Lamberto Amistadi
Music, Painting, Architecture: the Structure of Appearance

Abstract
In his *Aesthetic Lessons*, Hegel says that "man doubles himself": he exists in himself as a natural object and exists because he manages to in turn produce other objects. This production, the production of what-we-see, uses a know-how which, in a certain sense and at a certain level, is common to many arts and many disciplines.
This essay aims to investigate some of these "common procedures" in music, painting and architecture. And all these disciplines appeal to faith in that so-called "syntagmatic intelligence" – belonging to the associative faculty of the mind – which is the basis of every construction of man, starting from language and writing.

Keywords
Architectural Composition — Figuration — Representation

Before discussing the relationship between architecture, music and painting, it is appropriate to clarify an aspect concerning the relationship of architecture with other arts in general; even more generally, also the relationship between things belonging to different families.

Foucault (1966, 2006) has taught us that the definition of kinship depends on the classification criteria, thus it is easy for him to bring both embalmed animals and dairy pigs or mermaids into the same family. This type of selection, which we could call "horizontal" – which semiologists call "paradigmatic", i.e., "or-or", "or this or that" – does not consider the profound nature of the objects in the classification and to some extent safeguards their integrity and beauty (for example the beauty of superficiality discussed by Nietzsche (1882, 2000, p. 64): «... Oh, these Greeks! They knew how to live: for that purpose it is necessary to keep bravely to the surface, the fold and the skin; to worship appearance, to believe in forms, tones, and words, in the whole entire Olympus of appearance! These Greeks were superficial - *from profundity*!»).

The other manner or the other way – to quote the title of Nelson Goodman's book *Ways of Worldmaking* (1978) – is that of the creator, who to do things by art must use a technique, the same technique that for the ancient Greeks coincides with the meaning of art in the sense of "know-how" and presides over both intellectual and manual activities, to the point of making Greimas and Courtés (1986, p. 227) say that narrative know-how is not so different from the know-how of a shoemaker.

Of course, to go so far as to say that an author's know-how is not so different from that of a shoemaker, the sequence of operations by means of which a shoemaker makes shoes and an author writes books must be dis-

mantled, progressively reducing them to the operations shared by both the author and shoemaker, and will necessarily be elementary operations. Let us remember that in *De pictura* (1435, 1913, 2011, p. 87), Leon Battista Alberti also urges students to approach the study of painting as if they were learning to write: «I want young people, who are new to painting, to do what I see in those learning to write. First they separately teach all the forms of the letters, such as the ancient ones they call helminths; then they teach syllables, then they open up, teaching to compose all the dictions; our painters should follow the same logic.»

Anton Webern uses these terms to speak about his music and art in general, using the phrase "nach Innen", which means "to go inside", to go deep inside. That is why I mention that a paradigmatic approach respects things unlike this syntagmatic approach, which in this going inside, in-depth, can only violate its integrity. For example, the techniques for transforming a melodic line include dismemberment, according to which a fragment of the theme is used to continue the melody. In his *The Path to the New Music*, Webern (1960, 1989, p. 30) speaks of repetition, inversion (*Umkehrung*), retrograde motion (*Krebs*), which are all possible operations in the deep space of articulation: «What then does articulation mean? In a general sense: to be able to proceed with a sectioning in order to analyze something, to distinguish the main aspects from the secondary ones». Webern knows perfectly well how all this has to do with the articulation of language, to the point that he introduces *The Path to the New Music* with a tribute to Karl Kraus and Goethe, he who seeks, conveys and promotes the passage of the universal laws of nature in the universe of linguistic figuration.

The structure of which Goethe speaks is the same deep structure in which the space of variation is articulated, along which the syncategorematic links dissolve and recompose, in relation to which, «The roots are nothing more than the stem, the stem is nothing more than the leaf, the leaf is nothing more than the flower» (Goethe 1999, quoted in Webern 1989). Repetition, inversion, fragmentation, increase, decrease, consonance, dissonance, or – to quote Le Corbusier (1921, 1999, p. 37, 38) – equality (understood as symmetry and repetition), compensation (understood as movement of opposites), modulation (development of an initial tangible invention) or, likewise, the tension generated between Hejduk's opposing pairs rotating around the male-female fundamental (Amistadi 2019), are the more or less natural laws (this depends on the point of view (Comte or Cassirer, to be clear)) that oversee the transfiguration process able to order life in a multiplicity of changing forms.

