Analogy: a translation method for Architectural Design

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Abstract:

What does it mean to do a master's in advanced design? What would be the difference between a master and a bachelor level degree in architecture? Do you need to choose a topic to narrow and deepen your vision or, in the opposite direction, do you broader your vision and explore more? Those were the questions I asked myself to write this short essay, this introspection, about the process of doing a master's in Advanced Architecture Design at Cornell. Cornell offers a wide, very wide, vision of the discipline. Moreover, the mixture with undergraduates produces an enormous laboratory of ideas even though the discussions or research can be a little superficial.

This essay is an attempt to answer the questions above. What has unified my experience has been a constant questioning about how the wide range of topics I have encountered at Cornell might be reflected (translated) into my own personal way of thinking and designing. I would argue that in this interdisciplinary world, where concepts and ideas are usually taken from a background outside architectural discipline it is imperative to discuss the method of translating those ideas into an architectural language. With that I mind, analogy presents itself as a useful tool for this ongoing, and probably endless process of translation and self-questioning. It is important to clarify that this essay is not an attempt to philosophically or linguistically define the term analogy, but a personal reflection about a possible methodological tool for designing. In fact, I would argue that ecology, urbanism, branding, and computational design, topics "far" from my usual discourse, have become integrated into my design thinking through both graphic and linguistic analogies. However, this essay will also show the limits of the method promoting a constant architectural debate.

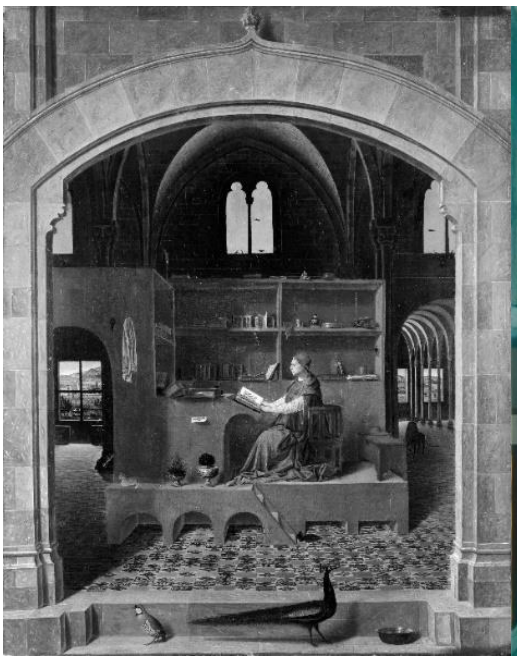
Table of contents:

Introduction: analogy and metaphor

The Studio led by Pezo von Ellrichshausen was part of an ongoing research about "free form". For the purpose of the studio, a collective painting, where authorship disappeared, was produced as a laboratory for "finding" architectural forms or shape. Those shapes, or abstractions, had different architectural and formal qualities. *"For the purpose of translating these formal qualities into our architectonic propositions, we deliberately avoid the use of concepts, metaphors or any reference whatsoever."* (Pezo von Ellrichshausen 2019) This constraint was based on Alberto Manguel's book *The Traveler, the* Tower, *and the Worm: The Reader as Metaphor.* The Argentinian writer explores the idea of a book as windows to see the world and illustrates the risk of using metaphors. He argues that the metaphor implies a weakness of the language by displacing meaning: "to enhance the possibilities of mutual understanding and to create a larger space of meaning, language resorts to metaphors that are, ultimately, a confession of language's failure to communicate directly." (Manguel 2013) Moreover, quoting Cicero, Manguel states the "metaphors are born from the poverty of language, that is to say, from the inability of words to name our experience exactly and concretely" (Manguel 2013). Nevertheless, as the studio declares the "observations might refer to other disciplinary fields (biology, sociology, psychology, philosophy, literature, etc.) as long as they mirror back into specific architectural elements (spatial proportions, sequences, sizes, proximities, directions, etc.)." This "mirroring back" is what interested me the most and represents how I think analogical thinking contributes to my design method. With that in mind, analogy, focusing only[1] on Aristoteles the mathematician´s proportion concept, can be demarcated as a *relationship*, a *ratio,* or a

