

Research vs. design, a favorable conflict

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When we look at research in the field of architectural design, we meet, from the very beginning, complicated questions and very few practical instructions and solutions. An open question, treated in many different conferences and texts, it is clearly described by Marc Belderbos and Johan Verbeke, in the Call for Papers for "The unthinkable doctorate" (2005, 14): "Most doctorates in architecture are developed within the so-called architectural sciences, that is in history and historiography, theory, monographs on architects, or further into other sciences 'of architecture', where architecture becomes the object of investigation. Even when this work is done by researchers who are themselves trained as architects, it is rare that they maintain their status as practitioners. All of this doctoral work is useful, but there are very few that: - produce a specifically architectural reasoning, from within architecture rather than from its numerous neighbor disciplines, - furnish tools or constituent elements of contemporary, historically-situated architecture. There is little choice but to consider that many of these doctorates will run the risk of 'advancing' a 'science' without any clear mandate, a blind encyclopedic enterprise whose only purpose is the accumulation of undifferentiated information. One might then worry that too much of current doctoral work helps to advance this orphaned, deracinated science, without stimulating any progress in terms of knowledge. In other words, this type of work seeks to know about architecture as a product without knowing architecture in its structures and determinations."

On one side, it is evident that "architectural design, built and unbuilt, can communicate architectural ideas beyond the scope of the project itself" (De Walsche, Komossa 2016, 10), and this point is focal in the education of future architects. "Learning by doing", in the versions of "by drawing" and "by design," can be fundamental for teaching our discipline. At its very core, the architectural design contains theoretical questions that any designer has to consider if he wants his work included in the field of architecture. This possibility is always present, but we often recognize it more as a problem than as a chance, all the times architects want to be just technicians, problem-solvers, technocrats, delivering an architecture naked of any self-criticism, reduced to some technical and procedural processes.

Anti-Theories Ideologies

To imagine architecture as a pure practice is a recurring dream that periodically invests our culture. In 1936, Ernst Neufert published the *Bauentwurfslehre*, an admirable work of re-setting the entire world of architectural elements. It was an encyclopedia, a Bible that could aspire to eliminate any theoretical question, putting the entire design under the functionalistic domain of a new technocracy. It was instrumental and convincing, for designers, furnishing a complete and accurate repertoire of technical and typological directions. The Neufert's work was a long-seller which, for decades, greatly influenced the teaching and the making of architectural design. Its prescriptions, exact and indisputable, exploited the nucleus of a peculiar kind of functionalist architecture that, with many phenomena of degeneration and perversion, populated the suburbs of the European cities thirty years of the post IIWW

reconstruction and economic boom (the so-called *Trente Glorieuses*). Conceived and firstly published in Nazi times, the Neufert's was based on an ideology of silence, on the denegation of any critical articulation and contradiction. Analogous approaches, based on dogmatic anti-theories, flowered on many different questions, often relevant and urgent, giving abundant sources of inspiration to designers and planners. Social and political issues, CO2 emissions, sustainability, and affordability, are just some of the more common flags that array architecture among their necessary instruments. Then, these convictions use architecture as one of the necessary tools. Moreover, this role, for architecture, is undeniable: architecture is a natural tool for political propaganda, for national cohesion, for making a better environment, for giving a home to everyone, and for many other goals belonging to various politics and moralities. Hierarchically, architecture submits to society, to its political, economic, mediatic powers. Then, the question is where research in architecture must address its targets. In a productivist world, as a post-capitalist society mostly is, research should reach tangible, miserable results. Research should provide solutions for better social interactions in housing, the environmental quality of workspace, the performativity of building technologies, and the like. These goals, measurable and transferable to various fields, in policies, and industry, are essential, socially, and academically acclaimed. For instance, this research finds a precise place and proper perspective for funding in the European programs arena. This approach generates a technocratic derive, the Neufert's one, which makes irrelevant the theoretical, artistic, and critical aspects of architectural design. There is little or no space for hesitation, criticism, uncertainty, and cultural debate, in the positivist world of technocratic architecture.

The architect as a craftsman

The second path of architectural culture, which is possible to consider illusionary as the first one, is the architect as a craftsman. Remembering the craftsman's portrait by Richard Sennett, the good, adult craftsman is the one who works on a specific task for ten thousand hours, a time that allows him to incorporate the job deeply in his mind and body. The craftsman is another consistent mythology, probably nourished by the sense of guilt that designers feel about their distance to the world of the matter, the construction, the real thing.