In *Variations of Identity* (1990, p. 97) Carlos Martí Arís discusses the deep structure of architecture in relation to the architectural type. He first refers to the type as «an authoritative principle for which a series of elements linked by particular relationships acquire a certain structure»; then he considers a structural method as the method which «consists in investigating the structure common to different systems that, in principle, present themselves as heterogeneous». And finally, he speaks of a «limited number of deep structures» obtained through a «process of progressive abstraction». This process of abstraction takes place outside of history, in an indeterminate and obsolete space where the structures that survived the selection process can rely on the reality of the historical experience of architecture as a guarantee. It is therefore a symbolic space, within which it is possible

to slide from the driest, most barren depths to the most vivid superficiality. It is the formal space in which the world builder — Goodman's *worldmaker* — operates, the space that Chomsky (1969) had already articulated into a *Deep Structure* and a *Surface Structure*. Just as with the surface, depth is also a space in which there is not only the "limited number of deep structures" that Arís discusses, but also deep structures located at different levels of depth.

We must imagine a vertical axis that can be ascended or along which one can descend from a sort of "ground zero". Above ground zero are the figures who deal with the manipulation of meanings – the so-called metasemems – below, the formal operations that break the bonds uniting letters together, dissolving the links within the words, transforming their meanings – the metaplasms. Among this second type of figures, Peter Eisenman brings the example of the anagram and the word "cat" which, through the violence that breaks the link between its letters, easily turns into "act". That is, "cat" and "act", from a certain point of view, at a certain level of depth, are the same thing (Amistadi 2008, p. 57-68)

John Hejduk is perhaps the architect who has managed to most consciously flow along the axis within which the creative-productive process develops. With some considerable innovations: the replacement of the axis with a circle, the possibility of leaving this same circle in which the appearance of the empirical-phenomaniac world is structured (Goodman 1951), facing the secret universe of the invisible: «This place isn't what it was supposed to be. It's supposed to be a house. But this wasn't a house» (Hejduk 1985, quoted in Amistadi 2015, p. 46). Avoiding that which we cannot discuss, we will delve into the first of these two aspects.

Hejduk reports the reasoning on the extent and depth of the structure of appearance from the general case of the appearance of all phenomena to the specific case of architecture, its transmissibility and teaching, and does so by deepening the link between empirical-phenomaniac appearance, representation and imagination (Amistadi 2014). What interests him is the possibility of grafting the act of imagination into the creative process. Being precisely a circular process along which it is possible to scroll through all the levels between the initial hypothesis and the final outcome, Hejduk deduces the broadest freedom in establishing this beginning, that is, in establishing the initial determination from which the work's development follows, to the point that it can also begin paradoxically from the end («At the beginning from the end») (Hejduk 1993, p. 27)

In *Mask of Medusa*, Hejduk (1985, pp. 68-69) uses the example of a building clarifying that, given its complexity and unlike painting, the architectural work cannot be conceived starting from a single image kept within the mind. Such images or fragments that serve as the starting point of the work can be captured at any level of its long and articulate creative process. There are prospects, sections, axonometries, perspectives, but we can also imagine observing the house in its entirety from afar or looking at it closely; in this case we could observe the inside from the outside, the outside from the inside or the inside from the inside. We could also build a model of the house or start from a photograph, from a projection on a screen as from a single fixed frame. In any case, these images are all representations of the same house and nonetheless they are all "architectural realities". They are fragments from which, like the dismemberment technique referred to in terms of music, it is possible to develop and articulate
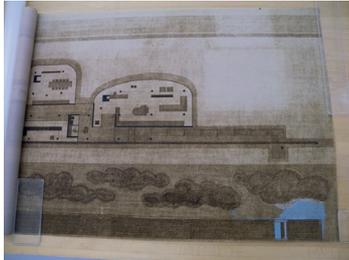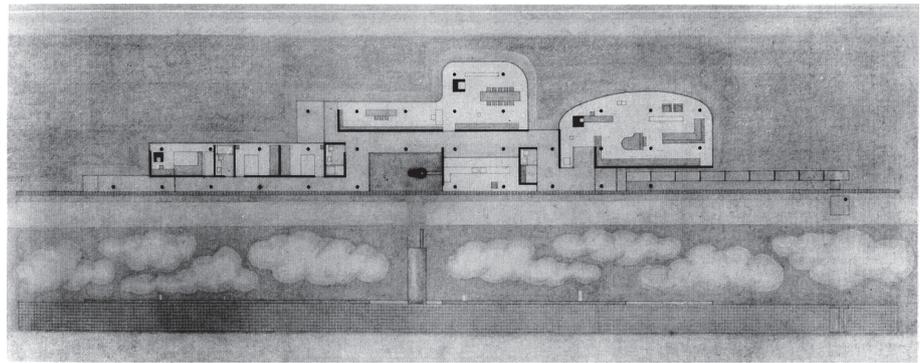
Figg. 1, 2
John Hejduk, *Grandfather Wall House*, 1966-76. Canadian Center for Architecture.
The drawing is published by Richard Pommer in his essay "The structures of the imagination", which appeared on the pages of "Art in America" in 1978.
Above the original drawing in the archives of the CCA.

