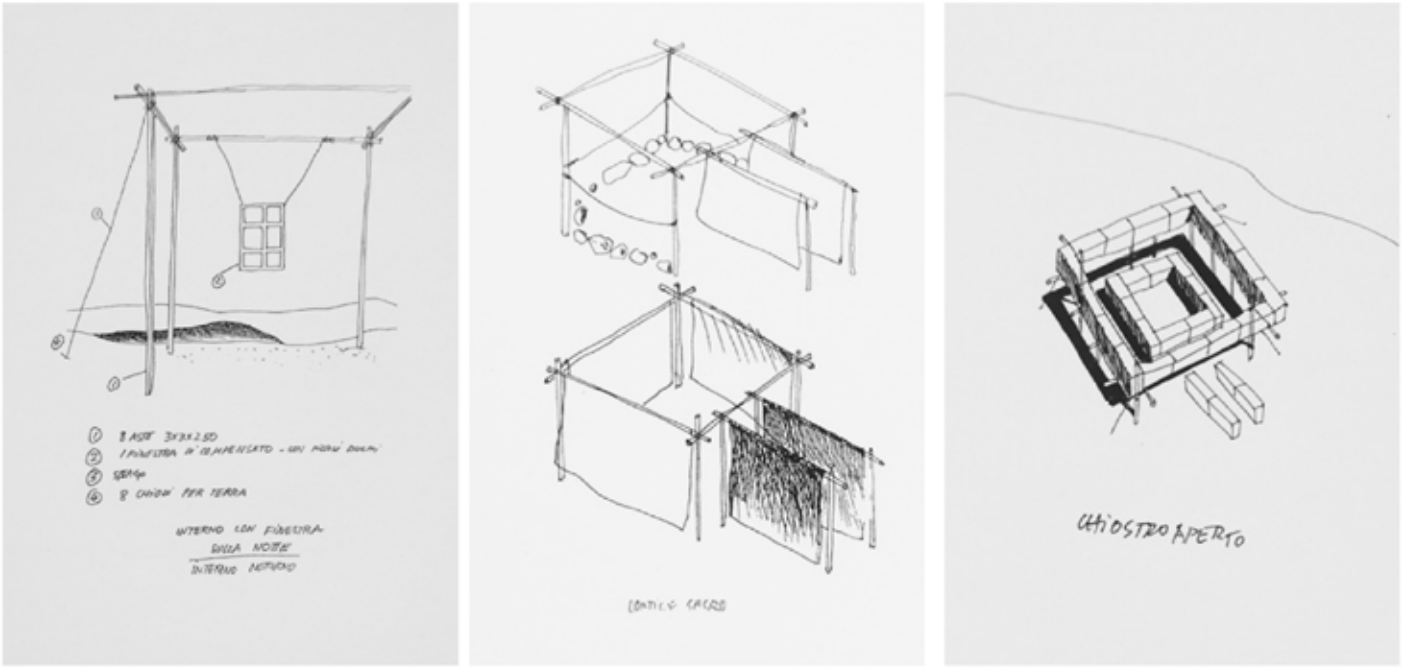

Fig. 4. Series. Ettore Sottsass, Metafore, 1972-1979 (project drawings). “What does design have to do with destiny? Perhaps it would be better to get used to drawing the dark uncertainty rather than assuming the design of certainty” (Sottsass 2002).

(Radice and Carboni 2002). By designing and building 1:1 ephemeral architecture primary gestures, he addressed the main architectural archetypes (fig. 4). The series of Metaphors is many things at the same time: alone, considered one by one, they are architecture projects (installations); they are research, in the sense that they are design-driven acts that answer to questions on architecture itself, its agency, its field; at the same time – though the way they are reported to us, only through a photo and a small text – they are a collective body of texts that addresses architecture in an ironic and very serious way at the same time. Again, research through design is an act that stems both from context-related conditions and from ones of an "endogenous nature".
The analogies between images - to recognize the "type" in its several shapes (Martí Arís 1993) - often refer to a subconscious act of visual belonging,

Fig. 5. Franco Raggi, *Tenda Rossa*, 1976: "a logical intersection between the sacred and the ephemeral; an object in balance between the "stable" image of the Temple and the temporary perfection of the nomads' tent; the most immediate and universal architecture with the graphic characters of the "superstar" of architecture" (Raggi 2024).

which works via remote references. If it is true that in our discipline, there is a tension between the replica and the invention – everything is a copy of something that has been made, but everything is original because of the author – then one could also speak of the readymade. "Readymade" operations, typical of Dada and other movements and practices, operate through a re-contextualization and a new appropriation of the meaning of the work: if the architectural type is indifferent to chronology, it is a purely formal and anachronistic matter, then the readymade allows – perhaps more ironically – to investigate themes, questions about architecture.
Franco Raggi's Tent (fig. 5) is the Parthenon and, at the same time, the ordinary tent for camping; it is the Tabernacle in the desert of the Jews, the most important ephemeral architecture in history, and a research (a re-drawing) of the proportions of the elevation of the Greek orders. It seems ironic, but it is a research operation.
Once you actually see the piece, the comparison with the Greek masterpiece is inevitable: the difference is obvious, but beyond the drama that exists between copy and originality, what you see is that the number of references is many and not just one, because over time they accumulate, and the ever-changing context influences the contemporary design operation, making the copy, a different copy, and therefore an original.
In a similar way, design-driven research can also operate through readymade (appropriation) by referring to things that already exist – architecture – and making a critical operation – critical here not being a negative term but one of reflection and comparison (Till 2010, 8) – of recontextualization, of reading, (re) design, interpretation, investigation.

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Means and Outcomes
Marco Patruno

Research in architecture stands out from that conducted in other fields as it occupies an intermediate position between scientific and artistic research without fully identifying with either. It is necessary to examine the proposed theme through tools such as creativity and exploration, but often, this process extends into areas with their own basic scientific structure, whose principles belong to another discipline. However, this crossover into other subjects, while promoting more comprehensive and contextualized research, must not allow complete deviation from the main theme being addressed.
There is a risk that producing a text, a project, or, more generally, research in this way may lead to the loss of authenticity of the product, which is the ultimate goal of the proposed work. Therefore, using scientific tools to express a concept must not equate to the research itself but should be limited to being the means to explain, conceive, and draft. "Being scientific" could be one of the elements to consider or refute as further evidence for the assertion of one's thesis. The latter is the result of the research itself, which includes a series of processes used to achieve the final goal, including information gathering, reading, and drafting texts, summarized by Jeremy Till in the concept of the "archaeology of the processes of architectural production" (Till 2008, 3).
This concept is explained through parallelism with the word "archaeology" itself, which is the "[…] science of antiquity that aims at the reconstruction of ancient civilizations through the study of material evidence (monumental, epigraphic, numismatic, artifacts, etc.), also through the use of any written and iconographic sources. A characteristic of archaeology is the method of acquiring knowledge, namely excavation on the ground, surface reconnaissance, and the

Dias Coelho, Comparative Table of Portuguese urban squares. Organizing research elements qualitatively, aiming to produce an authentic outcome. In this case, the items can be grouped according to different typological criteria.

reading of residual monumental remains" (Enciclopedia Treccani). Therefore, conducting research in architecture means defining the objective of gathering data and evidence through in-depth studies of the available material. It occurs via direct experience that leads to the theme of the originality of research, which often relies on the juxtaposition and order of collecting elements on a previously treated topic since it is never possible to address a completely "new" topic. "Classifications serve to bring the empirical to the idea" (Scolari 2007, 13).

Means for Conducting Research in Architecture

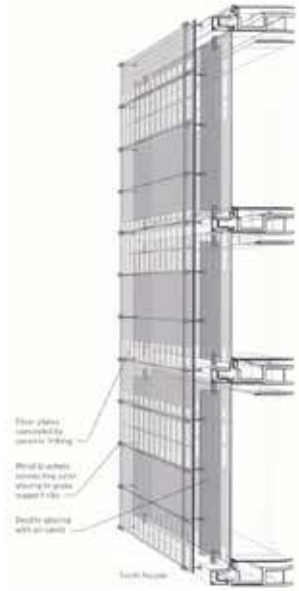
Among the various ways of conducting research, reading texts, which usually constitute the main source of information to be processed, requires the simplification of the analyzed material through the use of tools such as diagrams, schematics, and drawings in order to

understand the main theme and its various facets. In particular, conducting research in the field of architecture involves extracting a concept through the application of a method that can be identified and passed on to others.
Since each research is conducted by different authors, it will inevitably reflect a personal point of view, which, however, should not be strictly individualistic, but rather conceived in such a way as to be understood and utilized by others for further research. To understand the message the author intends to convey, it is necessary to identify the main theme through "elementary" questions (known as the five Ws), whose answers allow us to grasp its meaning and understand how the theme is introduced and developed.
Through the formulation of questions and the identification of key themes to explore and delve into during the process itself, it is essential to find a way to communicate the contents, but also a method to discover them through the transcription of the original research process. Writing, starting from the recording of one's own doubts, constitutes the first step after gathering ideas on a particular topic. "Observation permits one to calculate the imaginary network of references" (Scolari 2007, 12). The communicability of research content is based on establishing a hierarchy and asking questions to maintain the centrality of the theme.
Through a series of inquiries, the aim becomes the increasingly thorough investigation of the theme, exploring ever more specific details.
The combination of these details, which lends originality to the research, generates further reflections, leading to a revision of the layout and a review of the research's ultimate goal.
First and foremost, it is necessary to clarify what is meant to be communicated, how to represent it, and whether it proves to be an original work in the sense of

being original and understandable to others. It is, therefore, crucial to question the effect of a production, sometimes graphic, namely the message one wishes to share. For example, Farshid Moussavi questions the design of the façade, called ornament, considering and cataloging its various parts, such as structure, surface, shape, and material, in order to create a classification of elements according to very specific criteria, but above all “to bridge this gap, discussing the construction of buildings and the production of affects as a seamless continuity, as two realms that are interconnected" (Moussavi and Kubo 2006, 10).

The drawing, therefore, represents the most immediate means through which an architect can express their own thoughts. Its direct connection with the idea, which in its physical transposition sees the hand as an extension of the brain, makes it the most suitable tool to give concreteness to what until the previous moment was immaterial. “The sketch, more than any other drawing, is able to speak instantly with a single logic, because through its paths the hand imitates the idea with voluntary omissions. With a few scratches the pencil deposits the traces of everything that is omitted. Manual skill precedes and at times anticipates thought, while the pencil chases after its vertiginous reassessments, slowing down in hesitations, revising the forgotten traces, overturning the decisions and then suddenly realizing the solution” (Scolari 2007, 7).

From this, it emerges that nothing is truly new in research, but everything is reinterpreted and re-examined from different perspectives, thus conferring originality to the research itself. However, considering a thought by Winy Maas, one must question to what extent a drawing or research can be considered “original” and what the limit is not to be



Joshua Dannenberg, Sendai Mediatheque – cladding.
The design becomes the means through which to connect the idea with the technical apparatus of a project. Constructive detail has the ability to effectively explain the functioning of a building and contextualize a design idea.

exceeded so that they do not become something foreign to our research. The answer to this question lies in paying attention to certain aspects belonging to the context of an architectural project: the state of the places, the pre-existing conditions, and the political-economic-social aspects that characterize them. In this way, preliminary data can be obtained to be analyzed and subsequently investigated about how they may influence the considered place, always incorporating the project in the initial information and never erasing it.
“[…]when architects offer unique, singular works, mindful of the most diverse circumstances, they are aware of the material with which they are working, the knowledge that lets us perceive that architecture is a discipline with an enduring identity" (Moneo 2011, 13).
On the other hand, drawing is one of the analytical tools aimed at highlighting the hierarchies present among certain aspects

of the theme or project. Francis D. K. Ching emphasizes the importance of drawing as an educational tool to illuminate specific aspects of the project, such as structure, circulation, structural elements, and spatial system, to establish a strong connection between theory and the practical phase of the project, as a direct application of architectural design with the aim of respecting what is already present.

In this way, it is possible to elaborate and provide new approaches for understanding the complexity of urban areas and their inherent characteristics.

