A Study on the Organic Thought in the Works of Le Corbusier, Venturi, and Lynn

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Abstract
The purpose of this study is to argue the works of Le Corbusier, Venturi, and Lynn in an organic point of view to find what makes their works very impressive and aggressive in architectural history. It is important for architects to see the relationship between machines and organism, because of their inherent interest in structure. Although Le Corbusier, Venturi, and Lynn imply organic thought in different ways, organic thought played a decisive role for all of them. The most distinguished characteristic of organism is an inseparable organization on the whole. Organic thought has played an important role in architecture inspiring new ways of designing and organizing all elements involved.

Keywords: organism; complexity; geometry; symmetry; proportion

1. Introduction
The purpose of this study is to argue the works of Le Corbusier, Venturi, and Lynn in an organic point of view to find what makes their works very impressive and aggressive in architectural history. In short, three of them opened the new paradigms of architecture. They have lots of critics; however, their works are not criticized in favor of interrelation of the new paradigm and the organism.

Complexity is the subject about organization. As Jencks points out, complexity is the theory of how organization may be achieved by interacting components pushed from equilibrium to the threshold between order and chaos (Jencks, 1997). The word complexity has a wide and varied meaning. Most architects consider the term complicated (in my example, it is something mixed without interactions among elements) as complex (consisting of two or more related parts). There are, however, some differences between the complicated architecture and complex architecture. Complex architecture emphasizes more organic wholeness in uniting each architectural element.

Therefore there is a connection between architectural complexity and organic thought. With this assumption, this study will explore the real meaning of organic thought in the appearance of new architecture focusing on the works of the Le Corbusier, Venturi, and Lynn, to avoid misunderstanding of organic thought. Pursuing their organic thoughts, this study also sees how the later architects criticized and referred the earlier architects’ organic ideas to their works. Finally, through continuously revising their organic ideas with one another, this study pursues how their organic thought has played an important role in architecture inspiring new ways of designing and organizing all elements involved.

2. The Variations in the Literature between the Organic Thought and the New Movement of Architecture
As Jencks pointed out, organic complexity, virtually all those who referred to organic architecture, including Vitruvius, Alberti, Gaudi, modernist Gropius, Wright, and most recently, Greg Lynn seem to insist on work that shows fractal self-similarity, or unity with variety, which are characteristics of complexity (Jencks, 1997). One of the greatest architects in Canada is Douglas Cardinal, who designed the extraordinary layered and carved Canadian Museum of Civilization. In America, there are the Friends of Kebyar organized in 1982 after the death of Bruce Goff to continue his idea of an organic architecture. Bruce Goff developed an increasingly personal design vocabulary that built on Sullivan's and Wright's organic idea. The most inclusive description of organic architecture simply says that it is a process of design. Where Le Corbusier was transfixed by the Acropolis, Goff and Gaudi drew from the Gothic cathedrals of Europe, with their elaborate exposed and expressed structure. Both Wright and Goff represented values associated with the American character such as self-sufficiency, the rejection of tradition like the Art Nouveau movement, free expression, and a passion for the land (Branch, 1992).
Leon Battista Alberti was the first architectural theorist to formulate a doctrine of organic unity in architecture. He is usually perceived as just a user of mathematical proportion, and an organist. Alberti's view of nature is not exclusively mathematical. He stresses that "we should imitate the methods of nature, for example in the way bones and flesh are knitted together. Finally, and most importantly, the architect should study nature when he or she wants to design beautifully, because all beauty is based on 'concinnitas', which is the major law of nature" (Grabow, 1996).

William Morris found in Gothic architecture a magnificent manifestation of organic order that evolves its forms from the spirit of strict truthfulness, following the conditions of use, material and construction. Then after, the term organic was taken up as a banner by Louse Sullivan and Frank Lloyd Wright in America, who looked back to the spirit of Gothic. In 1945 Bruno Zevi made his reputation with Towards an Organic Architecture, according to Blundell, his case could have been greatly strengthened by the inclusion of Hans Scharoun and Hugo Häring (Jones, 1994). Art Nouveau also was inspired by plant forms and reflected the free-thinking attitudes of the intellectual elite of the day. One of its greatest exponents must be Gaudi.