Below:
Wall House 1
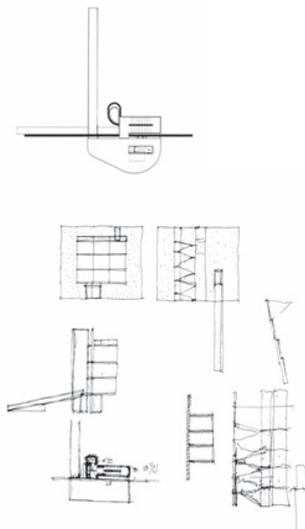
the theme up to the final formal outcome, in this case the architectural work. Hejduk's description closely resembles Goodman's account in his essay entitled "How Buildings Mean": «On the other hand, an architectural work differs from other works of art in its size. A building, park or city is not only bigger, in space and time, than a musical performance or painting, but it is bigger than ourselves. We cannot grasp them all from a single point of view; we must turn both around and inside to grasp the whole.» (Goodman 2008, p. 59) In *The Path to the New Music*, Webern (1960, 1989, p. 91) writes: «An ashtray seen from different sides is always the same ashtray, but each time it is slightly different. A thought must therefore be represented in the most diverse ways.»

Thus it seems that the imagination must be expressed through representation and that this re-presentation of the empirical-phenomaniac appearance of a "fact" is what allows us to understand its structure beyond its different representations. Structure, that is, the connection between the elements of the image, is precisely what facts and images have in common so that those images are indeed images of that fact. If, as Wittgenstein says (1961, 1998, pp. 29, 44), "The picture is a fact", we can represent a fact through an image, but we can also produce images that help us understand the nature of a fact; Wittgenstein calls this possibility "the form of representation of the image". «The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial internal relation, which holds between language and the world. To all of them the logical structure is common.»

