Corrientes del pensamiento arquitectónico para el siglo XXI

Schools of Architectural Theory for the 21st century

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RESUMEN

En tiempos de virtualidad desenfrenada que amenazan con debilitar la realidad táctil de la Arquitectura, es importante establecer lo que es unívoco en ella: su capacidad de definir lugares usando elementos tangibles. Arquitectura es un hecho objetual, y aunque responde a un proceso intelectual, el producto es un objeto modelado o construido que históricamente ha tenido la capacidad de sobrepasar teorías establecidas. La profesión necesita continuar aumentando el valor de la obra exponencialmente debido a su potencial tangible. El objetivo del presente artículo es establecer lo unívoco en Arquitectura como visión significativa para su conceptualización y práctica. La metodología de análisis está basada en cómo los nuevos conceptos ideospacio, objetospacio, dataspacio y luminospacio convergen en el campo de lo tangible. Como resultado, se encontró lo unívoco como la línea fundamental para fomentar corrientes de pensamiento arquitectónico para el siglo XXI.

Palabra clave: arquitectura, objetual, proceso, tangible, unívoco.

ABSTRACT

In times when virtual applications threaten to weaken the tactile reality of Architecture, the univocal fact of Architecture must be established based on its capacity to define tangible elements. Although the process of Architecture is intellectual, it remains objectual, for the results are modeled or built with the historical ability to overcome the established theories. The purpose of this article is to establish the univocal fact of Architecture as a significant vision to conceptualize and practice. The method of analysis is based on how new concepts such as ideospace, objectspace, dataspace and luminospace converge in the tangible field. As a result, it is found that the univocal fact of architecture is the baseline to strengthen new trends of architectural thought for the XXI century.

Keywords: architecture, objectual, process, space, tangible, univocal.

Introduction

This article is inspired by the call to revive the profession taking care not to "try to institutionalize avant-garde rebellions, but to revise the inoperative, transform what obstructs the progress of humanity, and inaugurate an era that overcomes the very concept of civilization" (Castillo Molina, 2019, p. 55). The unequivocal in Architecture is exercised through the relationship between idea and object, which is automatic and prevents any philosophy, theory or ephemeral process from disrupting the tectonic potential of Architecture, revealing tangible evidence as something irrefutable.

The aim of this article is to establish the unequivocal in Architecture as a significant vision for its conceptualization, practice and new ways of thinking, and this will be approached with an analysis methodology based on new propositional concepts that emerge and converge in the field of the tangible, denoting that the profession surpasses the immediacy of Information and Communication Technologies (ICT), a matter relevant to the central theme of this publication.

This article is not against the theories and philosophies that have tried to define the profession throughout history but focuses on how the tangible potential of Architecture guarantees true cultural value. The last century was a time of contradictions and rebellions (the avant-gardes), but today, there is a vast amount of culture and information to manage those turbulent vestiges and move toward optimizing knowledge by avoiding the ruse of conflict, and increasing the capacity for imagination and logic reflected in the surrounding tangible context. There is no need for confrontation, but rather to strengthen and make sense of the overabundance of knowledge. And if the past millennium was a time of fertile intellectual struggles, now is the time to develop the inventions derived from that era, a process that will continue helping cities emerge.

Although virtual means of exploration are changing the perception of the built environment, it is an era where the presence of the object, as a physical fact, plays a significant role in the careful use of the planet's limited resources.

When this article talks about Architecture, it refers to any design or construction with tangible presence, and not to the Philosophy, History or Theory of Architecture. Likewise, one is aware that the profession has the capacity to be based on poetry, but that field requires special attention beyond the space destined for this essay. It is necessary to clarify that the concept of Architecture presented here is a reference framework for understanding the concept of the unequivocal and does not condemn diversity, since it is introduced at a time when every architect has the freedom to elaborate their own definition of the profession.

The following chapters are titled using composite neologisms invented especially for this article (*ideospace*, *objectspace*, *dataspace* and *luminospace*), which consist of the union of two words where neither of the two has priority, but form a conceptual unit that combines the best of both meanings - a convergence of ideas. All these new concepts have as common denominator the word "space", because it is the universal expression of Architecture.

Ideospace

Ideospace is the space imagined in architecture. The neologism is the resulting combination of the term *ideo* (derived from idea) and space. It is true that every architectural space comes with an idea, although in the case of vernacular architecture repetition takes precedence over ingenuity, but in *ideospace,* the idea is intentionally exposed. The idea is the mental construction of the intellect, that because of its immaterial character, can expose the whole work or only part of it, revealing its beauty throughout each stage. The idea is infinite and can be discussed regardless of architectural time.