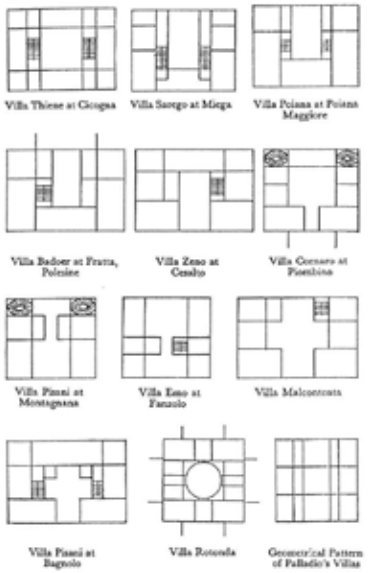
However, drawing may not always be the direct consequence of a previous approach to the theme, but on the contrary, it may represent the first attempt at investigation. Due to its importance in the world of architecture, given by its immediate response to brain impulses, it can provide the first step of research, reversing the process from gathering information and

Peter Riemann, Berlin as archipelago city, Cornell summer studio, “The city in the city”.
Reflection on the city of Berlin, considered as an ‘archipelago city.’ Different urban areas are represented, connected by multiple cultural or physical relationships to the urban planning: a city within the city.

initial speculations to graphic transcription and then enriched by concepts acquired through reading texts. Therefore, it is possible to state that research in architecture cannot be done without the use of this medium. Indeed, drawing has become a method of research, perhaps the most effective for exploring the tackled theme; these latter have already been studied through other tools such as reading and writing.

Outcomes of Architectural Research

The gathered information must be subject to questioning regarding its coherence and validity in order to produce a result opened to discussion, relied to the concept of “continuity” that implies the impossibility to conclude a thesis but only reaching an intermediate point of arrival. In fact, the context of architecture research, being not scientific, does not produce definitive results but raises questions and inquiries about the process



Rudolf Wittkower, Schematized plans of Eleven of Palladio’s Villas. Collection and categorization according to a typological criterion to examine a common aspect shared by different buildings.

itself. Consequently, it is crucial for the research to be clear and traceable in order to be further developed and documented about the tools used to conduct the work (layout) making recognizable the methods of organizing information in their possible interpretative keys, even if not exhaustive.
Even in comparing different architectures or ways of “doing architecture”, one must focus on the main question. As a clear example, Beatriz Colomina (Colomina 1994) questions how environments are presented through the medium of photography in the projects of Le Corbusier and Adolf Loos.
Their method of representing their architectures becomes the focal point of the reasoning, incorporating the aims for certain design choices and explaining the functionality of their projects in the context.
In other words, when developing an architectural project, one always refers to the relevant existing framework. This leads to the idea that a project is never a virgin but is grounded in a determined space and context already known.
Furthermore, reference to existing projects and their relationships aids in understanding the modification of places and how the research has been conducted.
Relying on this last concept, research in architecture cannot ignore the comparison with other similar case studies, not simply cataloging elements but seeking the quality of the aspect to be investigated.
One can talk about typology, which brings together different aspects of buildings (structure, distribution, architectural composition), even belonging to different eras. One can talk about the use of space, its conformation, and its ability to be modified or to change. This means examining a detail and searching for its presence in other projects, creating a case study that is always modifiable and implementable, almost becoming a database of original information.

The mean of comparing, therefore, is the tool that allows one to understand the direction of research, justify it, and contextualize it within the field of architectural design, but it must not represent a copy because it would be mere imitation.
On the other hand, taking on a new architectural peculiarity would be classified as an evolution of the previous one. At its core, there is always an attempt to compare the contemporary with the past: by exaggerating the concept of comparison, it is possible to reach the level of parody, understood as the abstraction of the concept, as something unattainable but that can represent an original point of reflection, ideally disconnected from previous knowledge and serving as a new starting point.

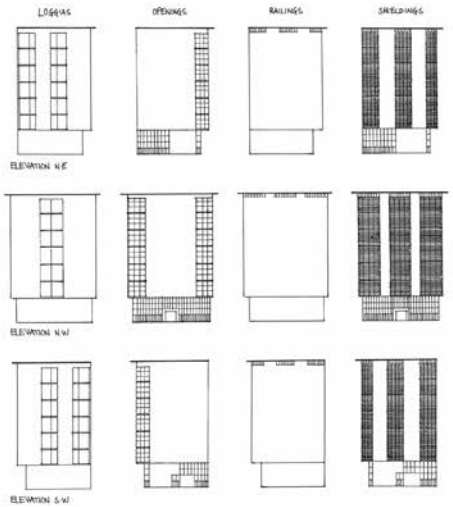
At the End of the Comparison Process
One must bear in mind, however, that at the end of the comparison process, it is easy to veer into something entirely invented, having speculated on existing cases. As reminded by Pierluigi Nicolin in a preface to *Verso una Architettura*, "the fundamental need of the treatise remains to outline a complete architectural system, but this architectural system can no longer be the result of personal invention" (Le Corbusier 2003, VII). He intends to explain how the themes addressed by architecture cannot be considered resolved in forms achieved through the numerous arguments conducted previously; otherwise, they are always to be considered from the perspective of "change", subject to modification to be made in the future, even though they are closely tied to the original concept.
Since it is not possible to conclude a discussion, one questions the most effective means to develop architectural research in a way that renders it open to future generations.
Le Corbusier describes the simplification

of elements or breaking down complex forms into primary forms as a theory referring to the architecture of the decades in which he operates, where we find mass production, analysis, and collection of structural and “ornamental” elements into certain categories. By delving deeper into the topic, it’s possible to broaden this concept of standardization into something reusable in other aspects.
Indeed, it can be interpreted in the architectural process, the needs of the inhabitants, the process of gathering information, and the spaces to make them functional.
Conversely, it can be refuted as unsuitable in today’s context to be the answer to any architectural question, as it is impossible to circumscribe everything in a single and complete sense. “Our own epoch is determining, day by day, its own style. Our eyes, unhappily, are unable yet to discern it (Le Corbusier 2003, VII).

The Effectiveness of Architectural Research

The process used to draft research in architecture consists of clearly expressing the author’s viewpoint on the subject at hand. By posing the right questions during the various stages of research, the author reaches the sought-after answers. In order for these answers to be shareable with third parties, Hermagoras of Temnos suggests the method of division into parts, meaning responding to a simplified structure to achieve efficient functionality of the complex structure underlying the ongoing research. Therefore, it is necessary to constantly question the work in progress to ensure that the drafted research is original and thus avoid falling into conventionality, engaging with collected data and attempting to organize them according to the pursued principle. However, at the end of the research, the author’s viewpoint is not to be considered definitive and closed but must be

refutable by third parties, namely the interlocutors to whom the research is addressed. It is necessary to enable the reader to comprehend immediately, which can be achieved if the focal point of the research is clear and original, achieved through identifying detailed parts or "taking something" already studied and investigating to obtain a more specific result. In this way, the research can build upon these new data, which is not considered finished, and be further developed.
In conclusion, to make one's work in architecture understandable, it is necessary to identify the tool to use to make the research effective and make it the guiding thread of the research itself and its structure. Through the clarity of the latter, the actors participating in the research manage to create a shareable collective knowledge, thus, enriching the field of architecture in its role of connection between the various



Study and use of the layer decomposition method in the assembly of facades by Asnago and Vender for the Casa in Via Faruffini (Milan) adapted to the Residential House I.S.M. (Barcelona) by J. A. Coderch, developing an original outcome.

components of the research. Indeed, its distinctive feature is being transversal to different disciplines and comprehending both the humanistic and scientific approach without losing its uniqueness, represented by the theory-practice binomial. In other words, architecture stands uniquely as the sole discipline capable of making tangible interventions, and through this principle, meaning and concreteness are attributed to the conclusions reached by one's thesis in architecture.

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Research and Practice: The Concept of Usefulness toward a Common Purpose

Miriam Pistocchi

In 2012, the EAAE (European Association for Architectural Education) drafted the *Charter on Architectural Research*, a document that defines and directs research in schools of architecture. The document was updated in 2022, but the points I would like to focus on remain almost unchanged from the first version. The paragraph *Criteria and Characteristics for Quality* states: "Architectural research meets the general criteria of originality, significance, and rigour. It produces forms of output and discourse proper to disciplinary practice, to make it discussable, communicable and useful to relevant audiences." I want to focus here on the meaning of the word useful within architectural research. Later, in the same text, we read: "[...] the research is meaningful and relevant for design practices, for the discipline, for society, for culture; it explores limits and expands them". In addition to being original because it produces new knowledge, and rigorous because it adheres to a specific shared method, research must therefore be significant, useful, meaningful, and relevant. In a discipline like architecture, which is based on a practical operation, such as designing, how useful is theoretical research and the production of new knowledge that is not specifically technical? Jeremy Till proposes a method that provides a clear picture of a possible fruitful relationship between theory and practice. The paper *Architectural Research: Three Myths and One Model*, (Till 2007) proposes three stages on which to focus architectural research: architectural process, i.e., research on the processes that lead to the realization of the project; architectural product, referring to the building as a completed object, its materials, structures, etc.; architectural performance, the building once completed, social aspects, environmental aspects, etc. The proposal

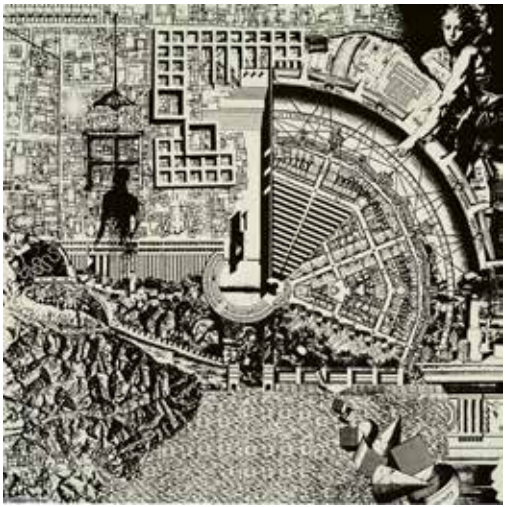


Fig.1_La Città Analoga, Aldo Rossi, Eraldo Consolascio, Bruno Reichlin, Fabio Reinhart, 1976.

does not divide research by fields (social, environmental, structural, etc.), as is usually the case, but by time stages, each of which encompasses all fields. For Till, these stages generate “an iterative loop in which one stage is informed by another,” and it is by feeding this loop that he believes research can be more effective and knowledge can develop. The goal, then, is continuous collaboration between practices, which possess the raw data, and the academy, which is able to “release this potential through research”, for one to feed through the other.
Research provides the theoretical basis for practice to be realized and, as Pier Vittorio Aureli argues, “Research is essential to prevent architecture from becoming a matter of intuition or worse yet the obsession of being a genius, or an incredible top talent” (Aureli 2016, 25). It allows one not to have to rely on what Till calls an “unspecified but presumably powerful force of creativity and

professional authority," which inevitably leads to a mythologizing of architectural production. But instead, it allows one to lean on existing knowledge and, more importantly, makes new knowledge communicable and shareable. In this way, "architecture is not something that is only about what I do, or what you do, but something that can also be exchanged as a collective form of knowledge", as Aureli argued. I believe that, therefore, the ability of research to make knowledge communicable in architecture finds its importance in its capacity to generate and transfer imaginaries, visions, ways of thinking, and interpretations of reality that from the written word are able to influence the project, and thus the reality of life, in that iterative loop that Till speaks of.
Finally, the communicability of research is also useful because it generates a common ground that facilitates the development of the discipline in a way that is not individualized, tied to the individual episode or the individual architect, or worse to commercial production, but within a community (of architects, but perhaps also a human community) that moves toward improving its own material and spiritual conditions.