The belief in the possibility of hidden knowledge among forms of representation is the same belief in drawing that Richard Pommer discusses (1978 quoted in Hejduk 1985, p. 58) in reference to John Hejduk in an interesting article entitled "The Structures of Imagination", which appeared on the pages of "Art in America" in 1978: «The drawings of John Hejduk are of particular interest in their attempt to revivify the mystical modernist faith in the meaning of abstract spatial signals by matching the convention of pictoral flatness to the ground plan of architecture». The basic idea is that the folds of the representation hide those secrets able to open glimpses of the perception of what is not immediately visible, establishing a sort of circularity and reciprocity also in the relationship between imagination and perception (appearance): that is, we can imagine what we have previously perceived but we can also perceive what we have imagined. Hejduk offers numerous examples of this productive-cognitive faculty inherent in the relationship between representation, imagination and work, the brightest of which remains that concerning the discovery of the Wall House [fig. 1, 2]. The starting point of Hejduk's reasoning is the so-called "lozenge configuration". Hejduk borrows the lozenge configuration from a 1921 Mon-
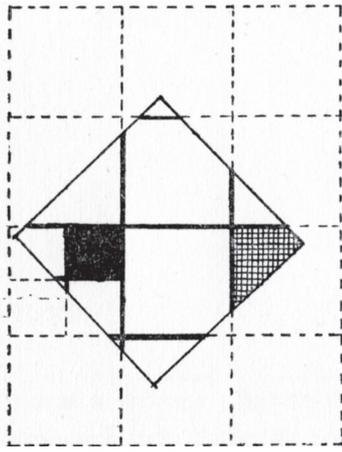
Fig. 3
Piet Mondrian, *Study for lozenge*, 1921.
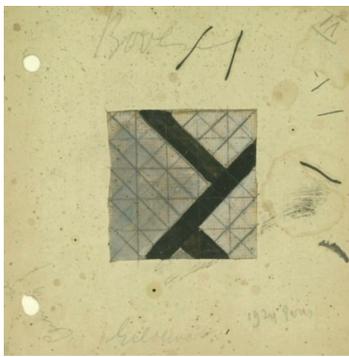
Fig. 4
Theo Van Doesburg, *Study for Counter-composition VI*, 1924.
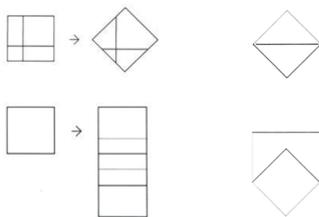
Fig. 5
John Hejduk. Diagrams relating to the isometric representation of the lozenge configuration and its relationship with the diagonal. In *Mask of Medusa* (1985)

drian painting, *Studio for Lausanne* [fig. 3]. A few years later, in 1924, Van Doesburg responded to Mondrian with *Study for Counter-composition VI* [fig. 4], and it seems that this response is the precise reason for the rupture of the partnership between Mondrian and Van Doesburg within De Stijl. The two paintings are only apparently similar, but substantially different: while Van Doesburg rotates the orthogonal texture of the grid within the frame of the representation, Mondrian leaves the tectonic and symbolic dimension of the intersection between the vertical and the horizontal unchanged, rotating the frame by 45°. This exploration of the mechanisms of representation is what gradually leads Hejduk to discover the Wall House. Sliding a step backwards in the process of shaping the square figure, he notices the existence of a configuration which comes first: the lozenge configuration. And this strangely occurs both with regard to the axonometric representation and the perspective one. The square is the product of the isometric representation of a lozenge, just as the perspective picture is the result of compressing the perspective cone on the diagonal of the square. When the optical cone of the observer is compressed on the diagonal, the square plane of this compression is as much the table on which Braque's cubist compositions are arranged as the picture of Albertian perspective - says Michael Hays (2009, 2015), both Albertian and anti-Albertian, it is a configuration that contemplates both possibilities. This screen, this square wall against which space and time compress, is the Wall House [fig. 5].

Space and time are also the protagonists of the relationship between the arts we are discussing, together with the question of the beginning, the point from which the compositional process begins.

A)   Space. There are many types of space. The space we have discussed thus far regarding music and architecture is a formal space (Carnap 1922, 2009, p. 31-32)[1], within which relationships can be established between the completely indeterminate members of the relationship itself. It is precisely thanks to this indeterminacy that these relationships can be as valid for music as for painting or architecture. The next step is to project these relationships into the specific scope of geometry and the relationship between geometric entities. It is within this intuitive space of geometry that Hejduk places the reasoning we discussed, and which makes him say, «The field comes first» (1985, p. 72), which reminds us how the "circumscription" of the field is the first operation of the depiction process indicated by Alberti (1435, 1913, 2011, p. 51). They are the same planimetry and the same faith in design and representation that makes Le Corbusier discuss (1921, 1999, p. 35-37) the strategic dimension of the plan. It is the same symbolic dimension that allows not only to imagine space starting from the plan but also to act within the folds of the representation and transform the lozenge configuration, first in the three-dimensional space of the perspective cone and then in the vertical square plane of the Wall House. It is no coincidence that Hejduk uses the word "configuration", precisely in the terms in which Paul Klee (2011, p. 17) defines the German term "Gestaltung": «The theory of figuration (Gestaltung) deals with the paths that lead to the figure (to form). It is the theory of form, but on the emphasis on the paths that lead to it. (…) Compared to 'form', 'figure' (Gestalt) also expresses something more vivid. Figure is more of a form based on vital functions: so to speak, a function deriving from functions. These functions are purely spiritual in nature, the need for expression underlying them.»

