“THE OUTSIDE IS ALWAYS AN INSIDE”: THE IDEA OF SPACE AND ITS THEORETICAL HERITAGE IN “TOWARD AN ARCHITECTURE”

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Abstract. The article proposes to delve deeper in the idea of space in Le Corbusier’s Toward an Architecture (1923), focalizing in its connections with the past and urban design. When in his book Le Corbusier presents his “trois rappels a messieurs les architectes” – volume, surface and plan (in its broad sense) – he outlines the keys to his idea of space. It proves imperative to use Le Corbusier’s original term “Rappel” as its word play transcends any possible translation. Space is therefore defined as a Rappel (call) to architects, but also as a Rappel (reminder, evocation) to multiple theorizations and ideas that have traversed architecture throughout history. Le Corbusier’s argument understands the directions of space as an extension, showing his affiliation with a tradition of French thinking that, in architecture, subscribes since Viollet le Duc to the Cartesian Method, in which spatiality is understood – from the Baroque – both Outside and Inside. It is proven that, in clear continuity with French architectural tradition and drawing inspiration from the ideas of Auguste Choisy, Le Corbusier defines with the mass and the void a space in which “the Outside is always an Inside”. Thus, it is demonstrated that not only the links with the past but also the material resources for the definition of such space are common in different scales, from the definition of an inside up to the urban design.

Keywords: composition, cultural heritage, Modern Architecture, space and place, urban design, Le Corbusier.

Introduction

The article proposes to delve deeper in the idea of space in Le Corbusier’s Toward an Architecture (1923), considering it a starting point to move forward in the reflection about its connections with the past and urban design. The hypothesis is that when in his book Le Corbusier presents his “trois rappels a messieurs les architectes” – volume, surface and plan (in its broad sense) – he outlines the keys to his idea of space. For this reason, it proves imperative to use Le Corbusier’s original term “rappel” as its word play transcends any possible translation. Space is therefore defined as a rappel (call) to architects, but also as a rappel (reminder, evocation) to multiple theorizations and ideas that have traversed architecture throughout history.

Taking into account the idea of space, which is the hypothesis of this article, we could associate the importance Le Corbusier gives direction, width and height with Gottfried Semper’s three principles of configuration of artistic form; linked also with August Schmarsow’s three directions of space: symmetry (breadth), proportion (height) and direction (depth). Nevertheless we will maintain that the difference from these German theories lies in the fact that these understand space as an enclosure. However, Le Corbusier’s argument understands the directions of space as an extension, showing his affiliation with a tradition of French thinking that, in architecture, subscribes since Viollet le Duc to the Cartesian Method, in which spatiality is understood – from the Baroque – both outside and inside. Thus, a secondary hypothesis is that Le Corbusier’s strategy recreates space based on French tradition, reconciling the importance given to the plan in the Beaux Arts tradition with the Cartesian principles and therefore producing a groundbreaking idea.

A methodological tool used in this article to unravel this concept of space in Le Corbusier is the author’s development in Toward an Architecture of the concept of le plan. Although Le Corbusier, in his brief mentions of the term ”space” uses it in a general manner and not to conceptualize the spatial question, it is in the complexity he gives to the concept of le plan where he
problematizes in that topic. Thus, he disregards the categories of the autonomy of the architectural discipline of the XIX century and the reflection on the spatiality, the structure and the envelope, to go back to the XVII century and be anchored in the French architectural tradition. This leap is what enables him what we see as a horizontal space license.

The plans he proposes in the chapter about the third rappel exceed the drawing of a geometrical to be the trig-ger of his idea of space. The drawings – borrowed from Auguste Choisy – are axonometric sections where the plan is transformed in the imprint of the space. This leads us to believe that for Le Corbusier the plan is the spatialization of the floor plan and in this sense we understand that the polysemy of French’s term demonstrates that the bidimensionality is exceeded. Le plan is more than a bidimensional floor plan; is the trace of a spatial project or plan; is the plan.1 This is proven by the axonometric cut (Fig. 1).