Research by Reading
As specified in the previous paragraph, the communicability of research makes knowledge transfer possible. This is done, among others, through two main media: written text and drawing. The usefulness of the written text can, in turn, be divided into two parts: it can be viewed from the side of the recipient by reading or from the side of the person expressing a thought through writing. Let us start with the former. The role of reading in research consists not only in the acquisition of new information but also in the reception of something that, in my view, is even more valuable: a point of view, one's own

vision of architecture, an image of the world. So what makes reading useful is, as Aureli says, "the fact that you do not simply just have a great idea, and the idea is there, but that you also try to present that idea through text, through something that can be shared, that can remain" (Aureli 2016, 31).
In order to describe the positive effect that this transmission of ideas can have on the fruitful development of research, I would like to report the effect that two books had on me that, among many, were particularly able to transmit to me an idea, a vision, an attitude. They are two books that, coincidentally, I encountered at opposite times in my years of university education: at the beginning of my first year and at the end of my last one.
Reading the first of these books is almost a rite of passage for many first-year students; it is *Toward a New Architecture* by Le Corbusier, published in French in 1923 and read by me in Italian in 2011. Le Corbusier was a great user of the written text in order to disseminate and promote a worldview through architecture, being one of the architects who communicated most through the written word throughout his career, through the magazine *L'Esprit Nouveau*, an extraordinary number of books, articles in architectural journals and in newspapers, reports, texts for conferences, as well as by personally editing his own *Complete Works*.
Significantly, on his identity card, under "profession," we read *Homme de lettres* instead of *architecte*. Illuminating for me was the chapter *Eyes Which Do Not See*, an invitation to have a direct look at reality, unmediated by the superstructures of society or the rules of the discipline that "suffocates in habits", an invitation that remains valid for all times, especially for those who, like me at the time, sought to understand what architecture was and what an architect did.
The second example is *The Good Life* by

Iñaki Ábalos; I read it at the beginning of my research for my master's thesis. Not a line from that book was quoted in the small essay I wrote to accompany my project, yet that book provided me with a point of view for reading the domestic project; it showed me what to look at, and it was a crucial tool in forming, in turn, my own personal point of view, which I expressed in my thesis.
As I wondered about the relationship between the form of the space and the way of life of those who inhabit it, reading Ábalos brought out how, in this relationship between space and life, there is a third element that mediates between the two: the worldview of the person who designs the space, the gaze of the architect, and how this is not neutral. So, my gaze shifted, and the initial research question changed and became refined. I also found in Ábalos the same invitation as Le Corbusier five years earlier, "[...] only by abandoning that professional gaze [is it] possible to learn to observe with our own eyes, to learn to see what we really want to see" (Ábalos 2009, 13).

Research by Writing

Thus, the second approach to the text is writing. When doing research, writing is the most natural operation; it is the preferred output. When designing, on the other hand, it is often something that comes later, at the end of it all, to describe the project and recount the choices made or, on the most unfortunate occasions, to try through words to restore the project a quality that it has failed to achieve in the facts, to "try to limit the damage, soften the blow, make a virtue of necessity" (Rocca 2022, 173).
Yet, writing is an indispensable medium for the development of the project *in fieri*: it should be used "not as a-posteriori legitimization of the design, but really as a way to start to define what are the terms of the project" (Aureli 2016, 22).

Unlike designing, however, in research, writing coincides with the project (of research); it cannot be realized as a posteriori but is the very means by which to proceed. In other words, the written text is both the product of the research – the means of communicating it to others at the end of the process – and is also the tool for the development of the research itself to be used for oneself during the process.

The usefulness of writing during the research process has to do with the fact that writing a text requires that there be an ordering of the discourse, and ordering the discourse is a form of verification of the real consistency of what one is asserting: in the effort to order and make one's thinking communicable, relevant connections between the parts of the discourse are emphasized or, on the contrary, logical gaps emerge and must then be placed under new verification and possibly filled in.

During the research for my dissertation, I decided to accompany the architectural project with a short essay that would introduce its theoretical context, and while writing it, some of the questions that I have summarized here in the previous lines arose.

In order to answer the question of what the relationship was between the shape of domestic space and the ways of life of its inhabitants, I found a very large number of case studies and began to give a brief description of what made each of them relevant.

It was only as a result of writing these "cards" that the similarities and differences between the projects analyzed came to light, which allowed me to outline some guidelines and ultimately select only four projects that were particularly significant in providing a possible answer to the initial question.

The reduction to four cases was strategic to achieve clarity of message and avoid

excessive fragmentation of the discourse.

Research by Drawing

Besides text, the second main medium for communicating architecture is drawing. I want to focus on drawing as a tool for analysis, knowledge acquisition, and understanding. As Aureli states, "I do believe that drawing is not just an illustration of an idea, but is really a way of thinking through architecture" (Aureli 2016, 22). The main characteristic of analytical drawing is abstraction, that is, the reduction of complexity to only those elements useful for the development of discourse. The abstract comes from the Latin *abs* (from) + *trahere* (to pull, draw), thus meaning to draw from, to draw out, that is, to separate something from everything else. This is the utility that research finds in the use of drawing.
A significant example is Peter Eisenman's extensive use of it in his famous 1963 doctoral dissertation, *The Formal Basis of Modern Architecture*, where he alternates between handmade drawings and the written word to illustrate (the metaphorical meaning of this verb can also be understood here in a literal sense) his theory. Through hand drawing, he chooses from time to time the point of view that best emphasizes the elements: plan, elevation, section, axonometry, and perspective.
A recent example is the book *Copy Paste* by the international think tank The Why Factory (T?F), led by Winy Maas. The book "is an invitation to copy with finesse and skill", states T?F's website, because the past is "a vast archive on which we can and must build". In the chapter *Copy Right*, Felix Madrazo recounts a series of cases of copying, plagiarism, or architectural replicas involving internationally renowned architects. Using the same graphic language, he always represents the projects in question very schematically, allowing for comparison.

What emerges, in my opinion, is that the reduction of detail to a wire drawing allows one to appreciate small differences more than similarities. Juxtaposing Georgios Kontoleon's Kyriakides Villa with Adalberto Libera's Villa Malaparte, one recognizes at first glance the belonging of the two projects to the same idea, but one can appreciate something more: the difference between the more curved shape of the former and the squared shape of the latter, the presence of a parapet on the roof of the former and the absence on the latter with the appearance instead of a curved wall, the access path to the house. And these details make it possible to recognize a genealogy, a legacy, or a path that an idea takes in history. Thus, this underscored one of the themes the book aimed to discuss.

The Free Paths of Ideas

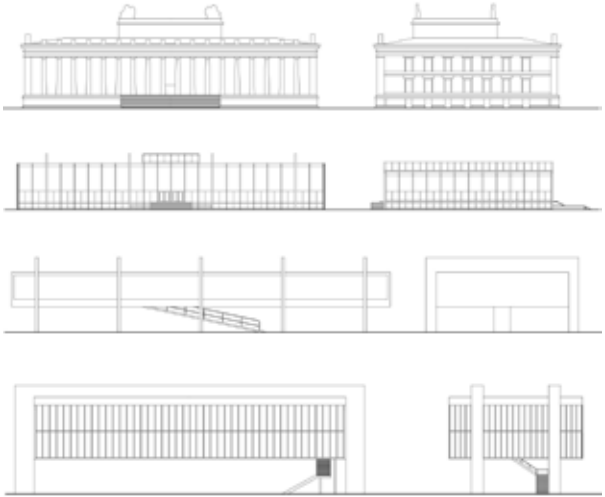
It is precisely on the free path of ideas in history that I want to make one last

A comparison between Kyriakides Villa, drawn by Georgios Kontoleon, Kavouri, 1933 (unbuilt) and Villa Malaparte, by Adalberto Libera, Capri, 1937; (drawings from Maas, Winy and Felix Madrazo with Adrien Ravon and Diana Ibáñez López. *Copy Paste. The Badass Architectural Copy Guide.* nai010, 2017).

reflection. In the aforementioned *Copy Paste*, Felix Mandrazo reflects on the concept of copyright but also on the right to copy (calling the chapter precisely with a play on words Copy Right), arguing that today, the survival of many starchitects lies in their originality and, therefore inimitability becomes a value for them: "[...] copying Hadid remains a difficult feat despite worldwide admiration for her work, and as a result her influence on built architecture remains marginal". This also leads to a general negative feeling about the absence of originality. But the question that arises is how bad it is to copy something "good". "Until recently, architectural success was measured by the influence of an architect on the work of others - says Madrazo -. The trademark of success of an architect was to create a movement through which hundreds or thousands of versions of an idea were tested worldwide. During this process, a few followers would eventually surpass the master's dictums and arrive at new solutions or even new movements. Yet collective know-how was intended to be absorbed by the next generation and improved by it; there was a clear sequence" (Madrazo 2017, 44).

Mies Van Der Rohe was one of the architects who greatly valued being taken as a reference; he copied himself and made extensive use of references from the past. Through comparative work between Mies' projects and past and future architecture, it is possible to place the German architect's projects in more than one genealogy. I want to elaborate on one of these possible lineages by comparing the elevations of four buildings at the center of Mies Van Der Rohe. For the realization of Chicago's Crown Hall, he takes up the scansion of the façade of Schinkel's Altes Museum, in short: a plinth that raises the floor level, a central staircase, an intermediate body characterized by the scansion of

columns, and a crowning with a taller central element. The same elements are found in Crown Hall, to which is added a structural system of extrados beams that articulate the façade. In turn, the Italian-Brazilian architect Lina Bo Bardi took up the Crown Hall in her design for the Museum on the Ocean Shore, built for the municipality of São Vicente and never built. However, this project laid the foundation for the later and renowned Museum of Art in São Paulo.



Karl Friedrich Schinkel, Altes Museum, Berlin 1928; Ludwig Mies Van Der Rohe, S. R. Crown Hall, Chicago 1956; Lina Bo Bardi, Museum on the Sea Shore, São Vicente 1951 (Unbuilt); Lina Bo Bardi, São Paulo Art Museum MASP, São Paulo 1957. (Drawings by the author).

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Overcoming the Division between Theory and Practice

Maria Scandroglio Anelli

Let us consider Jeremy Till's text *Architectural Research: Three Myths and One Model* as a starting point. The purpose of this text is to aid in understanding the significance of architectural research; as the author states, "architecture is a form of knowledge that can and should be developed through research" (2007). Here, Till identifies three false myths that have hindered the development of architectural research. The third paragraph, *Myth Three: Building a Building is Research*, critiques the belief that true research is manifested in the act of designing. Generations of architects tend to design without developing a theoretical research foundation; while the outcome may be good buildings, the building does not contribute new forms of knowledge, remaining within the confines of the status quo.

According to Till, an unexplained building, devoid of research, remains a mute object. To move things on, understanding the underlying process of the design is necessary. Research is essential. However, too often, practice and theory are considered as separate entities. Would it not be advantageous to overcome this division? But even before that, where does this division originate? In the 1990s, architectural theory became a discipline unto itself, with its own language and specialists, closing itself off. The theory became dense and impenetrable, and as Hélene Frichot observes, even professors excluded architectural theory from design studios due to challenges in connecting that theory with project-based learning (Frichot, 2009). The consequence was the rise of the post-avant-garde, shifting the emphasis from theory to practice. Michael Speaks famously declared: "Theory was fun, but now we have work to do" (2002, 209-212). Stan Allen supported this trend, asserting that discursive practices focus

on representation and interpretation, with an emphasis on the past, while material practices transform reality, producing new objects (Allen 2009).[1]

Today, we must overcome the notion that theory serves to explain practice only in hindsight. Certainly, Till's text aligns with this perspective, along with other architects, including the Italian Pier Vittorio Aureli.[2]

1. "Architecture, I want to say from the outset, is a material practice and not a discursive one... Material practices do not comment on the world, they operate in and about the world [...] Today's most interesting practitioners no longer ask what architecture is or what it means, but rather what it can do". Allen 2009, xiii-xiv.

2. Pier Vittorio Aureli is an architect and educator, who recalls how some architects in the past managed to write about their knowledge to create a project that was simultaneously theoretical and practical. "At least from the Renaissance onwards, the project – precisely because of its nature, simultaneously abstract and real – confounds the distinction between theory/practice. For this reason, I think that theoretical research is not a fortress, an ivory tower to seclude oneself and break free from reality, but on the contrary, the attempt, the effort to understand reality." https://operavivamagazine.org/architettura-politica-e-autonomia/

To conclude, here is a portion of the dialogue known as "Intellectuals and Power," which took place in 1972 between Gilles Deleuze and Michel Foucault. It makes us understand that theory is not outside of practice, but it is an essential tool for it, and vice versa. They are not separate but run on parallel tracks, so close that they overlap, provoking each other.

MF: "Theory does not express, translate, or serve to apply practice: it is the practice […]."