It is also frequent or recurrent without losing its potency due to its abstract nature; it is a pure source of inspiration and is a genuine means of intellectual formalization (Asymov,

1959). Ideospace brings with along a vision that transforms the idea into an artifact. For example, the invention of the wheel was revolutionary not because of the wheel itself, but probably because of the idea of moving things faster and with less friction than the old rollers. Obviously, the invention itself is important but it is the idea what makes it crucial. Likewise, a singular idea has the capacity to branch out into multiple forms and provoke a chain reaction of inventions. From the warlike projection of reaching a goal at great distance arises the invention of the rocket, and consequently the conquest of outer space emerged, opening the way to the invention of satellites, explorer robots, orbital habitats, starships, space stations and other products of the space race, proving that the idea legitimates discovery. Beyond being an achievement, it is a resource and a trigger, they need to be structured, tested and generated more. Just as knowledge is used to create ideas, which grow as civilizations evolve.

Ideospace increases its potential in the avant-garde world. The importance of avant-garde aesthetics lies in the images that form them, those that mature and finally detonate new ideas for change. The avant-garde, as experimental and fertile fields where everything is possible, are the ecosystem of the ideospace. The world of construction has another way of producing unexpected ideas through unforeseen events and accidents, because by analyzing the negativity of the accident of an object, one can develop this same object in order to perfect it, to humanize and civilize it [...]. (Rial Ungaro, 2003, p. 86).

Ideospace can be enforceable and implemented. The first (applicable) is that still in incubation that waits for the right moment and resources to become fact. The second (implemented) exists, is present and ready to be reused within the same field that originated it or outside thereof. Both can impact the observer through the tangible as an ideal means to establish the ideospace and eventually examine it in Philosophy. For example, the History or Theory of Architecture need it to validate data and reconstruct the thoughts that accompany the evolution of the profession.

Different media serve as an ideospace communication pipeline, and according to the chosen medium it can be basically understood in two formats: abstract and concrete. In the first, it dematerializes, resides in the mind of the creator, and needs imagination to shape the whole vision. In the second it is transmitted by specific means such as films, paintings, objects and music, and in this set it is structured and ready to be valued; the visual world (the image) is a silent field that completes the dynamic between the object and the thought - the fertile environment.

In Architecture, ideospace is concretized in projects (buildings, artificial landscapes or complete cities) which use other parallel means to disseminate it such as magazines, cinema or literature, all of them having in common that imagination is the main energy source of invention. This shows that if the ideospace is well thought out, it can pass from one format to another without losing its relevance, which is one of the reasons why it accompanies the process of architectural conception, where one can navigate between science and art without losing their original output.

Ideospace inspires technologies. Its discovery generates what kind of tools are suitable to materialize it. The opposite is also true, since the emergence of new technologies is expected to generate a new ideospace, establishing what kind of ideas are produced per type of tools. There are cases where both processes converge, for example, the immediacy of digital manufacturing in Architecture increases the speed of configuration of the ideospace, and its materialization is almost instantaneous; the production time is reduced due to the calculation of trial and error which is automated by digital simulation programs. This experience sends the architect's imagination into an unlimited creative zone, while increasing the tangible precision of their proposals.

Objectspace

The objectspace is the physical geometric form of architectural space that functions in the manner of a Japanese ideogram where sign and meaning are inseparable. It is what guarantees that the tangible holds a unequivocal presence in the process of architectural thinking. The word is the resulting combination of the terms object and space. Object-space shows how ideospace can be objective and useful to be implemented in real projects. Its dimension is tangible, and reaches its zenith in the developed work, where the observer easily assembles the whole idea, guided by tactile qualities that increase the level of reality through texture and light.

In the design process there are virtual reality and models as tools to explore the object space. Recently, virtual reality has become a form of almost real understanding of Architecture, but the observer needs additional equipment (helmet and gloves) and to restrict their radius of action to a small portion of space (approximately 3.00 x 3.00 square meters) since the movements are still mainly simulated in the human brain (Kurzweil, 2005).