Here one should not underrate the impact of a gradual shift in values from the progressivist and machinist ideologies of the 1920s, "towards various schemes of bio-technical thinking in the ensuing decade" (Curties, 1996). There may be some clues understanding the architecture of Venturi and Lynn, American architects, with exploring American organic architecture, because American organic architecture was based on the French theory, Romantiques. Maybe there are some connections among Romantiques, Le Corbusier, and American organism. More important in the development of American organic architecture were the theories of the French Romantiques at the Ecole des Beaux-Arts. French Romantiques originated in England. In literature, Romantiques is a reaction of sentiment against reason, of nature against artificiality, of simplicity against pompous display, of faith against skepticism. With regard to architecture, romantic naturalism can be understood as a reaction against the other form of Romantiques, Neoclassicism (Klassen, 1980). Viollet-le-Duc is representative of French Romantiques. He envisaged a rational architecture for the 19th century based on the coherent system of construction and composition that he had observed in Gothic architecture but that would in no way imitate its forms and details. Architecture, he thought, should be a direct expression of current materials, technology, and functional needs. His book, 'Discourses on Architecture' is containing information on the construction of iron skeletons enclosed by nonbearing masonry walls. It shows analogy between the construction of natural organisms and architectural structure. The most explicit example of the organic analogy is in Learning to Draw, in which both the issue of structural function and that of structural composition are raised. Here, the machinlike quality of organisms and the organic quality of machines are openly acknowledged (Hearn, 1990). His theory of architecture affected the development of modern organic and functional concepts of design. It especially influenced the late-19th-century American architect, Frank Furness.

Frank Furness studied in the atelier of Richard Morris Hunt. According to Mark Mumford (Mumford, 1989), while Hunt was at the Ecole, the Romantique sought essential principles of composition on the basis of which to found a new architecture. The Romantiques proposed a theory of architecture based on organic principles. The Romantiques thought that in nature, every organism evolved according to the law of functional adaptations, and building types developed similarly. Mark Mumford stresses that using scientific analysis, French theorists sought to define the essential relationship between function and structure in architecture. By thinking of buildings as organisms, Furness changed the concept of architecture from a static system to a dynamic construction. He transformed the building block from an inert structure to a vital body. Furness fully developed the idea of organic form in the Provident Life and Trust Building in Philadelphia. The Provident Life and Trust Building is a great granite block balanced on four great columns at ground level. Like giant muscles the column shafts compress and thicken. Otherwise Louis Sullivan joined the office of Frank Furness, and his method of architectural composition was derived from Romantique. He stresses form, its related function and just as living things express their function in their form, a building must express its life in its structure. In this sense, Sullivan began the design of the Wainwright Building by defining the single idea, which characterizes the life of the building. Within the structural skeleton, Sullivan fitted the spatial organs which form the building body. The Wainwright block is composed of three sections which correspond to the three functions of the tall building: a base, which contains entrance lobbies and commercial spaces, a midsection composed of office cells and a cap which
contains mechanical equipment. The three sections are differentiated because each performs a distinct function. Each function demands a form appropriate to it. The Wainwright based on the building's structural frame, but the relationship between form and structure is not clear in the building.

Wright was Sullivan's chief assistant when he designed the Wainwright building. He took Sullivan's idea and applied it to his work. Wright's work was based on a visual geometry, a dynamic compositional structure which he recognized as the essential element of organic form.