GD: "Exactly. A theory is exactly like a box of tools. It has nothing to do with the signifier. It must be useful. It must work. And not for itself. If no one uses it, starting with the theorist, then the theory is useless, or the moment is inappropriate […]. Practice is a set of relays from one theoretical point to another, and theory is a relay from one practice to another. No

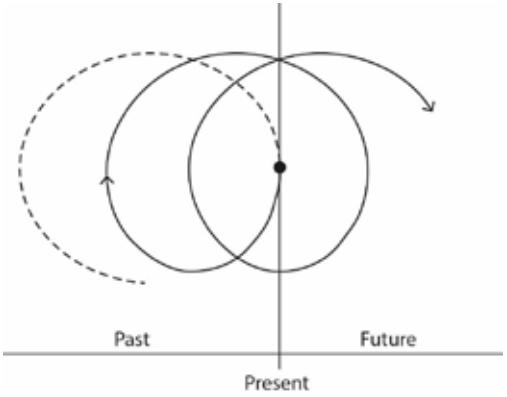
theory can develop without eventually encountering a wall, and practice is necessary for breaking through this wall."

Research by Reading: Between Past and Future

Towards a New Architecture is the book in which Le Corbusier introduces himself. The first chapter refers to the architecture of ancient Rome, making it clear how the past is a reference point for designing the future. "We must strive toward the establishment of a standard in order to face the problem of perfection. Architecture is a process based on standards. Standards are the product of logic, of analysis and painstaking study." (1958, 33)

This conception is reminiscent of what is called the spiral conception of time. It is a conception, dear to many philosophers, including Hegel, that attempts to combine cyclical and linear time: time goes through certain phases due to an eternal law that governs it and will necessarily govern it, but these repetitions differ from being cyclical since they still lead towards a progression. Time is seen as a precise spiral that follows progressive semi-cycles.

Similarly, in architecture, elements from the past are almost always taken up and reworked. As Thomas Roger Smith, an architect and a professor who, in the second part of the 19th century, deals with the problems of evolution in architecture, writes: "There is not much left for an architect to originate. With regard to many architectural features, almost every possible modification has been tried". Even so, "there is plenty of room for original talent in refinements […] new materials, […] new combinations […] fresh outlines, proportions, contrasts of light and shade and color" (1884, 514). This concept of combining existing elements in a new way is a concept that Le Corbusier often nominates. As he likes



The spiral conception of time, exposed by Georg Wilhelm Friedrich Hegel. (Graphic elaboration by the author).

to say, “good composition requires the use of very few elements”, giving us examples of the twenty-six letters of the alphabet, the seven notes of music, and the ninety-two elements of the universe. The Parthenon itself is, for Le Corbusier, the product of selection applied to a standard (Carl, 1991). Mathematics is used as the basis of this standard for Le Corbusier. Mathematical knowledge is seen as a “flash of fundamental truth” (Le Corbusier 1958, 220), and it is linked to the highest Le Corbusier’s aspiration: harmony.[3] And harmony, in Le Corbusier’s thoughts, is strongly related to order. The way we combine those twenty-six letters in words, and then phrases, is a composition, a way we give order to the elementary elements.

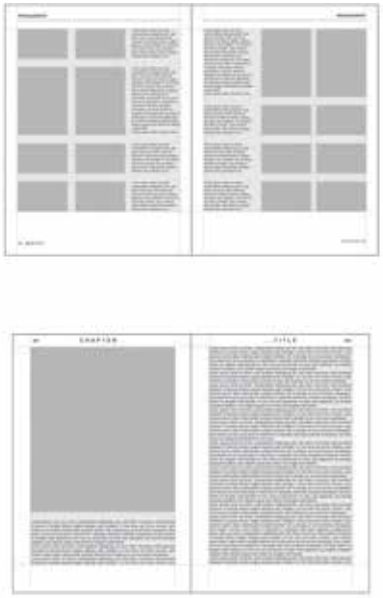
3. “Harmony, reigning over all things, regulating all the things of our lives, is the spontaneous, indefatigable and tenacious quest of man animated by a single force: the sense of the divine and pursing one aim: to make a paradise on earth.” Le Corbusier, 1958, 32.

We can assume that a starting point exists for Le Corbusier: mathematics. From this, we derive the first elements, on the basis of standards, that we can now study. For example, the majority of Le Corbusier's early drawings of ornamental motifs are of ancient Greek or medieval, and this for sure influences the proportional matrix of the Modulor, indeed passing through the drawings of the 'Vitruvian man' of the Renaissance.
However, Le Corbusier is not a historian, and his desire is to go beyond the past, so he engages in a recovery of tradition as a guarantee of a modernity yet to be discovered.
This way of understanding time is reminiscent of Hegel's spiral conception or, more precisely, the eternal present. Each moment is connected to the present and to the past. Similarly, Le Corbusier studies the past to overcome it, understand the present, and transform the future. As Peter Carl writes, he wants to find "a temporality which is both universal and metamorphic" (Carl 1991, 51).

Research by Drawing: The Layout in Architectural Research

Bruce Archer defines architectural research as "systematic inquiry whose goal is communicable knowledge" (1992, 6), emphasizing communicability as a necessary element of research. Research through drawing, a method that utilizes drawing as the primary means of analysis, is one of the clearest and most widespread ways of communicating in architecture. In architecture books, images often take precedence, with text serving as the explanatory medium. So, the presentation of drawing in a book - its layout - becomes crucial, an integral part of the research. It provides order and clarifies hierarchies on the page, aiding readers in understanding the intended meaning.
Marian Macken, in *Binding Space: The Book as Spatial Practice*, views the book

itself as a project, something to construct, “an object situated between writing and visual art” (2018). Four cited books during the lectures of Alessandro Rocca for the seminar “Design Driven Research” in 2024 at Politecnico di Milano exemplify distinct ways of presenting text. These books are Architecture, *Form Space and Order* by Francis D.K. Ching, *I Quattro Libri Dell’Architettura* by Andrea Palladio, *The Formal Basis of Modern Architecture* by Peter Eisenmann, and *Privacy and Publicity* by Beatriz Colomina. The analysis focused on redrawing selected page layouts and excluding other elements like the font, reveals common elements in the grammar of the layout:
Trim size: the actual page dimensions. It correlates with the book’s content: research-by-drawing-oriented books, like *I Quattro Libri Dell’Architettura*, prioritize drawing and necessitate bigger pages, while discursive books like



Examples of books layout: Francis D.K. Ching, Architecture, Form Space and Order (New Jersey: John & Sons, 2014). 22 x 29 cm.; Andrea Palladio, I quattro libri dell’architettura (Milano: Hoepli, 1990). 21 x 30.5cm. (Graphic re-elaboration by the author).

Examples of books layout: Peter Eisenman, *The Formal Basis of Modern Architecture* (Zurich: Lars Muller Publisher, 2006). 14 x 21 cm. Beatriz Colomina, *Privacy and Publicity* (Massachusetts: MIT Press, 1996). 17 x 27 cm. (Graphic re-elaboration by the author).

Privacy and Publicity or *L'Architettura Della Città* allocate a minor or even non-existent role to images, allowing for more practical and manageable book sizes.

Page ratio: the height-to-width ratio of pages. The standard commercial size is 6" x 9" (approximately 15x23 cm) with a ratio of 1:1.5. However, books like *Architecture: Form, Space, and Order* deviate from the norm to accommodate drawings oriented both horizontally and vertically, assuming a ratio closer to 1.1.

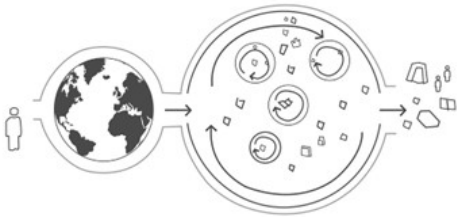
Type area: the area within margins, the area viva. It must contain text, illustrations, or other elements. The text-to-image size ratio reflects the research methodology, with research by reading emphasizing text and research by drawing, allocating more space to images.

Margins: the space between the type area and the page border. The distribution of these margins significantly affects the overall appearance of book pages.

Usually, the vertical margins are the same, while the horizontal ones have different dimensions, as is evident in *Architecture: Form, Space, and Order*.
Sidebars: the space between margins and the edge of the sheet. Although margins generally set the limits of the elements on the page, some elements -such as notes or page numbers- are often placed outside them.
Navigation: indications, often in sidebars, assist readers in orientation through the book. They are elements like page numbers or chapter names and are typically repeated on all pages, strongly influencing the layout. The careful consideration of these layout elements enhances the overall effectiveness of architectural research communication.

Research by Writing: The Rem Koolhaas Case

As widely acknowledged, Rem Koolhaas, before founding OMA, had a journalistic background, contributing to publications like the Haagse Post. His affinity for writing can be traced back to his childhood, influenced by his father's role as a scriptwriter, and it has consistently remained a central theme in his architectural work. A collaborator noted: "We spend a lot of time on making books, which is also part of the presentation materials. There is also an element of clarifying things for ourselves" (Yaneva 2009, 33). Architects from Vitruvius in the 1st century BC have a longstanding tradition of producing books, often used to promote one's own architecture or way of thinking. However, Rem Koolhaas's books, produced with his Rotterdam-based practice Office for Metropolitan Architecture, are different, as an exhibition at the Architectural Association School of Architecture demonstrates. The concept of the exhibition is simple: 400 volumes placed in the middle of the room, bound together in black folders, represent



Representation of Rem Koolhaas workflow based on his speech with Cynthia Davidson. (Graphic re-elaboration by the author).

the complete works of OMA from 1978 to 2010. Most of these volumes constitute internal dossiers, underscoring OMA's reputation for conducting extensive research for each project: writing is present in every stage of the design process, and while every competition the practice enters may not result in a building, it will probably produce a book. This, in particular the fact that most of his writings remain unpublished, suggests that for him, writing is first a research method, then a way to promote his building. Koolhaas himself explained the importance of writing for him in 1993, during an interview with Cynthia Davidson about the reason why he wrote *Delirious of New York*. An excerpt is given below:

RK: "Almost at the beginning of every project there is a definition in words -a text- a concept, ambition, or theme that is put in words, and only at the moment that it is put in words can we begin to proceed,

to think about architecture; the words unleash design. All of our projects, or our best projects or maybe our most original projects, are first defined in literary terms, which then suggest an entire architectural program."
[…]
CD: "So you have a text that prefaces the design. Do you begin drawing to get yet another text?"
RK: "No, no. We can draw whatever we want and model whatever we want, but it's only when there is a textile formulation of the problem that we can really start. The design is a demonstration of a thesis or a question or a literary idea."
CD: "Is the architecture itself something one can read as a text?"
RK: "I think some of the best works can be read as texts."
[…]
CD: "Do you think that architecture must necessarily have a relationship to writing […]?
RK: "I would say yes […] because for me architecture is an intellectual discipline and for me writing is the privileged communication of our intellectual disciplines. So writing is absolutely without question necessary. We abuse the alibi of the otherness of our profession. But chemists write about chemistry, they don't pretend that you cannot describe the meeting between hydrogen and oxygen. They don't say "you should have been there" (Davidson 1993, 42-43).
In this conversation, Koolhaas challenged the conventional notion that the building comes first, and eventually, a text can follow. For him, the text comes first, and eventually, a building can follow. Thus, although Koolhaas's way of publishing is peculiar -his background in journalism has influenced his writing style to the point that sometimes they seem more like collections of ideas or diaries than research books, it must be acknowledged that he is an architect who makes

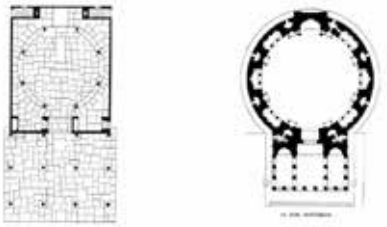
extensive use of research by writing, trusting the book as a means of communication.