In the design process, models (physical architectural layouts) are used as "visual tools" (Lambert, 2001, p. 215); architects can easily visualize a concrete image mentally and complete it in the model, which helps them confirm or question their vision even through a conceptual model. Although models are time consuming and are not recommended to design everything down to the last detail, they are a necessary evil to test the formal qualities of architectural design from a palpable angle. It is true that in the model the observer does not reach total immersion as they would in VR (virtual reality), but in both cases, imagination comes into play and becomes the intellectual resource par excellence of the architect as a thinker.

The object space evidences that Architecture is not an idea, but a socioeconomic product of civilization. Even when it is in drawn or modeled form it is still present, ready for schools of architecture to use it to improve the way the built environment is thought of, and to open up fruitful conversations between academia and practice - the physical is the means of convergence between the planning and execution of space. What is built outside the classroom is not the product of the architect, but of the real complexities of the profession. The architect's mind is completely different, because it is full of infinite solutions that make even the riskiest idea possible.

The Power of Thought is reduced when it passes from theory into practice; if one works only with the empirical, the essential conceptualization is lost in the process. In order to break the disassociation between the two fields (theory and practice), this cannot be achieved through the same stances held today (very theoretical academy vs. very empirical practice); on the one hand, the importance of the tangible in schools of thought (objects and space) must be written and debated, and on the other hand, the relevance of the architectural idea in practice (ideospace) must be cultivated in order to advance the profession towards an intellectual and technical harmonization.

Objectspace challenges the process of thought and experimentation of Architecture. Even in photographic representations (two-dimensional medium), the objectspace feels physical and tectonic; and because it is a relatively static medium (unless it is run-through and deformed at high speed) it leaves room for surprises that the imagination brings upon, giving time for the essential reflection that all architecture demands

Dataspace

Dataspace explains how Architecture simultaneously incorporates the two states of information and matter. The word is written by combining the term data (derived from Informatics, data) and space. Architecture has a seamless relationship with Information and Communication Technologies (ICT), since its tangible quality, that

which makes it unequivocal, requires ICT to reach unexpected boundaries.

In order to achieve this, it must become binary data (dematerialized), and then be recovered in virtual navigation systems; that is to say, Architecture, a crafted environment; it needs to be transformed into information to hence be disseminated through applications, devices and viewers that allow for a real approach to structures, that would otherwise be inaccessible. In Architecture, this process of dematerialization and recovery is traditional, because its conceptual basis (the idea) needs to first become thought (intangible data) and then be recovered in physical form through drawings, models or buildings, showing that the step forward towards the use of ICT is natural. But that process comes with the warning that while applications become obsolete, Architecture must continue to be a repository of universal culture (even in moments without electricity), and only the tangible ensures this.

ICTs allow the handling of humanity data, and Architecture, as a cultural container, possesses vast information on civilizations (Cole, 2006). Empirical knowledge and experimentation converge in ancient buildings due to the search for ambitious solutions in spatial terms that will express the Zeitgeist - the spirit of time (Neumeyer, 1991), competing with those from earlier times, hence increasing the scale of construction developments and folding the procedures for carrying them out. The tectonic options of the twenty-first century have added to these historical phenomena, by demanding the need to create databases that will help historians and theoreticians to manage the almost limitless source of knowledge within the profession. ICTs are crucial to manipulate all these documents and, above all, to make them accessible to the interested public, thus strengthening the multidisciplinary network between practice and academia.

An important part of the ICTs are the architectural modeling and rendering programs (3-D representation with almost realistic textures), which are evolving into a twin image of reality itself. Today, new programs promote their products by borrowing phrases from Physics which they use as "spectrally correct" or "depth of field" to guarantee the tactile approach of real space ("About Octane Render", 2019). This phenomenon confirms that dataspace is an important aspect for ICTs, as tactile remains the unequivocal link between the author's abstractions and the common sense of the general public.

Architecture, as a human invention, is a school of thought in itself, and today, its novelty is integrating the latest generation of digital tools within its planning and materialization processes. These media offer a perfect field where aesthetics (the subjective) and calculation (precision) can coexist in harmony, so that the proposals are not exclusively imagined, but programmed and materialized due to the computational process facilitated today by ICT and executed through dataspace, compacting the multidisciplinary of the profession in units that occupy an almost imperceptible space (Reas, & McWilliams, 2010).