Sometimes architects forget that they have to make drawings and not buildings. Alternatively, to better say, they start considering that the set of drawings of the architectural project is no more enough. They doubt the relevance, centrality, and noble statute of the project. Often, the doubt comes from the undeniable fact that non-architects cannot understand and evaluate our drawings' quality. This point is severe, a problematic node to cut out, and that substantially impacts research. If the production of architecture, aka architectural design, is entirely understandable only by architects, the question we have to address in our research collides with the same obstacles. Which reader, if not an architect, can appreciate our research?

It is essential to recognize that this question is pivotal. There are fields where research is oriented to an external target: research on chemical products, or mechanical innovation, can refer to the industrial production of them. Other researchers address the scholars of the field only. An in-depth analysis of medieval poetic or philosophical texts hardly can reach an audience out of the finite and probably small circle of experts. Architecture acts in an intermediate space, where the clarity of intention often exceeds the design's quality. As any architect knows, clients' and communities' expectations are directed to the premises and effects, while little is concerned with the quality of the design itself. Then, what remains foreign to our external audience is the core of our activity, and we consider that it is precisely in that part, hidden for the others, that stays the research attitude of architectural design.

The Hidden Research

There is no doubt that design is more a technique - or an organized and flexible system of different techniques - than a science. It is difficult to fit it into the parameters that many other disciplines share without particular problems. For architecture, study, observation, recording, and understanding of reality always aim at goals that, however convincing, remain questionable and based on elements that cannot be wholly objective and accepted. The personal and creative aspect, the design's living heart, becomes a challenging obstacle to scientific codification. Indeed, this ambiguous status of architecture, specificity, and interweaving of profound implications with many different branches of knowledge, from techniques to the arts to the social sciences, is the source and the reason for its richness and cultural uniqueness.

Therefore, the carrying out of an architectural design doctorate must address these disciplinary problems. It must identify the topics that compete with it. These are the issues that belong to other fields that are often very close but even separated by different methodological rules and goals. We have to explore and treat the possible contiguities with historical, urban, and technological studies with caution; to avoid research paths that would drive from our course's focus.

How to overpass these ambiguities is something that we cannot easily put in an exact form. Then it is necessary to accept the challenge that every research must somehow build its premises, motivations, and the boundaries of its field. It is very similar to what happens when an architectural project has to express the order that inspires and regulates it. Fluid and recurrent issues cross our field; our discourse must self-determine its profile, it has to find a balance in a continuous oscillation in a process that must combine "learning by doing" with a critical gaze, open to confrontation and change.

An investigation of research methodologies cannot provide recipes that do not exist. However, it can give a precise scenario of the appropriate tools and help gain a full awareness of the terms of research development, with which methods and with which results.

This research dimension's clear perception, embedded into the design process, remains complicated, blurred, hidden by many obstacles, occasional accidents, contingencies. However, we architects must trust in the possibility of unveiling these contents, assuming design into the sphere of the research, mixing up theory and practice, academia, and the professional world.

Moreover, this is possible if we fix some possible directions. An important one is never to forget how design can be useful in communicating architectural theories and techniques. Andrea Palladio perfectly explained his theory through *Four Books of Architecture* (first published in Venice, 1570), densely populated by drawings of architectural elements, classical orders, ancient and past buildings, melted with his projects of palaces and villas. The Four Books are entitled to the classical orders: urban townhouses and country villas, infrastructure, temples. This organization follows a typological scheme, without any distinction between historical context and authorial data. In modern times, Le Corbusier chooses to illustrate his manifesto *Vers une architecture* (1925) with cereals silos, factories, infrastructures, axonometric views of classical monuments, la Cité of Tony Garnier, liners, airplanes (a lot of), cars, pictures of Roman monuments, the Acropolis, and his visionary projects. Again, in *Learning from Las Vegas* and *Delirious New York*, we find that the authors present their projects to corroborate the theories elaborated