Research by Comparison: The Type as the Generating Element

Once again[4], in the thought of Carlos Martì Arìs, the necessary coexistence of theory and practice is evident. The architect draws a parallel between the world of architecture and Karl Popper's "theory of three worlds," which posits that the world of external things and the inner world of the subject are not separate. Instead, there is a mutual interaction between physical and intelligible objects mediated through thought. If we define as real - as the philosopher explains - that which can act on physical things, then a theory can also be considered real. For example, physical theories like those of Maxwell or Hertz led to the invention of the television, altering the world of things; they are theories and simultaneously real. Consequently, the world of physical objects (1) can interact with the world of subjective experiences (2) - the realm of mental states that enable the understanding of things and theories - which can, in turn, interact with the world of statements and theories (3). Martì Aris adopts this theory of three worlds, asserting that in architecture, too, there exist three worlds: the world of architectural works (1), the world of the mental activity of the architect (2), and the disciplinary corpus of architecture (3). Designing architecture by considering only the world of practice (1) results in mere imitation of the existing; it is necessary to draw from the world of theory (3). The communication between these two worlds can occur only through the subjective world of re-elaboration (2). It is interesting to note how the scientist,

4. Reference is made to previous lesson, particularly to what was written by Le Corbusier and Jeremy Till

like the artist, must traverse the realm of subjectivity, making a creative and operative act while passing through this world. Now it becomes clear what Martì Aria means when he writes:
“The idea of the type presents itself as a cognitive process [...] and, at the same time, as an operative method that constitutes the basis of the design act itself” (2012, 13).
The study of the type, and thus the disciplinary corpus of architecture, through the project leads to new architectural elements, and the analysis of these elements, in turn, gives rise to new notions of type. The type, therefore, does not oppose the principle of freedom, relegating architecture to existing works; instead, by resorting to archetypal forms, one can design buildings whose specific qualities and individuality can be appreciated. Today’s architecture, therefore, finds its foundation in the study of past architecture, not through imitation but by discovering new ways to combine existing elements: “Human desires in every present instant are torn between the replica and the invention, between the desire to return to the known pattern, and the desire to escape it by a new variation” (Kubler 1962).



Gunnar Aslpund, Skogskyrogarden. Stockholm, 1917-40; Pantheon. Roma, I sec d.C. (Graphic re-elaboration by the author).

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Design Driven by Research
Erika Sezzi

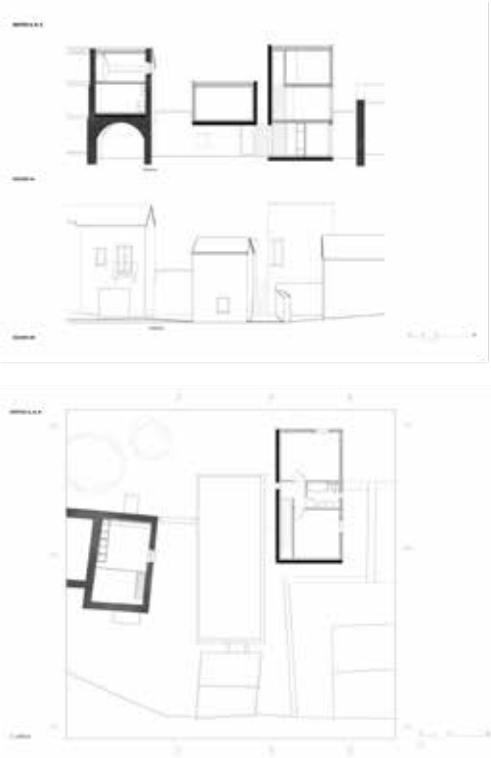
The European Association for Architectural Education (EAAE) advocates stronger links between theoretical and practice-based research and, therefore, between academia and the profession for the establishment of an expanded arena of architectural research[1].
In the anthropomorphic framework in which we are placed, there is no doubt that the architectural theme influences us, particularly in the way that surrounds us in everything we see and experience, from the spatial scale to the object scale.
Starting from this assumption, it is evident the responsibility of the architect.
Therefore, who "produces" what surrounds us, and even more, who is devoted to the academy, to research, to describe and study the quality of form, to provide the practitioner guideline and authoritative criteria to ensure the quality of the built environment.

1. European Association for Architectural Education, EAAE Charter on Architectural Research, 2022.

Unfortunately, looking at the built panorama, it is not always a given that architectural practice is inspired by the quality of design theorized by progress from research. Nevertheless, it is difficult when it comes to technological and sustainable development and almost impossible when it comes to quality of form and design.
This is even more evident when we look at the different scales of design: a skyscraper in a metropolis will have a much greater chance of meeting the criteria of technological innovation and sustainability and expressing formal research in its composition than a more traditional building type in a smaller city, even more so in the suburbs or inner abandoned areas.
This is generally because important buildings such as skyscrapers have visibility and condense considerable economic and political interests as opposed to smaller architectural heritage.

In the Italian scenario, due to a neglected sensitivity to architectural research and innovation, most of the built panorama, even what could prove to be incubators of interest, need help attracting attention and finding a relevant role in academic research.
The opportunity to do applied research thanks to NRRP (National Recovery and Resilience Plan) funds by involving partners outside the academy (administrations, third-sector entities, associations) opens the possibility of focusing attention even on the disconnected and fragmented heritage on which we hardly dwell. This possibility has the quality of making research action more democratic and original.
For this reason, I decided to decline as a simple programmatic manifesto these short pages to understand how it is possible to conduct academic research focusing on the minor heritage by letting architectural drawings that are significant, in my opinion in this sense create the red thread among the writings.
As a visual expression of this manifesto, the houses in Piazzetta Fontana in Ravecchia by studio Canevascini Corecco are an inspiring example of producing quality architecture in the setting of minor architectural heritage.

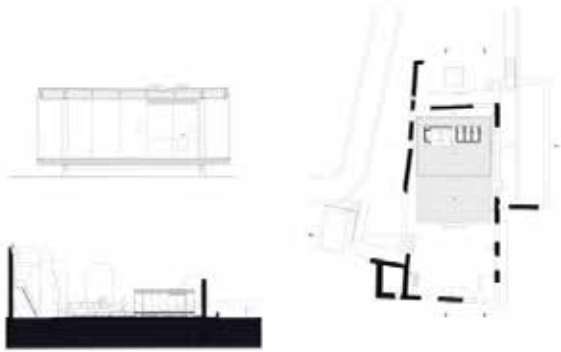
Design by Readings
Small architectural objects are only the focus of a little academic research. Instead, they are the bread and butter of building practice as the object of an action called renovation, which is often linked to a poor architectural quality of little formal relevance. However, it is indisputable that in the current architectural landscape, this type of action speaks to most heritage interventions. For this reason, academic research has a duty to direct its efforts in this direction as well.
The vocation of the architect and architecture itself is to return qualitatively



Canevascini & Corecco, Abitazioni in piazzetta Fontana, Ravecchia, Bellinzona, Svizzera, 2011. Drawing by Carlo Schwitter and Federico Pinhero.

relevant places to the community that can best accommodate its users. Of course, it is undemocratic to think this quality is restricted to large cities and wealthy clients. This is why architectural research in the field of minor heritage, particularly about the interaction between new and old, deserves a relevant place in the academic landscape.
If it is true, as Aureli states, that architectural form can be understood in an absolute, disconnected, and recognizable way, independent of the historical context, geographical location, and sociopolitical dimension in which it is embedded,[2] then I believe that it is necessary to seek purity in architectural design even in graft, reuse, and renovation interventions.
The research through the project thus aims to put a form at the center and to perform a qualitative selection aimed at defining and studying a selection of

2. Pier Vittorio Aureli, *The Possibility of an Absolute Architecture*, (London: MIT Press, 2011).



Joao Mendes Ribeiro's Tea House in Parço das Infantas, which won the 2001 European Prize for Contemporary Architecture-Mies van der Rohe Award (EU Mies Awards).

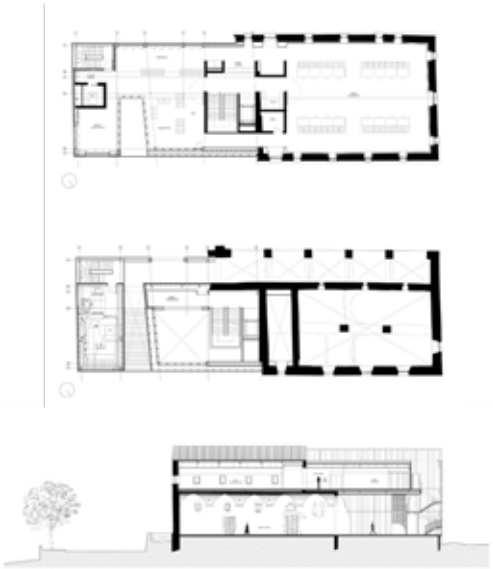
exemplary projects that act in a timely manner on the existing built heritage, to extrapolate quality criteria and actions to be repurposed.
The project is the result of a careful balance between cultural heritage in a monumental setting and contemporary architecture. Order is at the heart of the design gesture; recognizability and quality are divorced from the temporal dimension but live exclusively in the quality of the form of the project. Although it is true that the function of the object does not refer to the ordinary world but to the extraordinary, the purity of the design action is clear, repeatable, and shareable.

Design by Drawing

Moreover, research in architecture encompasses knowledge production through design projects, artifacts, and design processes, as well as research about and for design. Therefore, research results may be obtained by and consistent

with experience in practice.[3] In particular, within the theme of renovation, which is understood as the interaction between new and old in the architectural field, it is drawing that makes the relationship itself legible and universally communicable. It is, therefore, essential to investigate how architectural drawing communicates what is fundamental in the interaction. In this sense, architectural drawing is the way of thinking about the interaction between graft and grafted, focusing on the intrinsic quality of the project in its interaction and identity. Grafting, layering, and hierarchy are complex issues on which to do theoretical research, sometimes complicated to explain in words.
On the other hand, architectural drawing makes this immediately understandable to the architect himself.
Amelia Tavella's intervention in the Convent of St. Francis expresses this loquacity in the plans and sections.
The cleanliness of the graphic line perfectly renders what pre-existence is and what graft is, where the material discontinuity lies, and the role of the central core of the rising body as the knot that binds old and new.
It is unnecessary to explain the architectural gesture that breaks the splayed added body because the relationship between the scale and the splaying of the existing windows is essentially loquacious in the plans.
It is evident from the section that the designer decided to act in continuity with the existing, maintaining the interior elevations, but to detach herself materially and technologically. The roof's position emphasizes the graft and the desire to embed the new envelope in the existing one, reaffirming a design subordination.
The drawings in this project are the indisputable vehicle for transposing an abstract idea and concepts and making

3. European Association for Architectural Education, EAAE Charter on Architectural Research, 2022.



Amelia Tavella, Convent Saint-François. Plans and Sections, Sainte-Lucie-de-Tallano, France, 2021.

them so legible that they can be translated into real, finished, and recognizable design work.

Design by Writing

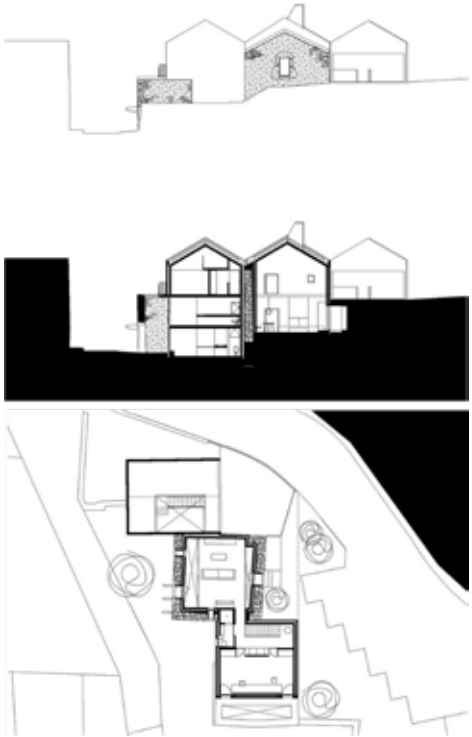
Starting from what has been expressed so far, the topic of spreading architectural research through writing, the writing of theoretical papers, and scripts is undoubtedly fundamental.

One of the critical issues around the development of original research projects dealing with complex and marginal issues is the difficulty in finding interlocutors (administrations, provosts, third sector) who are accustomed to architectural research issues and thus able to read the research product.