From these approximations to space as an extension and to le plan is that we consider that, in clear continuity with French architectural tradition and borrowing the ideas of Auguste Choisy, Le Corbusier (1928: 154) defines, with the mass and the void a space in which “the Outside is always an Inside”.2 In this respect we can anticipate the conclusion that, on one hand, Le Corbusier’s idea of space is deeply rooted in connections with the past; and on the other hand, that the material resources for the definition of such space are common in different scales, from the definition of an inside up to the urban design.

We shall focus on two objectives. The first one, which will go through the whole article, seeks to de-

1 The terms in italic are the various possible translations from French of the word “plan” that we believe are explicative of the idea of the plan.

2 Originally in French: “Le dehors est toujours un dedans” (see Le Corbusier 1928).
of extension owes its origin to our experience with material objects.4

For Decartes the extended matter “res extensa” constitutes the essence of the bodies: everything that is corporeal is extensive, with length, breadth and thickness, and infinitely divisible. Once deprived of all the sensitive (ever changing) properties, all that is left is the extension; through which the corporeal substance can be truly known. Descartes speaks of a space known a priori with perfect clarity and distinction; although the extension in itself is perfectly transparent (Ferrater Mora 2002: 124). As this extension is not “sensible”, it is – as Nicolas Malebranche (1678) acutely points out – an “intelligible extension” that can only be recognized with certainty in all its dimensions by means of the bodies surrounding it. Here we find the filiation with the directions of space set forth by Le Corbusier.

…if the ordonnance that groups them expresses a clear rhythm and not an incoherent agglomeration, if the volumetric and spatial relationships are rightly proportioned, the eye transmits coordinated sensations to the brain and the mind derives from the satisfactions of a high order: it is architecture (Le Corbusier 1928: 117).

In Le Corbusier’s space, defined with the mass and the void, “the Outside is always an Inside” (Fig. 2), idea resumed from Choisy who, when referring to the “frame of the gardens”, states that “one of the merits of the – French – XVII century is associating the effect of the garden to the rooms” (Choisy 1963: 708). With this statement we see that space is dealt with independently of whether it is interior and exterior; prioritizing in its concept the mechanism of element arrangement.

For Choisy (1963: 709), “everything is subordinated to the architecture of the gardens of the XVII centu-

4 This idea differs from the theory of Aloïs Riegl, who claims that the dimension of depth only becomes a significant factor in architecture with the onset of the interior spatiality given that previously it only existed as a “negation of matter”, as vacuum (see Schmarsow 1994).
with Fernand Léger and Pablo Picasso’s cubism after 1920. From then on, “space cannot be neither a purely physical space – depth, or an extension – nor a space purely symbolic” (Francastel 1972: 201).

In that moment that Francastel defines as breaking point, the visual cube – inherent of the spatiality of the first classicism – was still being used by Le Corbusier. Nevertheless, the introduction of continuous motion proposed is still assimilated by the cube. Presenting a trajectory that encloses the limits of space, the cube remains intact, although because the motion is continuous and lateral, it includes foreshortened points of view, compromising the exclusive centrality of the traditional spatiality and continues with those trajectories recognized by Choisy in his drawings of the Acropolis.

This concern for the relation cube-motion that Le Corbusier assimilated from the French context could also be connected with the essay of 1907 The Problem of Form in Painting and Sculpture, by Adolf Hildebrand (2010) and its repercussions in the emergence of the idea of space in art, where the spatial relation between the observer and the object is understood as an artistic experience in itself. Even if there is no evidence that Le Corbusier had known these theories, we can trace the idea of kinaesthesia as a constituent factor of space in Edmund Husserl; argument later taken on by Schmarsow.