[1] Acknowledging the complexity and the multiplicity of meaning and definition for the concept of analogy this essay will use the mathematical abstraction of proportion present by Aristoteles to explore its use in as an architectural design tool. The simplicity of that abstraction allows me to address architectural advantages and constrains of the method

proportion (Barbara Cassin 2014). In those terms, the relation or equivalents of the elements establishes a connection of attributes and not a figurative copy of the elements. That is why the math simple explanation for that relation states that A:B :: C:D. The elements can be completely different and yet relationally equivalent. This equivalence exists by a re-making, re-thinking of elements where the figurative aspects are not the key for creating the equivalence but the attributes of each element. If 3:9 is analogous to 1:3 (as the most simplistic example) the connection between 9 and 3 is based on attributes: odd number, multiple, etc. The effectiveness of the relationships depends on the understanding and reading of characteristics. Accordingly, for designing a house/library, this method was used for bringing different St Jerome paintings to study furnishing and architecture and the notion of studying and living in the same place.

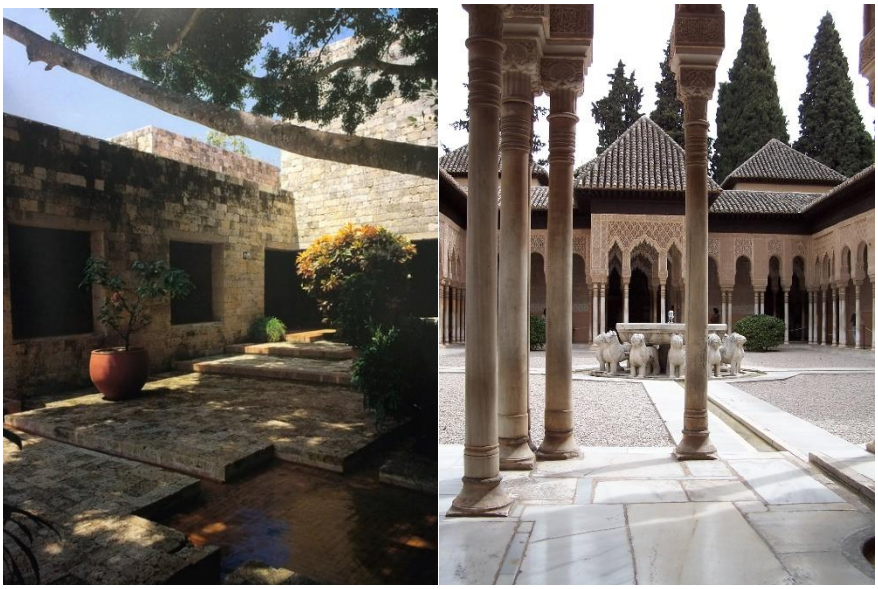


St. Jerome in His Study, Antonello da Messina **Interior image of the project, Acrylic, 40x40**

The free plan is interrupted by wood structures that contained the program questioning about the differentiation between furniture and architecture

“Architecture is not created but re-created”

Continuing with Alberto Manguel's book, the infinite library described by Argentinian writer Jorge Luis Borges (Borges 1941) emerged as the next opportunity during my studies to use analogical thinking for building the discourse and the project. Borges's spiral stair was then related to Rogelio Salmona's work. Salmona, a Colombian architect winner of the Alvar Aalto medal, based his designs on this simple notion of analogy as a tool of re-making, re-thinking as the primary architectural tool. Salmona developed a unique and original style; originality, according to him, is defined not as unique or new but, rather, by its etymology defined as the origin, or root. In this spirit, by constructing analogies between old Spanish and Arab architecture and Colombian as the most direct influence and heritage, Salmona sought to create an architectural language that defined Colombian architecture.



Salmona Casa de Huéspedes Ilustres as direct analogy to the Lion Patio at La Alhambra

Mapping: an architectural tool for interdisciplinary translation:

Although it does not belong to the architectural discipline, mapping has become the architects' primary tool for representing space in two dimensions. It is also a mode of thinking that facilitates the