Since, however, research must by its very vocation be useful and pregnant with meaning, all the more so in these situations, it is necessary to find a language that can be considered sufficiently researched to be worthy of the

academic title and at the same time simple enough to achieve feasibility.
I think, in general, we should always write before doing the project, not after. To the many colleagues who question the role of criticism, I propose this way: let us always write before, or at most while, the project, not let everything be done, to express reflections and opinions.[4]
In this sense, I believe that the occasion of applied research can aspire to be a concrete tool to bring academia closer to practice and vice versa. Discussing seriously with the external user developing topic is a useful opportunity for both and should never taken for granted.
In particular, with the calls funded by the NRRP, National Recovery and Resilience Plan, not only private companies with a forward-looking and educated vision but also small municipalities have the opportunity to interact with academia in order to develop new solutions to the problems of the territories.
Applied research must therefore be the tool to reach places and realities that would otherwise struggle to handle challenging situations with their own forces alone. In this sense, I believe that the tool of applied research in the form of the written text is extraordinarily democratic in that it gives the possibility of using the means of architecture to reach concepts and solutions that would otherwise be difficult to understand.
I associated this section with Andrea Frapolli's drawings for Ca' Mantova, a project generated in the history of the buildings it involves and that, thanks to a

4. Alessandro Rocca, Epica e Beffarda, Gli ultimi giorni della diga, in *Selve in città*, (Milan: Mimesis Edizioni, 2022): "Penso che, in generale, dovremmo sempre scrivere prima, di fare il progetto, non dopo. Ai molti colleghi che rivendicano, interrogano, questionano il ruolo della critica, vorrei proporre questa modalità: scriviamo sempre prima, o al massimo nel mentre, del progetto, non lasciamo che tutto sia stato fatto, per esprimere riflessioni e opinioni."



Andrea Frapolli, Ca' Mantova. Elevations Sections and Plans, Prosito-Lodrino, Switzerland, 2019.

deep dialogue between architect and client, was able to propose a very contemporary vision but at the same time integrated with the past.

Design by Comparison

The last theme deals with design through comparison. This theme has always had a particularly strong value for me. My professor in the design studio in my first year of university, architect Marco Ghilotti, used to say, "Architecture is designed from architecture."

In fact, just as architectural research is a balance between original investigation and inspiration, design is an original gesture that cannot disregard the study of the context. In the same way, teaching also works by parallels between the past and the future.

Practice, teaching, and research share the assumption that each project and each new building aims to reach a status of originality and difference. On the other

hand, each project faces a force that acts in the opposite direction, towards repetition and homologation.[5]
Let me be clear: I do not believe that only famous design examples are useful for teaching composition. Instead, I believe it is necessary to raise the awe and interest of new generations of students in all types of architecture, from the simplest and most rural to the modern and complex. Explain the intricacies of drawing elevations by walking with their noses up in historical centers, inviting them to sketch and redraw through the filter of understanding the human eye. Only in this way will they be fascinated by so-called "normal" buildings and thus be able to enrich their professional practice with academic knowledge without caring about the scale at which they will have to practice as architects, capable of bringing quality everywhere. In this sense, I believe that the faculty of architecture certainly has a duty to teach design through the study of architecture in all its forms, from the most canonical to the less traditional.
The student should not only learn a discipline as rigorous as it is fascinating but rather a critical gaze capable of filtering theory and applying it for the benefit of all those who experience our projects. In the splendid sketch of the Piazza di Spagna in Rome by Alvaro Siza, this subjective filter emerges. The pencil leads us to translate and absorb the space around us to make it an instrument of our own design.

5 Antoine Picon, *Ornament. The Politics of Architecture and Subjectivity* (Wiley: Chichester 2013).

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On Wording and Drawing: An Approximation to Design-Driven Research Language Tools and Key Questions

Joana Teixeira Pinho

My personal position towards what is called research in architecture has evolved from a denial attitude to a mining one. I found it hard to perceive the discipline many times, but when I heard the first people I met after graduation from architecture explaining their research, it appeared to slip away easily. Moreover, I was often unsatisfied with how architects make use of language, including in educational contexts, as a student and later as an assistant. Although I was not able to elaborate on this, I felt both observations were interrelated.
Research in architecture, i.e., research within the discipline of architecture, can, as far as I understood,[1] most evidently surface through Design-Driven Research. Design-driven research is a research model that refers to possible ways of doing research in architecture (Rocca 2021, 46). When considering this model,

1. Direct reference to the course Design Driven Research, an AUID PhD program mandatory course.

Fig. 1 Villard de Honnecourt, Plate 63 from the Album de Dessins et Croquis, ca. 1235. Tower pillars of the church of Reims as well as profiles of the chapels, window arches and cross ribs. The many drawings, which are accompanied by explanatory comments, document the architecture and construction of the time. They were created during Honnecourt's travels through Europe and form a kind of textbook on medieval construction.

one must be able to position one's own research approach by specifying the role that design plays in the defined research method.[2] The development of research methods within this model aims at clearly overpast any sole ambition in defining research in architecture as research in architectural sciences (Rocca 2021, 43), which does not consider design as a research component.
Research, and therefore research in architecture, is a systematic inquiry, and its methods implicate systematism. Correspondingly, its tools are to be employed systematically. When one refers to the specificity of research in architecture, one mainly refers to its methods and tools. The ongoing and evolving discussion of the methods and the tools appropriate to Desig-Driven Research must be considered under its recent existence.[3] The output of this development, it seems to me, may entail research into architecture's own definition and, thus, its own identity.

Verbal Language

Surely and inevitably, my shallow disbelief can be explained by "The normal stretching of the field of architecture along the arts to science line (with the social sciences somewhere in the middle)" (Till 2007, 3). This fact implicates forcibly the engagement with several knowledge fields in addition to architecture and consequently crossing the limits to different languages, a vocabulary too vast and not easy, if possible, to master. A second reason relies on the fact that

2. It seems to me that the Design Driven Research model can be put in relation to Christopher Frayling's model "for design research", which distinguishes research 'into', 'through', and 'for' design. Cited in Jeremy Till, "Architectural Research: Three Myths and One Model," *Collected Writings*, 2007, 3.

3. For example, Christopher Frayling's model for design research was first published in 1993. Christopher Frayling, "Research in Art and Design," *Royal College of Art Research Papers* 1, no. 1 (1993/4): 1-5.

research in architecture may, under certain conditions, be exercised outside an academic institution, within a practice, and to some extent recognized (Till 2007, 5). This, based on my understanding, results in another interference due to different demands in the academic and practice fields, also in terms of language. Finally, the evolution of my personal position finds ground after learning that research, and, therefore, research in architecture, must respond to "research definitions or processes" applicable to any other discipline (Till 2007, 1), and so, for example, to criteria of rigor and communicability.[4] Reflecting on this allows one to consider language, specifically verbal language, as a tool for research in architecture and, therefore, as a tool for the above-mentioned question of identity. In this line of thought, verbal language must respond to both criteria. This can be illustrated by the selection and addition of adjectives to the action noun research. On the one hand, turning research in architecture into architectural research gives away, in an apparent definite way, an expectant and pressurized adjective such as scientific. On the other hand, it also holds the adjective artistic at a distance. Following this precision in wording raises the question: could architectural research be understood and developed as a mode of research that differs from scientific research and artistic research as a third mode of research? From now on, I will refer to architectural research instead of research in architecture.

4. "Bruce Archer's definition of research (that it is "systematic inquiry whose goal is communicable knowledge)." Cited in Till 2007., 2.

Visual Language

"Whatever the observation angle, architecture is form, form generating. Thus, in form resides the relevance of the discipline" (Till 2007, 4). This is why,

within architectural research and as for verbal language, there is an expectation concerning visual language. Both languages can be considered research tools. I think one can describe them as techniques that one can learn and improve. Visual language as a representational and analytical tool, i.e., a tool to understand and translate knowledge about an architectural object, has been used in education and works seeking the demonstration of theories of architecture.

Within visual language, drawing constitutes a particular tool in the context of architectural research.[5] It seems consensual that plans, sections, elevations, and isometric drawings[6] are appropriate forms of representation of the process of inquiry and of its results in architectural research – clearly against perspectives and other images. I would say the appropriateness of these types of drawings, along with other types of visual language, may need to be evaluated together with the defined research methods.

5. Reading Scolari got me thinking about the basics: a drawing tool, a drawing technique, a drawing type, a drawing format. For example, a pencil, hand drawing, a plan, in a corner of a notebook. Or, a mouse (linked to computer and software), digital drawing, a section, scaled to be centred on a portrait A4-sheet. Some drawing types can result from different drawing techniques, others don't, as for example the sketch, which can only be produced by free hand drawing. Some drawing techniques are closer to a technique outside of their genealogy, as for example guided hand drawing and 2D digital drawing, which is in essence line drawing. In turn, 2D and 3D digital drawings, seemingly closer to each other, implicate different thought procedures. Massimo Scolari, Considerations and Aphorisms on Drawing (Rovereto: Edizione Stella, 2007).

6. In the context of research, of architectural research, the difference between different types of axonometric projection might be a relevant one: "Isometric perspective, less faithful to appearance, is more faithful to fact; it shows things nearly as they are known to the mind." Claude Bragdon cited in Jan Krikke, "Why the world relies on a Chinese 'perspective'?," Jan 2, 2018 https://jankrikke2020.medium.com/why-the-world-relies-on-a-chinese-perspective-cf3122caf67f .

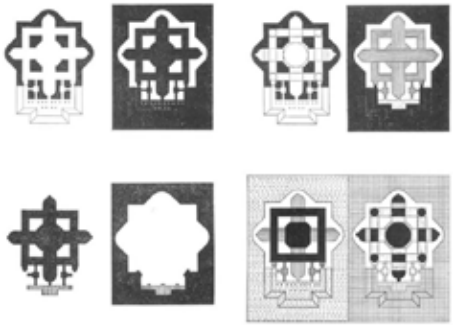
Fig. 2. Otto Wagner's sketch archive contains numerous analytical drawings of architectural elements as well as conceptual sketches with texts that illustrate his thoughts from the understanding of the task to the architectural design.

However, the use of drawing has, it seems, gone beyond the analysis; otherwise, it remains a tool for collecting and revealing observations, which would not go beyond a compilation or a catalog.[7] If architectural research means making a contribution to the discipline, can drawing be used to reflect and communicate information that exceeds the object of study? Can drawing provide evidence of external factors to the architecture project that are typically not drawable?

Diagrams

It seems to me that the demand for making knowledge explicit and transferable may be related to a demand for rigor and communicability of verbal and visual languages within architectural research. On the threshold of both languages, diagrams may be regarded as an example of this attempt. Diagrams are

7. Direct reference to the course Design Driven Research, an AUID PhD program mandatory course.



Bruno Zevi's interpretive drawings with the aim to "translate the interior space into a flat 2D drawing, playing with the classic poché technique and taking it further in the discourse solid-void, positive-negative, figure-ground representation" (Andreea Mihaela Chircă (@poiesis.of.space), June 22, 2023, https://www.instagram.com/poiesis.of.space/?hl=en).

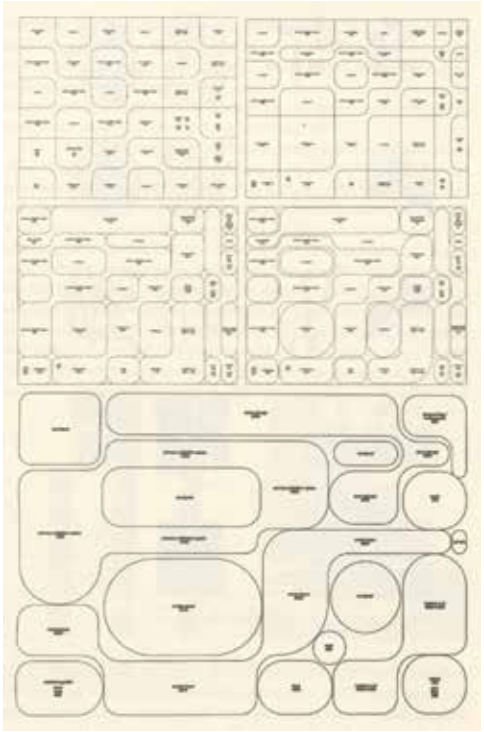
"in their mediality […] located between text and image, in that they convey their message by means of the spatial arrangement of abstract forms on a surface."[8] Moreover, diagrams are able to "Operat[e] between form and word, space and language, […] [are] both constitutive and projective; […] [they are] performative rather than representational."[9]
In practice, diagrams are commonly used in the early stage of an architecture project to translate the brief and the list of functions of use prescribed by the client

8. "[...] Diagrammen [...], also Darstellungen, welche in ihrer Medialität zwischen Text und Bild zu verorten sind, indem sie ihre Botschaft mittels der räumlichen Anordnung abstrakter Formen auf einer Fläche vermitteln." [TbA], Julian Jachman, "Eine Diagrammatik der Architektur zwischen Operationalität, Evidenz und Spur" in Diagrammatik der Architektur, ed. Dietrich Boschung, and Julian Jachmann (München: Wilhelm Fink Verlag, 2013), 9.
9. Anthony Vidler, "Diagrams of Diagrams: Architectural Abstraction and Modern Representation," *Representations* no. 72 (2000): 1–20. https://doi.org/10.2307/2902906.

or the competition committee. Could diagrammatic language be applied to disentail other design approaches rather than a, as mentioned above, functionalist or, as another example, a deconstructivist one? Could other approaches be more concerned with an able view of architecture or with architecture as device[10] emerge?