Hildebrand begins his essay combining the idea of space with the idea of form, which is delimited spatially. He refers to two ways of perception that are related to two possible ways of image formation. The first is the pure vision, inherent to artistic contemplation, when both eye and body are static; it is the distant, planar, bi-dimensional image. The second way of perception is the image received through kinetic vision, when the body is in motion; it is then that it received the plastic idea, the impression of tridimensionality. For Hildebrand, these two visions are necessary for artists to achieve their goal: “the presentation of an idea of global space”.

Through the concept of vision-in-motion, Hildebrand emphasizes the notion of space as the basis of all artistic creation, introducing the element of time in the formation of the complete perception of the image. At the same time, it contributes to our interpretation that with this idea of space, he stresses that nature should be understood as a total space, which he identifies with Descartes’ three dimensional extensions and whose essence is continuity. He maintains that: “Since we do not conceive Nature with the eye alone, nor from a single point of view, but rather as something always changing, always in motion, to be taken in by all our senses at once, we live and move with a consciousness of space surrounding us” (Hildebrand 2010).

**Extension, order and motion: the mathematical precision**

Regarding these similarities with the Cartesian thought we must add that, if for Descartes bodies exist as extension, this clear idea of extension is conceived in our understanding with the same certainty as in mathematics. Descartes stated:

> I especially enjoyed mathematics, because of the certainty and evidentness of its reasonings. But I hadn’t yet seen what its real use is: I thought it was of service only in the mechanical arts, and was surprised that on such firm and solid foundations nothing had been that was more exalted than the likes of engineering, road-building, and so on (Descartes 2001: 10).

Le Corbusier’s relationship with mathematics, through Cartesianism, allows us another possible interpretation to the value he gives them in connection

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5 Even if there is no evidence that Le Corbusier was aware of these theorizations, we can trace the idea of kinesthesia as a constitutive factor of space in E. Husserl; argument that is later a resumed by Schmarsow.
to architecture, complementing those theories that are related to mathematics through an idealistic viewpoint. These are perhaps supported by Le Corbusier’s statement: “ARCHITECTURE is the art par excellence, one that attains a state of Platonic grandeur, mathematical order, speculation, perception of harmony through stirring formal relationships. These are the ENDS of architecture” (Le Corbusier 2007: 162–163).

Extension is for Descartes a constitutive element in the essence of universal mathematics, but it is also “order” and, in connection with space, “dimension”. Descartes’ universal mathematics takes as starting point the “clear and distinctive” ideas of extension and order. For both Descartes and Le Corbusier, algebraization, mathematical abstraction, is what guarantees said clarity and distinction. As stated by Ernst Cassirer; for Descartes: “The same that all the numbers sprout from an exactly determine operation, which is numbering, all the special knowledge are obtained and can only be obtained by means of the “method”; and as the path leads to the limited, although the direction of progress appears to be traced beforehand in a precise and unequivocal manner, thus also, without shutting ourselves down to the infinite fulfillment of experience, we must strive to master it by means of a fixed and predetermined plan and sketch of thought”.

Another idea of Descartes, associated with the notion of extension, helps us understand the spatiality presented by Le Corbusier. It states that “true reality” consists of two ideas that are measurable, and, therefore, mathematizable: extension and motion. It is in connection with motion that for Descartes it is not necessary to give real character to something that, as with space, it is not possible to “experiment in a direct way”. Thinking of space in terms of the material qualities that constitute it, and drifting away from the idea of vacuum as “nothing”, the distance between objects is given the ability to transmit sensations. Again, as Descartes states, extension is the way of sensing; extension is visible, measurable; vacuum is not. This notion is not introduced into architecture by Le Corbusier, but comes to him through the French Baroque; that is “the Lesson of Versailles”. In the gardens, extension is perceived through the natural frames where “the Outside is always an Inside”.

In this meaning of extension, the motion component – presented by Descartes and resumed by Hildebrand – is also essential in the space of Le Corbusier, heir to the French tradition, where architecture is volume that emerges from the disposition of the spaces. Thus, walking and rhythm become fundamental concepts. To organize and rhythmize this motion will be the aim of the plan.