Luminospace

Luminospace is a hybrid concept that explains how a particular venue's environment depends on its physical quality through light. The neologism is created by combining the invented term lumino (derived from light and optics) and space. Through its connection to the tangible in Architecture, it creates awareness of the limited resources used by the profession, and inspires the efficient production of high-quality designs with minimal use of materials. Due to the excessive use of natural resources, the minimum use of raw materials is necessary to form architectural elements. The idea of reducing the quantity of resources by leveraging the next generation digital tools can provide an Architecture that responds to the environmental challenges of the present century; the costs and quantity of the material to be used must be reduced, but the architectural quality of the proposal must

be improved (Rams, 2014). Today, architectural flamboyance dominates the profession by demanding excessive use of materials, but that situation must change towards an intelligent solution achieved through optimization. Finally, the work will stand out for its high-quality design and not for the aesthetic drama that several contemporary styles insist on establishing (Schumacher, 2008). Working with this type of efficiency (minimum use of the material), drives the luminospace to stand out beyond the tangible overabundance, and finally expands the atmosphere that exudes from Architecture.

Luminospace promotes environmental awareness. As it does not need abundant ornamentation as it traditionally occurs in Architecture, it eliminates object overabundance in order to focus on the spatial sensation, hence achieving for detail to be founded in the atmosphere of the architectural space giving way to pure architectural apprehension. Ludwig Hilberseimer, alongside other exponents of the New Objectivity, supported the bases of a terse aesthetic early into the 20th century, influenced by *Alfréd Kemény's* critique of the work by sculptor *László Péri*, which reflected "the economy of minimal forms; the spatial tension produced by the extreme opposition of minimal forms; massive power; tuned objective determination disassociated from any relationship with nature" (Anderson, 2013, p. 53). What is known as "Minimalism" has also developed these ideas through the appearance of non-ornament in design. This luminospace hybrid avoids echoing such positions but leverages them to promote an environmental awareness by taking the reductive as the core theme. The environmental deterioration of the world, and possibly of the Earth's low orbit in the near future, is a complex socio-economic issue that surpasses Architecture, and must be analyzed in another opportunity to avoid exceeding the space of this publication.

Luminospace brings together Architecture and Film, as both are universal cultural media and representatives of the aesthetic revolutions of mankind. In film however, the power of image and cinematography prevail as resources to convey the atmosphere of the theme (*Truffaut*, 1974), something that is compared with the impact of Fine Arts and the fourth dimension in Architecture (the journey). Films are an inspiring source for architects, because they reveal another life of spaces, that is, each scene occurs in a site that is artistically used and inhabited, beyond what philosophies or theories might pose, something that reveals how action occurs within the tangible, establishing the latter as the unequivocal in Architecture.

Architecture is a field of action where things can occur not exclusively to be contemplated, because it is precisely those real (tangible) physical limits that cause those actions to happen; and it is that relationship between action-object that sets forth ideas whose end-result is another new architectural work. All this corporeality generates atmospheres defined by geometric form, materials, light and scale (Tedeschi, 1969), converting luminosity into the palpable poetic expression of Architecture.

The univocal

What is univocal in Architecture is its tangible evidence, which guarantees the value of the work through its physical qualities. If it is well done, it will not expire, and it will diminish the need to raise new unnecessary buildings, reducing the extraction of raw material, and promoting the optimal use of the planet's limited resources.

Some architects give conferences about ideas and concepts only, forgetting to delve into the issues that make Architecture a tangible fact, and omitting the objectual value of Architecture; they focus on issues of critique, theories, economics and politics, but omit the tectonic quality that eventually affects the surrounding physical environment.

The univocal in Architecture equals the palpable, whether constructed, drawn or modeled; that element whose properties are maintained as the constant and universal characteristic of the profession over time. Even in Suprematism (the

supremacy of the intangible), *Kazimir Malevich* makes use of the tangible to clarify his concepts of non-object (Railing, 1990), and *Ivan Leonidov* continued developing those theories to project his experimental Architecture without losing the object purpose of the work (*Magomedov,* 2011).

In Architecture, the tangible as equivalent to the univocal is the key value of this profession. Mainly addressing the object does not mean that the thought process is neglected, since the latter is responsible for the palpable end-result. Apart from referring to the external and what provokes sensitivity, the tangible is important to understand that Architecture is a physical article which is experienced visually in most cases. There are artistic explorations that rely on cybernetic technology to produce a chromatic atmosphere in visually impaired people, hence, allowing them to explore a space artificially, but these attempts are still in incubation, allowing visual properties to still master the experience (Bryant, 2013). Also, granulometry, as an almost molecular morphological visualization in the design process, deconstructs the object into granular components, trying to inaugurate a new aesthetic where the univocal (tangible) is perceived according to the order and size of the grain (Carpo, 2017).