B)   Time. We can insert the question of time within Klee's idea of "putting order to the movement". As we know, there are many types of time.

The time we are interested in right now is the technical time along which an orderly sequence of operations is deployed within the creative process. Webern speaks of a "given order of succession" and introduces the Goethian term of "coherence" to indicate the inner reason that gradually leads to form. The final shape is the result of an orderly series of operations that produce consistent variations of the initial theme. If the primordial form underlying everything is repetition and variation, then it is a matter of establishing the specific nature of the operations and the order in which they follow each other.

The operations we mentioned earlier – *Krebs and Umkehrung* – tell us something about the nature of these operations, they tell us that they are elementary operations: you reach the bottom and go back or you mirror the sequence of notes of a melody. It is the same type of elementary operations that Klee (2011, p. 15) puts at the base of figuration: «There are no concepts in themselves, but as a rule only binomials of concepts. What does "above" mean, without "below"? What does "left" mean, without "right"? What does "front" mean, without "back"?» Above/below, front/back, right/left, inside/outside are the elementary conditions that define the symbolic space within which variations are articulated starting from an initial theme. These are the same operations with which Carnap (1922, 2009, p. 59) defines the topological space of experience: the relationship before, within, between, near, far, etc.

The coherence Webern and Klee mention refers to the coherence of German idealism and the continuity with which everything takes shape starting from an original condition (Goethe's *Urpflanz*). Within language and representation, this continuity is articulated in a sort of gradualness, of which Goethe was indeed fully aware, when within the *Metamorphosis of Plants* (1999, pp. 125, 146) he speaks of "intermediate rings"[2], or when he wrote an essay on the representative nature of language as, "Significant stress for a single intelligent word", introducing the concept of "derivation", which refers to the different levels of which Chomsky's "deep structure" is composed.

A splendid example of this "internal coherence" in abstract painting are the *Architectonic Paintings* by Wladyslaw Strzemiński [figg. 6, 7]. For the so-called "unist" Polish painter, the development of figuration starts, "drifts", from the definition of the size of the canvas. In his *Architectonic Paintings*, the figuration begins starting from the limits of the field towards the inside of the canvas, and this operation recursively occurs within the figures thus obtained. Strzemiński writes (1927-28, quoted in Bois 1993, p. 141): «Starting the construction of a picture, we should take its length and breadth as the basic dimensions and as the starting point, while the breadth and length as well as the place of each shape should be dependent on them». From this point of view, some masterpieces of European abstract art abandon the projective plane of representation to "represent" and "depict" the symbolic space we have discussed.

Yve-Alain Bois (1993, p. 179) introduces the idea of painting as a strategic (and technical) model – *Painting as Model*, and distinguishes between a projective-representative plane and a symbolic plane, recalling Benjamin's youthful intuition (1917, 2008, p. 314): «We could say that the substance of the world is crossed by two sections: the longitudinal one of painting, and the transverse one of certain forms of design. It seems that the longitudinal section has a representative function, in some way contains things;

Fig. 6
Wladislaw Strzeminski, *Architectural composition 9c*, 1929.
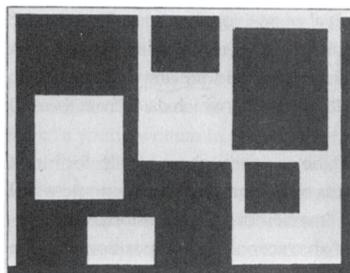
Fig. 7
Vilmos Huszar, *Composition 6*, 1918.