The third rappel

To make a plan is to clarify, to fix ideas.
It is to have ideas.
It is ordering these ideas such that they become intelligible, feasible and transmissible. So it is necessary to manifest a clear intention, to have had ideas that made it possible to set oneself and intention.
A plan is in some sense a concentrate like an analytic table of contents. In a form so concentrated that it seems like a crystal, like a geometric blueprint, it contains an enormous quantity of ideas and a driving intention (Le Corbusier 2007: 215).

For Le Corbusier, the disposition and alternation of the mass and the void – of volumes and spaces – determines the architecture. Following Cartesian theory, Le Corbusier understands space as a “transparent substance” that allows to see the solids orchestrated in a sequence. The element that makes possible establishing connections between solids and void is the plan:

The plan is the generator. Without a plan, there is disorder, arbitrariness. The plan carries within it the essence of the sensation. The great problems of tomorrow, dictated by collective needs pose the question of the plan a new. Modern life demands, awaits a new plan for the house and for the city (Le Corbusier 2007: 116).

If the disposition of the volumes in the space is determined by the plan, space can be understood in connection to the direction of the walker. From that, we understand Le Corbusier’s promenade as a revision of the marche, inherent of the art of French distribution. Thus it reinforces the permanent reference to Choisy, who finds in French Rennaisance – influenced by François Blondel – the start of this new way of distributing the rooms, where the numbering of the rooms in the blueprint “shows the calculated detours and the middle rooms that have to be flanked…” (Choisy 1963: 707). The rotation of the axes that made the marche the key to the breakup of French architecture from Italian tradition is vindicated, because in that French Renaissance “as far as the blueprint is concerned, nothing resembles those Italian enfilades… In France, there are clearly different services, each one grouped in a separate body of building, with superfluous exits and stairs arranged with the least concern for symmetry or alignment, without obeying any other rule but that of meeting the requirements, which supposes a reasoned disorder” (Choisy 1963: 675).

The previous quote reveals that for Choisy the plan is the element that organizes the sequence. And it is
here what we distance ourselves from those authors that see Le Corbusier’s reference of Choisy as the search of an axis like “that which is considered the pittoresque of the Acropolis, that is to say, a sort of “disorder” inherent to the natural landscape, that in the Acropolis is evident, precisely, in the freedom with which the volumes, central to the plateau, are laid out in connection with it” (Hidalgo 2004: 70). The idea of “disorder” is not applicable if we refer back to the mathematical precision above mentioned, in the same way that the use of axes by Choisy has different intentions (Fig. 4).

In this regard it is interesting to make a distinction between marche and architectural promenade. The first is understood as the non-aligned succession of axes of movement, a sequence of static views where each space, that appears independent of the rest, has a central focus and is organized symmetrically, prevailing the frontal vision. The promenade, instead, introduces the spatial freedom; governed by the vision in motion that prioritizes the foreshortening, showing a continuity that allows to apprehend the same space from different angles, even simultaneously. In it, the movement is guided by the attraction towards the visual focuses (a sculpture / an object trouvé, a curved strip like the rail of a stairway or ramp). The play of volumes and tensions they generate are the stimuli for both indoors and outdoors architectural promenades. The object of architecture goes from permanence to movement.

These ideas regarding the promenade appear in Le Corbusier’s work with the Villa La Roche, whose first sketches date back to 1923, two years after the first publication in L’Esprit Nouveau of the article “Trois Rappels à messieurs les architectes. Le plan” (N° 4 January 1921) and in the same year of the first edition of Toward an Architecture. We can date there the first time a ramp appears in one of his projects.6

The promenade is both interior as exterior, architectural and urban (Fig. 5). Accordingly, the description of the New York architectural scene that Le Corbusier provides in his 1937 When the cathedrals where white, and his new comparison to the Acropolis, leads us to a promenade as a way of projecting, but also of apprehending and describing the places he visited.