Architecture is not autonomous at all, but if it is well designed it falls under a non-time, somehow acquiring a certain autonomy that makes it worthwhile today to build and to apply perfectly in the future -this is how it acquires its value. For example, business plans, theories and philosophies emphasize the object value of Architecture only amid the process, because its products (approaches) are others: the business plan focuses on financial success; and the theories and philosophies focus on concepts; that is, the present- day conditions are only the foundation stone of new Architectural styles, and do not guarantee the validity of the work in the future, thus the object must have the capacity to become autonomous.

We insist that the tangible is equivalent to the univocal in Architecture to raise awareness in architects (students and professionals) of the tectonic reality of the profession, and that being aware of the tangible potential is to be aware of how finite the raw materials used to build are. Although Architecture is not made of matter alone, but of a blend of ideas and concepts as well, the univocal (the tangible) possesses the capacity to summarize a complex idea into finite means and reveal it by means of a tectonic vision.

Thinking in an objectual way inspires design-thinking, and the latter demands in return for Architecture to follow Four Facts as evidence of habitability which declare the tangible as univocal in it:

1. Architecture is projected. The capacity of the architect to envision the project is insufficient if they cannot transform that vision into something concrete and project it to a plural audience. In this case, architecture becomes a necessity for third-party production, creating graphic and physical representations that transform the design into recurrent documents during the conceptual stage and promotion of the end-result.

2. Architecture is built. To project only is not enough if it needs to evolve. Although since the last millennium the projected architecture has gained importance in the discourse of the History and Theory of Architecture, traditionally the position of these two fields are based on developed works as evidence of the limitations and risks that all tangible fact poses. In addition, the need to leave the caves led to the creation of controlled environments, and finally to something that went beyond a refuge and became a living example of the idiosyncrasy of its inhabitant.

3. Architecture is occupied. To build is irrelevant if it lacks purpose, which in general terms is reduced to the act of

"dwelling". The levels of livability of Architecture grow at the rate that increases the sophistication of lifestyles, but the quality of living is constant through all the typologies that gradually emerge and change according to the transformation or evolution of human life

4. Architecture is reusable. The potential to survive times beyond its planning guarantees the potential of reusability, in this case, the tangible grants longevity to the architectural fact.

5. In Architecture, if one is aware of the tangible as the univocal, it is necessary to change the way in which the profession is academically researched, and evolve towards a process that diminishes text but increases in graphics, drawings, models, photographs or any other form of visual representation that unifies thought and design. It is necessary for research and publications to be done almost exclusively in a graphic way, hence inaugurating a new academic rigor equivalent to that of a traditional scientific publication.

Likewise, the writing format should be consistent with the non-linear manner in which architectural knowledge is expressed. An open format should be made that is structured according to the objectives of the specific research, instead of adjusting the results to a standard that could diminish the power of the article. The scientific method partly applies to a complex and truly multidisciplinary profession as is Architecture. It is necessary to leverage the tangible quality of the profession to achieve a deeper rapprochement between academia and practice, since the significant architectural products are physical facts and require awareness at all times amid research. Eventually, results must be focused on debatable projects and proven under the physical context reality where the research findings are projected.

Thinking about the univocal suggests that Architecture has only one way of being understood, only one meaning, and although it is clear that the study of meaning belongs to Semiotics in Architecture, that is not the sense that is exposed in the present article. If the tangible, as evidence of the constructed and projected fact is universal, in that sense, when something univocal is discovered, it is something that is determinant and unequivocal through cultures and time

It was passed from ideospace (formation of the tangible) to objectspace (tangible) and then to luminospace (tangible atmosphere) passing through dataspace (documentation and transformation of the tangible) as intellectual territories of the univocal. It is considered that each one of the previous concepts does not happen in the exposed order (they do not occur linearly), but it is advised they be borne in mind when formulating advanced schools of thought for the present millennium.

The tangible, although composed of elements relevant to a specific era, lacks the variable of time when understood through the univocal. Incorporating it and being aware of that concept during the process of research, design and practice of Architecture, helps to eliminate the moments of indecision that science cannot confirm in such situations when the technology fails, and will help the architect regain confidence in their intuition (convergence of experience and rationalism) as an infallible resource that has complemented and will continue to complement the profession throughout history.

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