in those remarkable books. The same technique, a theoretical report supported by projects by the author, is the foundation of the "Practice-Based Research" program, activated by RMIT, organized on a self-reflective activity of the practitioner and two "Practice Research Symposia" per year, with public presentations and critics. Leo Van Shaik, the conceiver of this specific format, remembers that "as soon as I was appointed Head of Architecture at RMIT in 1986-7, I invited architects with a body of work admired by their peers to enter into the business of 'surfacing the evidence about their already established mastery' within a critical framework that I would curate: a framework consisting of their peers and of invited outsiders from other cities, and open to observers" (Richard Blythe and Leon van Shaik, 2014). Van Shaik noted that architects "are not really trying to extract an understanding from what was happening when they were doing their work and therefore not ever understanding or claiming what they were doing and always being in the position of supplicant, regarding themselves as dwarves in the world of intellectual change, always looking up at these giant heroes usually sitting in New York, London or Tokyo, sometimes Paris." The Australian condition's marginality is a detail in a general condition that professionals suffer in front of the cultural milieu. Van Shaik thinks that "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." So, the doctoral research theorized and realized by van Shaik started with an act of autonomy and insubordination. The enemy was literate intellectual architects' authority, powerful in those decades, which relegated practice in the deep shadow of commercial and trivial business. This text is not the place for a detailed analysis and an evaluation of that experience. However, it is clear that the van Shaik theory, or anti-theory, establishes a strange, involuntary relation with other histories of those same years. For example, we think of the experience of the so-called cardboard architecture. This design considered the project more as an act of research than an operational action finalized to the construction. In a way, we see a symmetrical correspondence between the self-reflective practitioner enrolled in the RMIT doctoral program and the cardboard architect, mostly Italian or American, who designs free from any constructive ambition or constraint. Both of them unveil and put in full light the design process, the making of the project, the part of the architect's job, which remains private, hidden, unknown, and undescribed. Ethnographers of architecture, such as Dana Cuff and Alben Yaneva, did remarkable investigations about what architects do. However, we now have another question: what happens when the researcher's projects are not the core of the research, and the real project is the research itself?

Research vs. Design

With formulas like "Research by Design" and "Design-Driven Research" we identify another field. The position and the relation between the two poles: Design, and research, are fluid, arranged, and manipulated by the research development. If we look at the specificity of the different research works, we see that the question becomes more transparent, in practice and more blurred, in theory. The theoretical debate is very dense and developed, and it is a continuous source of reflection and inspiration. We want to focus on the practice, which is the direction we try to give to the research in our Ph.D. program of "Architectural Urban Interior Design" at Politecnico di Milano.

First, we have to admit that we come from a recent tradition where the design was considered separated and different from research. We want to break this separation, starting from an exact point: any research made in our program must have a design section. The word itself now matters because its meaning is straightforward but

extensive, comprehending a growing set of activities. The recent book by Beatriz Colomina and Mark Wigley on "an Archaeology of Design" defines the design as the best representation of any human activity. Everything the man does, this is Design, a complex and coordinated series of actions that produces something that can be considered original and new.

The statement is indisputable, and it becomes even more interesting if we apply this thesis to research in architecture. In other words, it is useful to imagine that any research in architectural design is design. The challenge is to take on the surface of this underwater work. This hidden force is the real actor of the research. However, it remains poorly visible and camouflaged because there is a lack of coherence with the scientific world. Architecture makes part of it, correctly, but always with some discomfort, with some irrepressible specificity. Framing the design component is a target that can follow various and very different paths in the development of any single research. However, it is not impossible to fix some simple suggestions that can open spaces for the design.

The goal, or the strategy, is to break the research's continuous conventional tissue with acts of design that are intrusions, openings, interruptions, detours, and even disturbances. These actions may find an organic relation with the whole of the research, but it is probably that often this harmonization, between text and design, does not happen or remains unstable, critical, questionable.

It will be frequent that design enters into the research tissue as an intruder, an unexpected host who alters the balance and bends the focus to a more technical, operational level. This shift will be conflictual, in relationship with the research's academic part, taking inside the author's role, her/his specific point of view. There must be a space for the will of an architect who, as a designer, is ready to take the responsibility to attest a unique vision. The opaque authorship, defined by the written text, necessarily and correctly respectful of a scientific approach, will gain a vivid presence affirming another scientific propriety, the architect's technical, artistic, and humanistic knowledge. We can find the research's true architectural essence and quality in the tension between the two different media: the text and the drawing. Then, we recognize the relevance of adopting the sharing methods of academic writings and, at the same time, we never give up on the centrality of the architect's *forma mentis* where approaches, attitudes, horizons, and goals are all shaped by the culture of design. Finally, we can keep in mind the brilliant statement of Herbert A. Simon: "The natural sciences are concerned with how things are... design on the other hand is concerned with how things ought to be." This phrase entirely indicates the architect's perspective, based on a constant engagement with reality and straight projection into the future.

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