Likewise, on the Acropolis of Athens, spaces and volumes disposed by topography and by perfect knowledge, associated with a circle of mountains and facing the island-dotted sea, have made this site dear to our hearts.

For those who are able to see, New York, projected violently into the sky, an outcry that you hate and love at the same time, hides in the bottom of its canyons of banks the architectural composition which is most expressive of the soul of the country.

(Le Corbusier 1964: 74–75)

Another rappel to the French architectural theories appears with the term ordonnance. Le Corbusier stated that: "Ordonnance is the hierarchy of axes, thus the hierarchy of goals and the classification of intentions. So the architect assigns goals to his axes. These goals are a wall (a solid, sensory sensation) or light and space (sensory sensation)” (Le Corbusier 2007: 221). In this sense, the complex succession of broken axes is more than an abstract line of movement. It is explained by

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6 Quetglas, however, points out that Le Corbusier had already used ramps in his 1917 project for a slaughterhouse in Challuy and in his 1918 project for a slaughterhouse in Garchisy, even if they are covered in an ambiance of traditional domesticity, both are surprisingly modern in terms of the sequence of movements and the effective disposition in the space for specific activities (see: Quetglas, s/d).
the succession of sensations; for him “the axis is a line of conduct toward a goal” (Le Corbusier 2007: 221). Moreover, the term ordonnance is used according to the motion that the axes assume for the sight of the walker.

In this way, it is evident that what organizes the plan is the spatial sequence: the rhythm defined by the ordonnance and not by the regulating line. Not accidentally the chapter “Regulating Lines” is separate from the three warnings constituted by the volume, the surface and the plan. While the regulating lines arrange the surface, the ordonnance organizes the plan by means of the spatial sequence derived of the reinterpretation of the marche and according to a rhythm. “Ordonnace is a perceptible rhythm that acts upon every human being, in the same way. The plan carries within it a determined primary rhythm…” (Le Corbusier 2007: 119).

A third subject – not a rappel – that we want to address is regulating lines. Even though we agree with Le Corbusier’s interpretation of the plan as an indication of the architectural, being the architectural what emerges when the spectator is faced with wisely arranged plastic facts (Quetglas 2004: 13–19) we differ from those interpretations that understand regulating lines as the elements that give precision to the plan. These interpretations, result of the forcing of the ties between the space in three dimensions of the purist painting and the composing character of the plan, relegate the importance of the marche and the ordonnance – that result in the promenade and are consequence of motion – making extension imperceptible. Let us think in this sense the following quote of Toward an Architecture: “It is (the plan) a plan of battle. The battle consists of the clash of volumes in space and the morale of the troops is the bundle of preexisting ideas and the driving intention” (Le Corbusier 2007: 215).

“Architecture is a plastic thing. Plasticity is what we see and what we measure with our eyes” (Le Corbusier 2007: 243–244), states Le Corbusier. Not coincidentally the only plan he incorporates to his third rappel is that of the Acropolis taken from Choisy where the particularity of the drawing lies in the dash line that marks the walker’s sequence and the perspective he visualizes.

In the interpretations before mentioned man looks from the “outside”, contrary to Le Corbusier’s claim that “In reality, axes are not perceived in the bird’s-eye view shown in plans on the drawing board, but from the ground, by a man standing erect and looking before him” (Le Corbusier 2007: 221). The marche and the ordonnance are elevated above the symmetry axes and the regulating lines that could appear in the plan. Far from extending the functionality of the regulating line as that which provides an aesthetic order in elevation (applied to the definition of surface) and in ground, we see that for Le Corbusier the plan has a different code. The plan is defined by the circulation, the motion, composing an extension where the axes of movement and of march define and dominate the possible axes of composition.

The following quote by Reyner Banham reasserts the previous hypotheses in a double meaning.