Developed outside the practice field, but typological investigation may be highlighted if a case of knowledge is transferred into practice.[11] It often makes use of diagrams that contribute to a recognizable language, as they constitute a possible codification. Being recognizable as a codification allows design methods such as comparison, imitation, replica, and montage to be

10. Jos Boys, *Doing Disability Differently: An Alternative Handbook on Architecture, Dis/Ability and Designing for Everyday Life* (New York: Routledge, 2014).
11. Direct reference to the course Design Driven Research, an AUID PhD program mandatory course.



SANAA, development of the floor plan from the functional diagram, project Toledo Museum of Art from Ohio, USA, 2001-06.

made explicit.[12] Could these methods, in turn, be seen as identity constituents of the discipline and of architectural research?

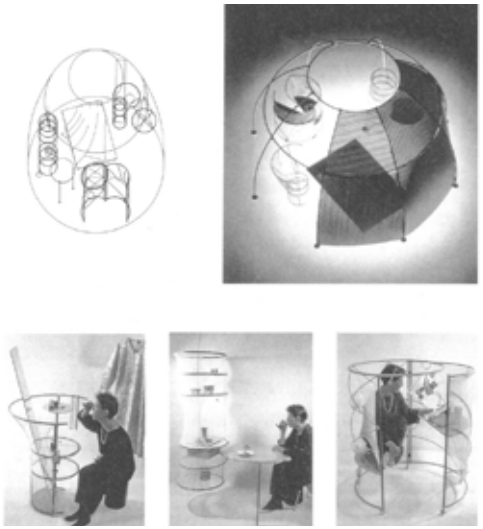
Further Questions

In Beatriz Colomina's book,[13] there is a striking mirroring between the verbal and visual formats and contents. Without the text I would not be able to recognize all the information each image actually contains. And without the image, I would have difficulty concretizing the concepts and spatial consequences described in the text. This understandable and necessary correlation makes me think again about the question of rigor in the context of architectural research. If verbal and visual languages and hybrid forms, such as diagrams, enable reciprocal recognition, wouldn't this imply that it is possible to uncover and transmit this knowledge? Wouldn't this then constitute one measure of relevance in architectural research? What supports the development of a method? Can design methods, such as comparison, imitation, replica, and montage, be considered disciplinary starting points for the development of a research method? What other design methods could be considered? How does the interdependence between tools and methods surface? Beyond the language tools specific to the discipline of architecture, should the outlining of methods for architectural research be regarded as a contribution to the question of identity? What would this mean for architectural research in relation to other disciplines? And in relation to interdisciplinary research?

Are there limits, and what do they mean to architectural research, and specifically to Design-Driven Research, in an

12. Direct reference to the course Design Driven Research, an AUID PhD program mandatory course.
13. Beatriz Colomina, Interior, in *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge: The MIT Press, 1996), 233-281.

academic context that makes use of methods taken from the practice field? How do we measure their appropriateness? Could a general aim of Design-Driven Research be to make understandable the processes and the products of architecture, among others, and thus to make knowledge explicit? And consequently, only the individual artistic gesture would rightly remain beyond any process of evidence demonstration within architectural research.



Tomio Ohashi, Axonometric drawing and view of the model of project Pao I for a “Tokyo nomad woman” from Toyo Ito, 1985. This project “explored the relationship between house and furniture, and the contraction of private space for a dense urban setting, reducing it to minimal shelter with network connectivity.” David Garcia, “Architecture of Quarantine,” *Architectural Review* no. 1472 (June 2020): 22.

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Three Paradigms of Comparison: Into, For, and Through

Yue Zhong

For a long time, there has been a constant debate between endogenous architectural reasoning and exogenous neighbor disciplines in the process of self-exploration through comparison in architectural design, from the form aesthetics regarding proportion, composition in Renaissance, Colin Rowe's comparative argument of the continuity in the classical aesthetic discipline in modern architectural language, "purity" imitation in architecture after being "separated" from the original from Peter Eisenman to a basic symbol that constitutes an overall system; Also Rossi argues for the collectivity. On this point, research in architectural design must find a balance between motivations of general interest and those of a strictly personal nature.[1]

The essay would like to ask how comparison, this technique, is involved in the process of research, what role it plays, and by which means. Referring to the basic research paradigm can help to trace the mechanism of comparison in different ways, in the formation of progressive architectural interpretation, getting rid of cease to be an empirical myth and becoming measurable research that exists independently and exceeds the building as object, just as art exceeds the painting as object, and therefore addressing the expanded field.

The selection of three pairs of examples, Villa Capra and The Savoye, Casa del Fascio, and HOUSE II, attempt to reveal how the technique works from three research paradigms: 'Into' takes architecture as its subject matter.[2] This

1. Alessandro Rocca. "Endogenous/exogenous, the two hemispheres of architectural research." In *Evaluation of Design-Driven Research*, 166-171. (Edições Universitárias Lusófonas COFAC/ Universidade Lusófona do Porto ARENA (Architectural Research European Network Association) EAAE (European Association for Architectural Education) ELIA (European League of Institutes of the Arts), 2022.

2 Jeremy Till, "Architectural Research: Three Myths

kind of comparative research focuses on existing design outcomes, for example, examining the design works of other designers, the design environment that is not your own, the design history of your own era, etc. This comparative mode brings the researcher's perspective as the 'observer', presenting it in a relatively objective manner. 'for' refers to specifically aimed at future applications,[3] The researcher, as "operator", completes the research through analogy analysis of personal design outcome, summarizing the experience, feelings and understanding in the architectural design process it is more like a "designer-researcher". The creation of propositions is strongly characterized by the personal autonomy of the designer-researcher, with a strong feature of subjectivity in research creation. And 'through' uses architectural design and production as a part of the research methodology itself.[4] Research as design products function in a number of independent but interactive ways – they are structural entities, they act as participants, and function experimentally, theoretically, and practically. This comparison of design abstracted from the entire accumulation gives the research the weight of time and allows comparison to surpass a pure technique, to become knowledge itself, and to be studied.

Comparison 'Into'

Comparison 'into', in simple terms, refers to the concept of "designers documenting the work of others." It doesn't rely on the personal experiences and insights of the researcher who has directly participated in the design practice. Instead, researchers with a background in design acquire knowledge by examining design phenomena that are outside their own experiences. Although this mode of

and One Model," *Collected Writings*, 2007.
3. Jeremy Till. "Three Myths and One Model."

4. Jeremy Till. "Three Myths and One Model."

comparison may not delve deeply into the thought processes of individual designers, it provides researchers with the perspective of an “other.” By stepping outside of the dual subjectivity inherent in experiential knowledge (which includes subjective materials and subjective analytical judgments), the objects of study become clearly defined, as do the contents of the investigation.

For example, Colin Rowe conducts a grid-based comparative analysis of Palladio’s Villa Capra and Le Corbusier’s Villa Savoye to demonstrate the compositional isomorphism between the two.

In general, the systems of the two houses are closely similar. They are both conceived as single blocks, with one projecting element and parallel principle and subsidiary façades. Allowing for variations in roof treatment, they are blocks of corresponding volume, eight units in length, five and a half in breadth, and five in height. In both cases, six”

Comparison ‘into’ (Contemplators of ruins, Giorgio De Chirico, Villa Capra, Palladio, Villa Savoye, Le Corbusier, graphic re-elaboration by the author).

transverse" lines of support, rhythmically alternating double and single bays, are established, but the rhythm of the parallel lines of support, as a result of Le Corbusier's use of the cantilever, differs slightly.[5]

This passage shows a typical emphasis on objective comparison of architectural vocabulary through mathematical and physical grid division—it does not explore factors other than architectural form but uses precise mathematical proportions to promote logical construction based on artistic aesthetic principles. Although this kind of careful reading sometimes leads to over-interpretation beyond the intention of the creator and has therefore been questioned and criticized by some scholars, it can be considered that Colin Rowe and others are based on the works of Le Corbusier, Mies, and others. To create a kind of secondary creation whereby they propose the rules of modern architectural form that they wish to establish. This rule makes modern architecture no longer a representational product but a discipline that exists independently of all other things. Like classical architecture, modern architecture has been given new research significance.

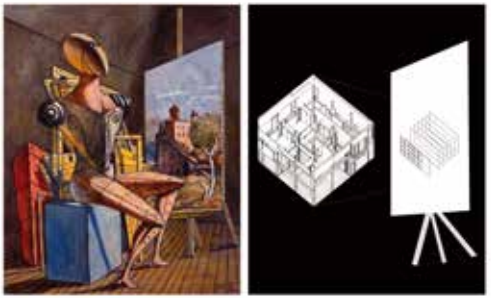
5. Colin, Rowe. "The Mathematics of the Ideal Villa. Palladio and Le Corbusier Compared." *The Architectural Review* 101 (1947): 101-4.

Comparison 'For'

If Colin Rowe is still focusing on the static architectural image comparison, a kind of post hoc analysis, then Eisenman is more concerned about the analogical process of form transformation, that is, from blank to the generation and evolution of form, comparison as self-annotation. His theories on architecture pursue the emancipation and autonomy of architecture and represent the constant attempt to free form from all meanings. Peter Eisenman investigated Terragni's formal and linguistic strategies,

underlining his peculiarities compared to other protagonists of the Modern Movement and the overcoming of functionalist dogmas. Terragni became the comparative basis of his design research for a long period. The reading of a building need not result in a sequential, progressive, and ultimately singular narrative; instead, its meanings can be temporally complex, partial, and contingent.

In the process, Eisenman, as a researcher, has not yet fully distanced himself from their identity as a designer; he functions more as a “designer-researcher”. Through this mode of comparison, they engage in design and related activities, accumulating knowledge through the reflection on their personal experiences, feelings, and insights; somehow, it can be described as “architects writing about themselves”. According to Eisenman, Terragni was able to effectively overcome, with his compositional and decomposition



Comparison ‘for’ (The Contemplator, Giorgio De Chirico, Casa del Fascio, Giuseppe Terragni, House II, Peter Eisenman, graphic re-elaboration by the author).

strategies, bringing the writing of the façade back to the foreground, the functionalist statute in search of new architectural forms, a postulate of rationalist architecture, which, as he wrote, “in their relations of empty and full, of heavy masses and light structures have to give the observer an artistic emotion”. In one of his early essays on Terragni, he indicated his intent to use these strategies as “prescriptive design tools”. While formal analysis is a valuable art-historical method, it can become merely descriptive, an exercise in intellectual gymnastics. Not only was the history of form rewritten. Through this ‘alternating reading’ of Terragni’s work, Eisenman would subject “form” itself to perpetual revision through an exhaustive sequence of operations: transformation, decomposition, grafting, scaling, rotation, inversion, superposition, shifting, folding.

Comparison ‘Through’

If the first two comparative approaches focus on the formal comparative interpretation of endogenous discipline in architecture, typology investigates through a certain dialectical relationship with technology, function, style, and the aggregate character and individuality of buildings. The scope of study extends beyond design phenomena that concern designers, encompassing phenomena related to the built environment.
In *The Architecture of the City*, Rossi argues for the isomorphism of architecture and the city and explicitly declares that the city is self-regulating. But at the same time, Rossi also pointed out that there are two systems of research in the urban field: “the city as a product of its architecture and space in the formation of a functional system”, which corresponds to otherness, and “the city as a spatial order”, which corresponds to self-regulation. He emphasizes that his research “develops the discussion in the second system”, but

"also focuses on the facts of the first system that raise important questions". Comparison is a basic tool in the interpretation of these questions. In the introduction to Aldo Rossi, Architecture, and the City, Eisenman implicates the critical position of comparison in architecture representation, an iterative relationship.