the transverse section is symbolic: it contains signs". Within Benjamin's meaning the longitudinal section closely resembles the horizontal axis discussed, based on a paradigmatic type of choice which represents things in its superficial (and beautiful!) appearance. The cross section is obtained within an abstract symbolic space whose signs represent a formal structure, as an expression of a strategic model. "Like chess pieces, like phonemes in language, a work has significance, as Lévi-Strauss shows, first by what it is not and what opposes, that is, in each case according to its position, its value, within a field – itself living and stratified – which has above all to be circumscribed by defining its rules.» (Alain-Bois 1993, pp. 254, 255) Let us amuse ourselves by playing a game in which diagrams record the subsequent phases of a compositional process at the profound level of its internal mechanics and use the 1935 project for Mies's Haus Ulrich Lange [fig. 8] as our test case. This text must describe an orderly and complete system of configurations starting from the form of the field ("The field comes first"). As in Strzemiński's *Architectonic Paintings*, the figures must originate from the edges of the canvas which simultaneously constitute its limits. Thus the first gesture is conditioned by the shape of the canvas and directs the organization of the field. The final configuration of the Lange house can be described through a succession of elementary operations starting from the two main rectangles that make up the floor plan of the house. Starting from the fenced edge of the courtyard (a) the serving space becomes "enough to" space inside the field, from the outside towards the inside (movement I). Recursively, from the corner of the next field, the living room space "becomes space" (movement II). Similarly, the second courtyard of the entrance (b) is divided into two movements through two figures: the entrance/garage compartment and the space serving the entrance/service courtyard centrifugally originate from the previous field. In the first movement of the series the figures always have one side in common and develop continuously. As with topology, the shape and size of the figures does not matter, but only the order they occupy in the field and the planimetric relationships they establish with each other. Starting from this type of topological configuration, a complete ordered series arranged on different levels can be built. Of course, at a certain level of depth, at the level where the "limited number of deep structures" of which Arís spoke, Ulrich's house can simply be interpreted as a court-type of house (more precisely, two courts), but in this case the intention is to "give the movement (an) order" within the creative process and in some way show what Chomsky calls the"elasticity of language" [figg. 9, 10].

There are many ways to describe the order and articulation that a spatial configuration assumes during the creative process. And this reveals a great deal about the richness and complexity, but also about the uncertainty and fragility, of architecture as a symbolic system. The richness corresponds to the variety of levels and ways in which it can be represented and to the number of moments and times in which creativity can intercept development within the formation process. Uncertainty and weakness correspond to the other side of the same coin, without which the first would not exist, i.e., the difficulty (the impossibility?) of preparing unique devices for the description and representation of these different levels. Nelson Goodman (1976, pp. 190, 191) includes architecture, but also topology and music, among the notational symbolic systems[3], however he considers it an incomplete or at least still immature system: «The architect's papers are a curious mixture. (…) We are not as comfortable about identifying an ar-
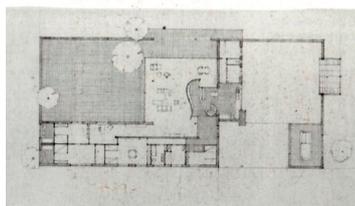
Fig. 8
Ludwig Mies, *Haus Ulrich Lange*, 1935.