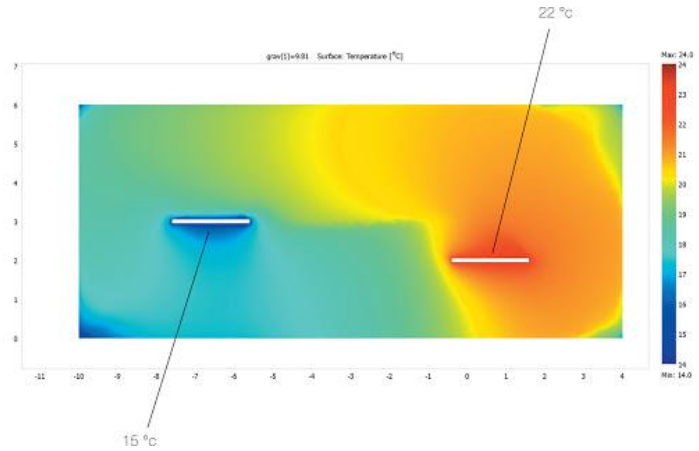
documentation, analysis, and rehearsal/testing of not so obvious relationships and processes in time and space. In this sense, mapping has become a critical tool for interdisciplinary architectural translation. During the summer studio in New York, led by Laia Mogas and Jorge Duro, the analysis and research of a natural material, natural resin, was translated into several diagrams and finally to materialize, in an analogous way, the biological information into architectural space. Mapping enabled a "direct" translation between scientific concepts and architectural language. This analogical translation allowed a practical and pragmatic architectural discussion that avoided the abstraction of discourse or theories based on other disciplines. Five maps were developed: smell, color, texture, and pressure to construct architectural qualities like light, transparency, softness, and roughness. Those graphical analogies show the implicit relationship between analogical thinking and the cartographic thinking where parts are put in a direct relationship by building bridges between the real world and two-dimensional drawings.

Color Map *Pressure Map* *Odor Map*

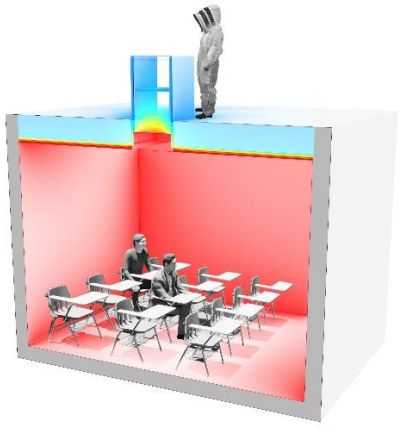
The mapping of resin qualities applied to the architectural shape bridged the relationship between biological properties and space

In the same direction but with a weaker output, Philippe Rahm's Studio, during the Fall semester of 2020 at Cornell, also used mapping as the primary way to represent physical and atmospheric concepts. These

maps had two purposes: the understanding and illustration of the concept, and as the seed for developing a new architectural language. The second purpose revealed some degree of superficiality where the pursuit of "beauty" surpassed the original scientific research.



Temperature map by Philip Rahm



Heat transfer diagram

The mapping of the graphical takes excessive control of the mapping undermining the study of the physical phenomenon and even the space produced

Learning from Branding: subject experience as the goal: analogy with gastronomy chef strategies

During the *Design in Real Estate* elective, the study of the significant growth in the importance of marketing, branding, and communication strategy throughout the world, became the basis for a new way of understanding architecture. This change is predicated on a shift in focus from *objects* to *relationships*. "Branding becomes a conceptual framework that no longer judges objects on their own merit but their effect on people and places" (Klingmann 2007). Therefore today, more than ever, architecture's capacity to provoke aesthetic experiences is "key to establishing cultural, economic, and social frameworks that suit our new routines and lifestyles" (Klingmann 2007). Moving away from the iconic object, architectural branding suggests greater awareness of the effects of repetition, coherence, and the agency of a creative process that puts the individuals and their myriad identities at its center. Put differently, the architectural

brand should engage (or play with) the individuals (users) emotions and perceptions. For achieving this it is necessary a constant invention and innovation within coherence and reproduction of methods, inquiries, and modes of communication in the effort to create a novel experience. A good example of this might be Absolut Vodka campaigns. In this campaign, the exploration of the singularity of cities, persons, or topics was addressed via a coherent repetitive strategy that built the brand identity.