3. Organic Form Principles Verse Mechanical Form Principles

The most fundamental characteristic of organic form is wholeness. The coherence of all the parts into a single indivisible whole is so strong that the form appears complete. "There are no ragged edges," according to Waddington, "nothing obviously lacking or merely and irrelevantly added". This is other kind of distinction that led Aristotle to assert that wholeness is not a mere mass or sum of external parts: "The parts which constitute it," he said, "must be inwardly connected, arranged in a certain order, structurally related and combined into a system." This combination of inner connectedness and external order in organic form is evidence of a structural hierarchy of levels between part and whole, (Grabow, 1996).

Mechanism, otherwise, possess a different kind of unity, one based on the addition and combination of parts into a coordinated system. In the internal structure of mechanical form there is a hierarchy built up of independent rather than interdependent subsystems. Therefore mechanical form is fractionable: it can be subdivided into independent subsystems and the parts can be interchanged or replaced.

According to Morrison, "broken symmetries" is "a result of the balance between a rigidity of overall design and a flexibility of adjustment in the execution of details. Indeed, the variation within an overall, unified pattern manifest in broken symmetry has a distinct aesthetic appeal" (Grabow, 1996). It is true that the geometrically pure and precise shapes of mechanical form are uniform and standardized because the conditions of their production are repeatable. The kind of rhythm which arises from mechanical form is modular: it is based on the repetition of standard units and proportions. It is why Corbusier's works look like mechanical form. Organic rhythms derive from a balanced relationship between rigidity of overall design and flexibility of adjustment in the parts is also the biological foundation of proportion. Like fractal self-similarity, proportion governs organic form, not by a standard system of modular ratios, but by regulating the range of variation within a uniform pattern. It operates hierarchically: it starts in the molecular realm and pervades the living structure all the way up to its harmonious total form.

In summary, organic form is holistic, irregularity, broken symmetry, variety within unity, diversity, rhythm, hierarchical proportion, similitude of shape in relation to size, and centralized gradient contiguity of the parts that represent functional adaptations to local environmental conditions. Mechanical form, on the other hand, is fractionable, consisting of a sequential, symmetry, standardization, and perfection of surfaces, repetition, modular proportion, independence of shape in relation to size, and a decentralized, tectonic assemblage of parts that can be repeated anywhere, universally.

Ho sees to be the major contrasts between the mechanical universe and the universe of organisms. A mechanical system is built of isolatable parts, each external and independent of all the others (Ho, 1997). An organism, however, is an irreducible whole, where part and whole, global and local are mutually implicated. Organism is a great generator for the something new. It seems to be illogical to contrast organism with mechanism, because mechanical principle itself is already inspired by organism. Therefore organism and mechanism can not be at the same level. Mechanism has to be researched in the realm of organism for proper critics. Therefore the works of Le Corbusier, so-called mechanist, have to be explored from the organic point of view.

4. Geometry in the Works of Le Corbusier, Venturi and Lynn

Geometry provides the apparently universal language with which architecture assumes to speak through history, across culture, and over time. It is the preferred language for architectural communication; its interrogation has become the dominant form of writing in architecture. More precisely, the majority of both spatial and theoretical innovations in architecture have become increasingly dependent on geometric conflicts. Lynn also argues that architecture can lay claim through geometry to a seemingly universal language that spans different eras and cultures. Le Corbusier argued that "Gothic architecture is not, fundamentally, based on spheres, cones and cylinders. Only the nave is an expression of a simple form, but of a complex geometry of the second order (intersecting arches)" (Le Corbusier, 1986). He was against Gothic architecture to advocate his pure form, but he did not see more beautiful organic complexity hidden in intersecting arches. He also believed that the regulating line brings in the tangible form of mathematics which gives the reassuring perception of order. The choice of regulating line fixes the fundamental geometry of the work; it fixes therefore one of "the fundamental characters" (Le Corbusier, 1986). This is one of the most decisive moments of inspiration.

According to him, the facade of the Arsenal of the Pireaus is regulated by a few simple divisions which
give the proportion of the area to the height and fix the placing of the doors and their dimensions in intimate relationship with the actual proportions of the facade.