In the center:
Fig. 9
Series of diagrams illustrating the (one) compositional process of the Haus Ulrich Lange.
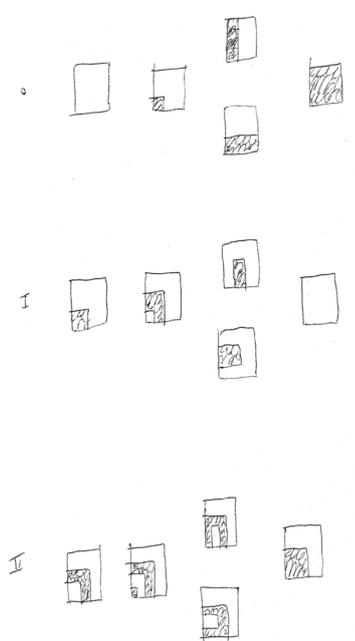
Fig. 10
Complete general series of diagrams.
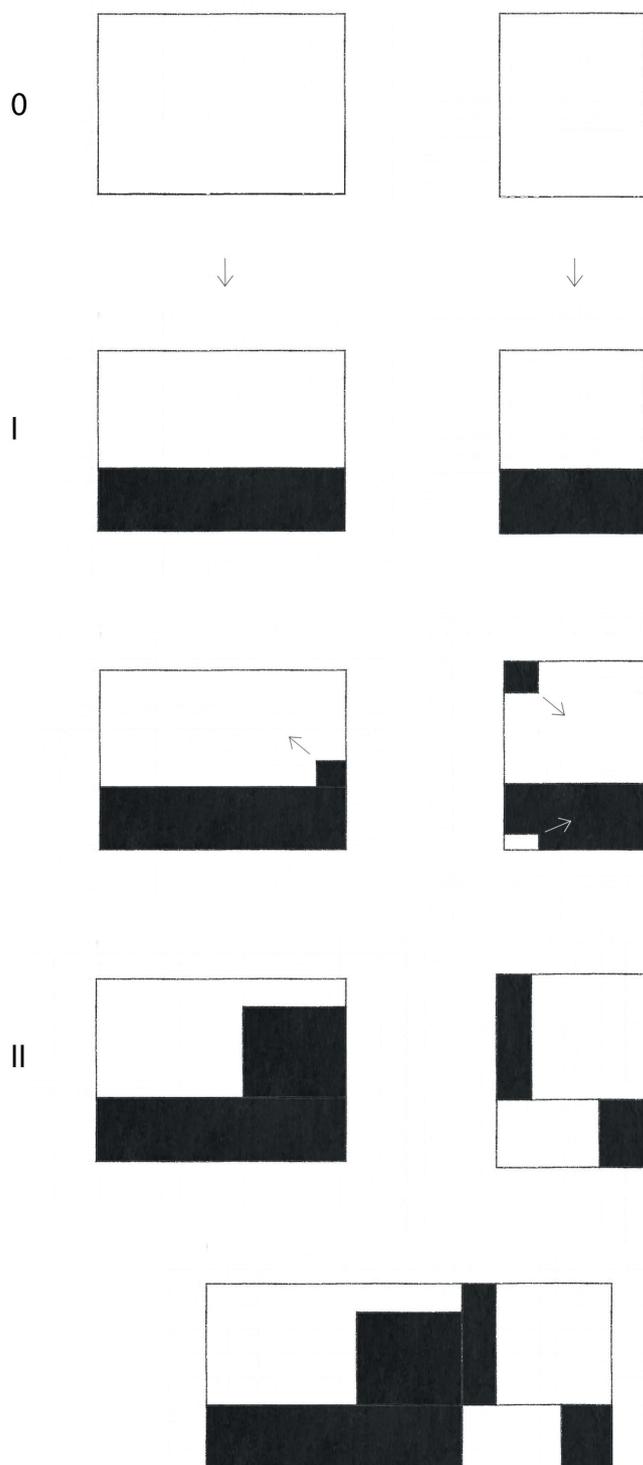
chitectural work with a design rather than a building as we are about identifying a musical work with a composition rather than a performance. In that architecture has a reasonably appropriate notational system and that some of its works are unmistakably allographic, the art is allographic. But insofar as its notational language has not yet acquired full authority to divorce identity of work in all cases from particular production, architecture is a mixed and transitional case". Nevertheless, John Hejduk[4], who knew Goodman's work well, did not hesitate to consider both the design and the building as his work: "In any case, drawing on a piece of paper is an architectural reality».

And, as Wittgenstein reminds us: A picture is a fact.

Notes

[1] Carnap defines three types of space: formal abstract space, the intuitive space of geometry and the physical-topological space of experience.

[2] In the essay entitled "The experiment as a mediator between object and subject".

[3] For Nelson Goodman, a symbolic system is notational when it allows us to retroactively trace the work back to the representation from which it was created and which also certifies its identity, regardless of the author and all particular contingencies.

[4] In "The Flatness of Depth" (1985, p. 69) Hejduk speaks very explicitly of architecture as a notational system: "Although the perspective is the most heightened illusion – whereas the representation of a plan may be considered the closest to reality – if we consider it as substantively notational, the so-called reality of built architecture can only come into being through a notational system".

Bibliography

ALBERTI L. A. (1435, 1913, 2011) – *Il trattato della pittura e i cinque ordini architettonici*. R. Carabba, Lanciano.

AMSTADI L. (2008) – *Paesaggio come rappresentazione, seguito da Le metafore dell'architettura*. Clean, Naples.

AMISTADI L. (2014) – "Le strutture dell'immaginazione". In: FAMagazine, [e-journal] 27-28.