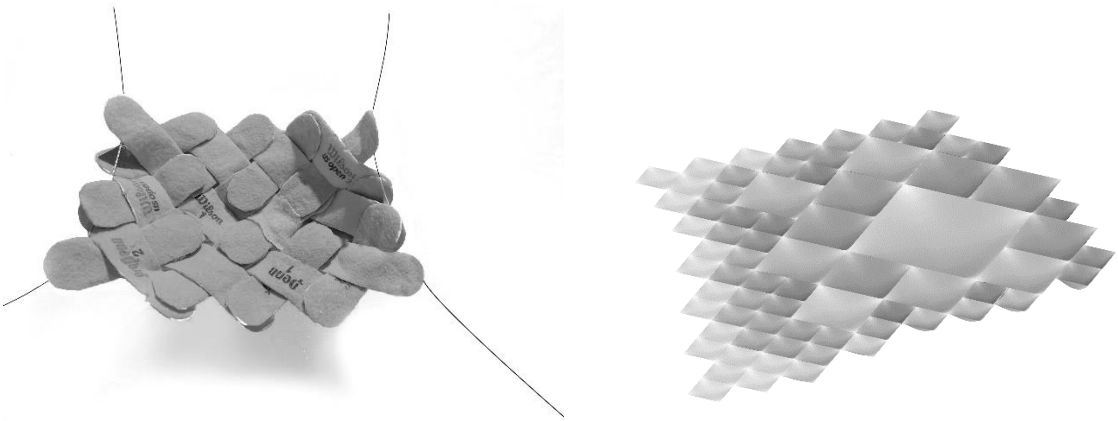
Absolut campaign collection

Nevertheless, even though texts and discussion during the semester address the topic, the question about how to translate this branding approach into architectural practice reminded un address during the elective. Some examples of Apple and Starbucks architecture language were studied but none in-depth for proper testing of the analogy between commercial branding and architecture.

Painting and physical model making as an analogous to the construction process

In Caroline O'Donnell's studio, during the summer, the aim was to choose a material that was hard to recycle. For my project, I chose the tennis ball felt. By making a physical model with that material, an exploration of possibilities took place that helped me to find new architectural design methods and

languages. The new close relationship between architect-designer and the work material closes the gap between paper design and construction. In this way, the new explorations with materials give control back to the architect. Moreover, what is important, is that this close relationship with the material is allowing the production of models that are analogous to the construction process.



Physical model vs digital model
The physical exploration enabled a digital simulation for building a fractal strategy between parts and the overall project

This exploration of the relationship between materiality and process was deepened further with Martin Miller during the **Physics of Forms** elective. The exploration between material and computational simulation was the starting point for developing a pavilion. During this process, the model exploration was related, analogously, to the final construction part. This close relationship informed the design process achieving control of material, simulation, and final construction.

Additionally, in a different sphere but maintaining the same argument, analogical thinking allows the painting and drawing the reclaiming agency that in recent decades computers have occupied. Specifically, for the Studio led by Pezo von Ellrichshausen, the painting took place for producing final images. This process "slowed down" the production and allowed the discovery and even the mistakes to be part of the

process. In those terms, the process of painting is analogous to the construction process where time allows us to find and even correct the project. Similarly, the close connection between your hands and the product achieved a sensibilization and closeness between the project design and your ideas.

First painting session vs digital final painting
The slow process allowed us to discover new textures, colors, and light atmosphere. This process is analogous to construction where changes and evolution happens. In that order, painting moves away from being (only) a static representation of the project

Conclusion: the strength of the discipline

Different electives and studio gave me, through the personal use of analogical thinking, the opportunity to deepen and expand my design tools, and my discourse. However, at the same time, they showed me the limits of that strategy: not everything can be translated or analogous to architectural discourse and research. Moreover, I also discovered that the interdisciplinary moment academia is in right now offers incredible opportunities for architects to be part of a social and ecological transformation. The union (re-union) between architecture and science presents “new” tools, ideas, arguments, and discourse to study. However, it is extremely important to avoid the superficiality of pseudoscience and pseudo-scientific research. During my masters degree, I found that poor translation of science into architectural projects

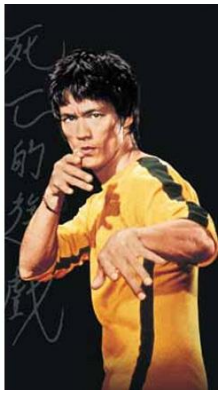
generates a weak architectural and multidisciplinary discourse. By contrast, coherent analogical translation allows an architectural debate that strengthens the discipline.

Lastly, a short illustration of analogies from other artistic disciplines can help exemplify my architectural analogous strategy. During the spring semester, at an art elective (*Painting film*) the reference of Tarantino movies, where a constant and "honest" re-making of old films serves as the basis for his movie's creation, shows how the re-making overpass the notion of the copy and creates new content. This analogous process constitutes a tribute to the past.

8 ½, Fellini

Pulp Fiction, Tarantino

Kill Bill, Tarantino



One Last Thing, Ferguson

With that in mind, after this master at Cornell, I developed (it is an ongoing probably process without end) this analogical thinking where metaphors, scientific concepts, sociological references, etc. can be part of my architectural discourse and design as long as they enter on a clear analogical system where the output belongs to architectural discipline and discourse.

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