Le Corbusier thought that the great Achaemenian cupolas form one of the most subtle conclusions of geometry. His analogy is based on Gaudian geometry so that his analysis is two-dimensional rather than spatial three-dimensional. He admires Michelangelo's St. Peter's and thinks that Michelangelo shows "a gigantic geometry of harmonious relationships through the rotundas, the set-backs, the intersecting walls, the drum of the dome, and the hypostyle porch" in St. Peter's (Le Corbusier, 1986).

Otherwise, Venturi argues that contradictory levels of meaning and use in architecture involve the paradoxical contrast. He thinks that paradoxical contrast of proportion can be found in the rear facade of St. Peter's. He stresses that "Michelangelo's enormous rectangular openings in the attic story of the rear facade are wider than they are high, so that they must be spanned the long way. This is perverse in relation to the spanning limitations of masonry, which dictate in classical architecture that big openings, such as these, be vertically proportioned. But because one usually expects vertical proportions, the longitudinal spanning expresses validly and vividly their relative smallness" (Venturi, 1966). In St. Peter's, Le Corbusier was more interested in the structural form than proportion, otherwise Venturi tried to find Michelangelo's geometric proportion to advocate his contradiction and ambiguity.

In Lynn's point of view, the present static alliance between rigid geometry and whole organisms cannot be entirely overcome but may be made more flexible and fluid through the use of more supple geometry (Lynn, 1998). Exact geometry can be reduced to ideal proportions. It is not indeterminate, non ideal, heterogeneous, and undecidable. Therefore it is related with ideal form, which is based on eidetic mathematics. In Lynn's definition, "eidetic forms are (1) exact in measure and contour, (2) visually fixed, and (3) identically repeatable. In terms of constructing form, Architecture is reducible, static, exact, fixed, proportional, and identically reproducible" (Lynn, 1998). In visual, Le Corbusier's works look fixed, proportional and identically reproducible because his work is related to ideal form.

There is another geometry so-called Probable geometry. Its concept is different from others above. From Lynn's point of view, "a case study of the random section model of probable geometry will provide architecture with the possibility of writing volumetric indeterminacy within a precise and rigorous system of measurement a system of serial transactions along with related coefficients of size, shape, and orientation (Lynn, 1998). Lynn thinks that the first attempt by an architect to develop a provisional system of geometric transactions to describe the unrelated contours of spatial, structural, and programmatic contents was by Le Corbusier in the 1920s. In the serial parallel plan cuts of the Maison Dom-ino and the serial parallel section cuts of the Maison Citrohan, Le Corbusier attempted to develop structural and geometric systems that would be completely independent of the organization and functions of the buildings. In the biological practices of stereology these provisional cuts are referred to as "random sections" (Lynn, 1998).

Lynn also argues that the flexibility and adaptability of structure and program in the Citrohan and Domino organizations are complicatedly connected to this geometry of sectional regulation and intersectional probability. The urban, political, structural, programmatic, and spatial effects of the extension of the principles of the random section and random plan since their invention by Le Corbusier are suggested by the Paris library projects of Rem Koolhaas (Lynn, 1998). He seems to re-investigate Le Corbusier's plans but in terms which make much of floating volumes of complex curvature, layers of opaque or transparent glazing and dramatic ramps for movement. The flexibility of the program in the Citrohan was a starting point in his works to imply organic complexity. As it shows new movement in applying geometry from exact geometry to inexact geometry that is fundamental in organism although we do not know whether he was conscious of it or not. In Le Corbusier's free plan, we can confirm that the appearance of the new architecture is based on organic flexibility, even in mechanist Le Corbusier's works. Greg Lynn explores organic geometry, which is different from Euclidean geometry. In the introduction of the book, "Fold, Bodies, & Blobs collected essays", Ole Bounman says that Greg Lynn takes up a position in a line that runs from Pythagoras, via Vitruvius and Alberti, and Colin Rowe. They from Ole Bounman's point of view, were always looking for the underlying structures of external forms and relationships to which they subsequently attached metaphysical meanings. Conversely, they sought to externalize their metaphysics by regarding certain proportional systems as absolute and God-given. Lynn argues that "the disappearance of symmetry and formal homogeneity is a sign that more information can be incorporated into a symbolic system: symmetry breaking is not a loss but an increase in organization within an open, flexible and adaptive system" (Lynn, 1998).