AMISTADI L. (2015) – "Convenzioni e simboli della New England Masque". In: AMISTADI L., CLEMENTE I. (edited by), *John Hejduk*, Soundings 0/I, Aión, Florence.

AMISTADI L. (2019) – "Una casa come loro. John Hejduk e Curzio Malaparte". In: BORSARI A., CASSANI SIMONETTI M., IACOLI G. edited by ― *Archiletture. Forma e narrazione tra architettura e letteratura*. Mimesis Edizioni, Milan-Udine.

BENJAMIN W. (1917) – "Pittura e grafica". In: (2008) ― *Walter Benjamin, Opere complete, I. Scritti 1906-1922*. Einaudi, Turin.

BOIS Y. A. ― *Painting as Model*. The MIT Press, Cambridge/London.

CARNAP R. (1922, 2009) – *Lo spazio, Un contributo alla teoria della scienza*. Morcelliana, Brescia.

CHOMSKY N. (1969) – *L'analisi formale del linguaggio*. Boringhieri, Turin.

FOUCAULT M. (1966, 2006) ― *Le parole e le cose*. Rizzoli, Milan.

GOETHE J. W. (1999) – *La metamorfosi delle piante*. Guanda Editore, Parma.

GOODMAN N. (1951) – *The Structure of Appearance*. Harvard University Press, Cambridge/Massachussets.

GOODMAN N. (1976) – *I linguaggi dell'arte*. Il Saggiatore, Milan.

GOODMAN N. (1978) – *Ways of Worldmaking*. Hackett, Indianapolis.

GOODMAN N. (2008) – "Come gli edifice significano". In: DEWEY J., GOODMAN N. ― *Architettura formativa*, CHIODO S. (edited by), Unicopli, Milan.

GREIMAS A. J., COURTES J. (1986) – "Narratività". In: FABBRI P., edited by ― *Semiotica, Dizionario ragionato della teoria del linguaggio*. La casa Usher, Florence.

HAYS M. (2009) – *Architecture's Desire*. The MIT Press, Cambridge/London.

HAYS M. (2015) – "Encounter". In AMISTADI L., CLEMENTE I. edited by, *John Hejduk*, Soundings 0/I, Aión, Florence.

HEJDUK J. (1985) – *Mask of Medusa: works 1947-1983*. Rizzoli International, New York.

HEJDUK J. (1993) – *Soundings*. Rizzoli International, New York.

KLEE P. (2011) – *Teoria della forma e della figurazione, Vol. I, Il pensiero immaginale*. Mimesis, Milan.

LE CORBUSIER (1921, 1999) – *Verso un'architettura*. Longanesi, Milan.

MARTÍ ARÍS C. (1990) – *Le variazioni dell'identità. Il tipo in architettura*. Clup, Milan.

NIETZSCHE F. (1882, 2000) – *La gaia scienza*, Idilli di Messina. Biblioteca Universale Rizzoli, Milan.

POMMER R. (1978) – "Structures for Imagination". In Art in America (march-april).

STRZEMIŃSKI W. (1928) – *Unism in Painting*. English translation in: BENSON T., FORGÁCS É edited by (2002). *Between Worlds.* The MIT Press, Cambridge/London.

WEBERN A. (1960, 1989) – *Il cammino verso la nuova musica*. SE, Milan.

Lamberto Amistadi is Associate Professor in architectural and urban Design at the Department of Architecture of the Alma Mater Studiorum University of Bologna. He is deputy director of the online scientific journal "FAMagazine" <www.famagazine.it>, devoted to research and projects concerning architecture and the city, and co-director of the series "TECA. Teorie della Composizione architettonica" (Clean). Along with Ildebrando Clemente, he founded and directs the series "SOUNDINGS: Theory and Architectural Openness" (Aión), which has included monographic volumes on John Hejduk and Aldo Rossi. He is author of numerous publications, including the books *Paesaggio come rappresentazione* (Clean, 2008), *La costruzione della città* (Il Poligrafo, 2012), *Architettura e Città* (with Enrico Prandi, FAEdizioni 2016).
In 2018 he won a position as Coordinator and Chief Science Officer in the European-level call of Erasmus+ Strategic Partnerships for Higher Education, entitled "ARCHEA Architectural European Medium-Sized City Arrangement" < https://site.unibo.it/archea/en>.