But Le Corbusier seems also to have had in his mind the idea of plans as a species of Secret Professionel, for this idea appears in the writings, very much under his influence, of Pierre Urbain, who speaks of the lay public as being “...rarely in a position to understand the influence of its own needs on the architecture of its time, since they affect above all the plan, and only a professional education of a sufficiently advanced standard permits one to judge that, or even to read its disposition”. In any case, having declared the determining influence of the plan, Le Corbusier then undermines his case by offering in the next chapter an almost independent aesthetic order for the elevations – Les Tracés Régulateurs. So strongly does he feel about them that he not only declares them to be good and necessary, but makes an appeal to history as well (Banham 1967: 226).
On the one hand, he understands the regulating lines as an independent aesthetic order that are applicable to the elevations and not to the plan. On the other hand, it connects us with the advanced professional education of Le Corbusier and his use of multiple references to the past. In this sense we can observe that one of the strategies which Le Corbusier systematizes with such clarity is that of applying a group of composing complex criteria to a simple volume. Thus, he invokes the wisdom of the art of French distribution, whose basic resources are the differentiation of rooms in forms, the tension between hallway and room, the multiplicity of forms and heights in the rooms, the poché and the distinction between composing axis and frontal perspective that organized the architectural elements in the facade with that system. This distinction between the axis of the facade and the processional axis is a development of the art of French distribution if we consider that in the Renaissance the architectural elements arranged on the facade surface constituted a complex composition with the axis of symmetry that, moving into the interior, coincided with the organizational and processional axis.

By way of conclusion

This article has verified the hypothesis that it is in the “trois rappels a messieurs les architects” in Towards an Architecture where Le Corbusier develops the keys to his idea of space, despite not using the actual term; a space which includes both Architecture and urban design. And also, how the topic of space is decisive in this interpretation. Le Corbusier’s space finds an inescapable place in the third rappel, more precisely in the section of le plan. To support this idea we resort to Le Corbusier who defines le plan by circulation, by movement, composing an extension where the axes of movement and march define and rule possible axes of composition.

Our research reinforces the idea that all these resources – outlined by Le Corbusier both theoretically and practically – are supported in the amply demonstrated connections with tradition, and therefore, with History. That, far from posing breaks with the past, they recognize numerous filiations and differences regarding other theories on this subject.

To arrive to these interpretations we have brought to the discussion both disciplinary texts that have worked as Le Corbusier’s theoretical background and also histrigraphic interpretations. From there it becomes evident, for example, that Choisy implies the idea of the mass and the void by graphic affiliation but that there are no connections between this idea and the Cartesian tradition that Le Corbusier himself would make explicit in other works; or the emergence of hypotheses like Banham’s, improving the idea that Le Corbusier’s space can be thought in biplanar terms. It is by reviewing again these interpretations that we have approached a spatiality that is understood in all its riches, enabling us to say that their meanings are far from being narrowed to the delimitation of an enclosure. Also, that they have enough scope to resolve both architectural projects and urban interventions.

We have endeavoured to show how Le Corbusier’s strategy in this regard in Toward an Architecture lies in understanding le plan as an imprint of the space in plan. In this way it transcends the idea of the arrangement of the plan, as far as the bidimensional outline, incorporating the space in it, and therefore the vision-in-motion. Le Corbusier achieves this by recovering the French tradition, seeking order in the disorder of the marche by understanding space as an extension. And this is also verifiable in the “leap” from Choisy’s drawings and in Le Corbusier’s first works in which the idea of promenade began to emerge as the heir of the marche whose organization was funded in the perception of the trajectory of the spectator, rather than in abstract logics for the distribution of the rooms in the blueprint.

We revisit, thus, the idea of the beginning regarding the same approach to space in Le Corbusier’s architectural and urban projects. As we have proven, all of them are guided by the distribution of the mass and the void (extension) according to the needs of the program and always beginning from the plan of the building and the city: “The plan is the generator [...] The plan carries within it the essence of the sensation”? (Le Corbusier 2007: 216).

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References


7 Originally in French: “Le plan est le générateur. Le plan porte en lui l’ essence de la sensation”.


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