"The architectural drawing, formerly thought of exclusively as a form of representation, now becomes the locus of another reality [...] In this way it, and not its built representation, becomes architecture: the locus of a collective idea of death and, through its autonomous invention, of a new metaphysic of life in which death is no longer a finality but only a transitional state".[6]

For example, the complex of buildings in the center of Rossi's cemetery is a direct typological reference to Roman burial,

6. Aldo Rossi. *The Architecture of the City.* (MIT press, 1984 :10-11).

Comparison 'through' (Mysterious Bath, GiorgioDe Chirico, La città analoga, Campo Marzio dell'antica Roma, Giovanni Battista Piranesi, A Simple Heart, Dogma, San Cataldo Cemetery, Aldo Rossi, graphic re-elaboration by the author).

which came from another source, Giovanni Battista Piranesi's reconstruction of the Campo Marzio in Rome, as he imagined it stood in late imperial times. Hadrian's tomb sits on a square base near the river. Beyond this square is a U-shaped group of buildings marked Sepulchra. They embrace the bottom of a fan-shaped structure designated by the word cryptoporticus. At the apex of the fan sits a round building called Basilica. The correspondence in general layout between the Piranesi and Rossi plans is too close to be accidental. Rossi, who knew this Piranesi work perfectly well (a fragment of it appears in Rossi's drawing The Analogous City, 1976), has lifted Piranesi's vision of an Imperial ancient city of the dead within the context of late-antiquity Rome and placed it in the middle of a 19th-century cemetery plan. Both types (cemetery and housing) are reworked and combined: precedents matter in terms of form comparison but not in terms of meaning; the type, in fact, takes an almost literal sense, following the definition of the columbarium as "a room or building with niches for funeral urns to be stored.

In an AA article from 1995, Adam Caruso wrote that buildings are about many things. Their design develops out of a set of complex and changing circumstances, and once built, the 'meaning' of a good building can shift and remain relevant as its social and physical situation changes. The same can be said of a good comparison method or a set of comparisons. This momentary suspension of historical time enables us to identify structural analogies between buildings of different styles and appearances, boiling them down to an essential idea. It is through this multi-dimensional upward comparison and questioning that architectural research continues to revise, revisit, and redesign of works belonging to the past, seeking persistent knowledge.

These strategies produce a narrative that overcomes the specificity of the time to establish surprising architectural discourses. Any comparison, into, for, or through, implies a hypothetical endogenous bond and, further, becomes an exogenous debate.

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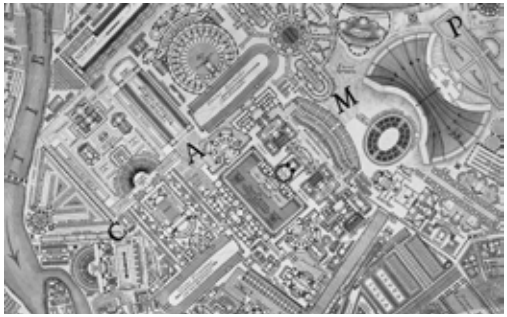
Montage in Architectural Design-Driven Research

Zhengwen Zhu

As Giovanni Battista Piranesi did in the hypothetical reconstruction of the Roman Campo Marzio, montage becomes the essential tool for architecture design-driven research. In the process of the montage by assembling new narratives from old to produce fragments of imagination, Piranesi becomes a researcher not only on the study of design but also on the process of knowledge production, inventing an unlikely urban plan montage composed of different historical urban components. Juhani Pallasmaa indicates, “Montage creates a dense non-linear and associative narrative field through initially unrelated aggregates, as the fragments obtain new roles and significations through the context and dialogue with other image fragments” (Pallasmaa 2011).
In research by design, the researcher needs to consider design as a specific form of research, the object of research, and clarify how research might potentially



Giovanni Battista Piranesi, *Campo Marzio dell'antica Roma* (detail), 1762.

inform design (Schoonderbeek 2017). Design is described as explorative and innovative, exceeding the limits of the body of knowledge both in a methodological and a theoretical way. It explores several truths and studies multiple futures; hence, it is “non-cumulative” (Roggema 2017).
This kind of characteristic of design demonstrates the nature of contingency and eventuality and inevitably prompts the design-driven research to move toward the statement of montage, which emphasizes the collage and juxtaposition of the fragments from related fields of knowledge and phenomenon. Montage does not mean that design-driven research has lost its logic or rigor nature. On the contrary, montage directly points to the essence of design, which is to extract clues from complex information for service design and research and use unique narrative logic to reorganize knowledge and materials. This way achieves its logical and structural self-consistency, produces new knowledge and unexpected forms and contents in the process of design and research, and iterates the old cognition as Herbert A. Simon indicated, “The natural sciences are concerned with how things are [...] design on the other hand is concerned with how things ought to be” (Simon 1969). Montage is not a boring self-entertaining play, but its purpose is to create connection, friction, and tension, especially conflict and alienation between fragments, to stimulate and create new events and discourses, and to project possibilities for the future.
Montage plays an important role in all three form dimensions of architecture design-driven research, namely writing, drawing, and design. In the writing, as Walter Benjamin elaborated in The Arcades Project, “Method of this project: literary montage. I needn’t say anything. Merely show. I shall purloin no valuables,

appropriate no ingenious formulations. But the rags, the refuse—these I will not inventory but allow, in the only way possible, to come into their own: by making use of them" (Benjamin 1999). What the writing way strives to reveal can be found in many illusions triggered by a montage of material juxtapositions rather than a standard solution of academic texts. "This book is an interpretation of that Manhattan which gives its seemingly discontinuous - even irreconcilable - episodes a degree of consistency and coherence, an interpretation that Intends to establish Manhattan as the product of an unformulated theory, Manhattanism." In *Delirious New York*, Koolhaas developed a practice of configuring textual fragments in an allegorical montage mode as a way of constructing architectural criticism to organize the contents, "In terms of structure, this book is a Simulacrum of Manhattan's Grid: a collection of blocks whose proximity and

Rem Koolhaas, Madelon Vriesendorp, The City of the Captive Globe Project, *Delirious New York*, 1972.

juxtaposition reinforce their separate meanings" (Koolhaas 1978).He collages various elements and fragments together in an incredible Manhattan way, which is also reflected in his large amount of design practices like the fragmented description in Villa dall'Ava, successfully providing a muse of inspiration for the landing of the paranoid-critical method. In other words, paranoid speculation is conducted amidst the dizzying heterogeneity and fiction of montage, and finally, the density of the real is reached. Montage writing requires the researcher to have extensive knowledge reserves, the ability to quickly and accurately identify and pick up fragments needed, and rich but logical association capabilities. To be clear, When making a montage of related topics, the relationship and order between them are particularly important, which will determine the outcome and logic of the discourse. Topics montage in writing is like what happened in the film. Sergei Eisenstein pointed out that discrete fragments only acquired meaning in their controlled reorganization with each other. "The essence of cinema does not lie in the images, but in the relation between the images!" (Aumont 1983). Imagining visiting the Acropolis, where various fragments are arranged in different positions, the visual sequence determines people's spatial perception of the Acropolis. But is the process of the Athena Sacrifice Ceremony the best sequence way? Obviously not. This is the beauty of montage, stripping of the original meaning and giving new meaning to the objects and the relationships between them according to the researcher's own will to construct a private Acropolis. Ancient Greece has faded away, and there are just fragments. From "With Palladian Buildings to The Analogous City", organized around the structural principles of image destruction and reassembly, montage is considered a

contemporary paradigm in the drawing way of architecture research by design. Distinguished from other forms of drawing, such as typology catalogs, detailed technical drawings, or formal analysis that serve as research tools, montage drawing offers an imaginative field and experimental chance that points directly to the core of design with a radical gesture, namely, how to extremely extract and present the ideas and arguments from the materials. As John Hejduk talked about the Dot Game of Texas Rangers, which actually originated from the surrealists, “In retrospect who would have thought those plans of Classicism, Neo-Classicism, Modern Constructivism, [and] Contemporary would have been the genetic coding of the architectural monsters which followed?” (Caragonne 1993), the objects’ respective experiences, perceptions, and memories are brought to the foreground, but in never-foreseen defamiliarization, to invent the unexpected possibilities. Another example is the montages of the Continuous Monument project produced by Superstudio, which pitted abstraction against the photographic image to encourage critical interpretations. Montage plays with fiction and reality, fantasy and fact, history and future in drawing, and develops research and design discourse.

Bernard Tschumi’s montage embodies an attempt to work with the tension between space and program based on his ideas. In *The Manhattan Transcripts*, He uses Derrida’s deconstruction principle to mediate scene and script, type and program, objects and events with a contemporary understanding. In the later Parc de la Villette, composed of the superimposed three separate systems with their logic individually, Tschumi implemented the comprehensive combination of design, research, and drawing rehearsed in The Manhattan

Colin Rowe, John Hejduk and other members of the Texas Rangers, *Plan Game*, 1955.

Bernard Tschumi, Parc de la Villette Isometrics, 1986, in gouache and color ink on a gelatin. silver photograph.

Transcripts through the cinematic technique of discontinuity. Here, the montage design is an architectural representation of Derrida's re-contextualizing of the text where new meaning is found when the context changes, and this process of the assimilation of heterogeneous fragments into a novel assemblage reflects the intrinsic instability and contingency of meaning, accentuating the reality that interpretations are not immutable but rather modifiable, a territory of defamiliarizations was produced accompanied with a full spectrum of montage tactics.

"Human desires in every present instant are torn between the replica and the invention, between the desire to return to the known pattern, and the desire to escape it by a new variation" (Kubler 1962). If imitation is to create meaning by using a type that has universal validity in the past, then montage is the slice combination of imitation; it is indeed the furthest variant from the original and often mixed with others. In the process of architecture, from repetition to invention, montage provides a powerful imaginative tool for architectural design to avoid the fate of becoming mediocre or inferior imitations. For imitators, the montage focuses on the variation and reorganization of the design objects' architecture types, namely their formal structure and spatial types, and its consequence is the most advantageous weapon against the conventional and the superficial, and even liberating form from semiotics and history. Like the separation of reading experience from the perception of meaning, the montage tool is unlike analogy since the former focuses more on conflict, deconstruction, and difference, considering its heterogeneity and defamiliarization. In the Vanna Venturi House which inspired the Postmodern movement, Robert Venturi played with

traditional elements, such as a gabled roof, an arch-framed entrance, and the asymmetrical fenestration, with the original meanings removed, and shaped the inside space as the montage of space of Michelangelo way on front and Le Corbusier way on back. “Architects can no longer afford to be intimidated by the puritanically moral language of orthodox Modern architecture,” Venturi wrote in his book *Complexity and Contradiction in Architecture*, “A valid architecture evokes many levels of meaning and combinations of focus: its space and its elements become readable and workable in several ways at once” (Venturi 1977). It should be noted that montage is after the comparison study of the architectural features or prototype, and its result should not be an assemblage of uncritical nostalgic imitations.

An indisputable fact is that “Architecture is a form of knowledge that can and should be developed through research,

Robert Venturi, Section of Vanna Venturi House, 1962.

and good research can be identified by applying the triple test of originality, significance and rigor" (Till 2008). Thankfully, whether in writing, drawing, or design, excellent montage way can always play an important role in the evolution of architecture knowledge research, keeping the distance away from terrible plagiarism, boring general repetition, and logic that fails to stand up to scrutiny. Besides, montage requires great skill to be conducted; otherwise, it risks losing itself. Ambiguous and incomprehensible montages can cause great confusion in architecture design-driven research, and the result is either conceptual and narrative chaos or a crude, superficial monster. The point to avoid this mess and abuse is to realize that montage is not only a technique of expression and reorganization but also a key tool in the foundation of architectural thinking and research, and its concept is a direct result of the idea of creativity and comparison, the communication with imagination cautiously and bravely, the attitude critically towards the issues and debates rather than just empty text, images and research.

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