Lynn takes the Statue of Liberty for an example to advocate his "inexact geometry". in his describing; the geometry that incises the Statue of Liberty is pliant and supple. The Statue of Liberty is a body that can not be reduced to its original size or simplicity. A body resists
the proportional coordination of an anthropomorphic organism. The occupation of the folds of the dress, the blades of the crown, the strands of the hair, and the muscular of the outstretched arm is neither accidental nor anthropomorphic, but results from unpredicted affiliations between networks of disparate subsystems that make contingent connections between multiplicities of spaces.

Lynn's The Stranded Sears Tower project also adopted the geometry shown in the Statue of Liberty. He also used alternative alliance between pliant geometry and a body without a single organization to the Stranded Sears. According to his explanation, the stranded Sears Tower intends to generate "a multipliheight urban monument that internalizes external forces while maintaining an interior structure that is provisional rather than essential" (Lynn, 1998).

Lynn adopts The Sears Tower that internalizes its multiplication by dividing itself into a nine square tower that caned "bundled tube" and then he reformulates the vertical bundle of tubes horizontally along a strand of land. The nine contiguous tubes accommodate themselves to the multiple and often discontinuous borders of the site. The relationships between tubes are not precisely parallel but more or less parallel. These pliant deflections generate affiliations with particular local events like adjacent buildings, landforms, and pedestrian roads that would have been repressed by a more rigid and reductive geometric system of description. In The Sears Tower, the deformations of twisting, plaiting, and bending are not accidental but unpredicted. Then it becomes not a just complicatedly mixed building but real organic complex, one which implies self-similarity, dynamism, curvilinearity, elaborately interrelated composition between order and complexity. It also uses more pliant and flexible geometry, which are applied for the Statues of Liberty.

The best example for Venturi's geometry is The Fountain project of the Fairmount Park in 1964. The geometry of its inner plats is angular, and it contacts the curvilinear surfaces of the outer plates at welded points. This airy poché is exposed at the openings of the enclosure, back and front. A series of vertical manholes for maintenance are located in the lower plates. These contribute a scale that contrasts with the monumental scale of the whole. This fountain is large and small in scale, sculptural and architectural in structure, analogous and contrasting in its context, directional and non-directional, curvilinear and angular in its form. It was designed from the inside out and from the outside in. Venturi's work is between Lynn's supple geometry and Le Corbusier's exact geometry. As if Le Corbusier was not conscious of ambiguity and contradiction in his works, Venturi also did not know himself that his Fountain project implied the pliant geometry that Lynn preferred.

5. Symmetry in the Works of Le Corbusier, Venturi and Lynn

Symmetry is very common concept in architecture from Greek temple to contemporary architecture. Symmetry has usually been understood in architecture "as an underlying organization upon which variations are ordered" (Lynn, 1998). Lynn argues that the disappearance of symmetry and formal homogeneity is a sign that more information can be incorporated into a symbolic system; "symmetry breaking is not a loss but an increase in organization within an open, flexible and adaptive system" (Lynn, 1998). Otherwise Vitruvius unlike Lynn stressed that without symmetry and proportion there can be no principles in the design of any temple. In Lynn's works, it is not easy to find that he is always trying to break symmetry. To refuse the transcendence of static form, in Lynn's opinion, architecture must begin to describe the particular characteristics of incompleteness rejected by the exactitude of geometry and the symmetry of proportion. He seems to like resisting fixed types and think that random mutation makes flexible, adaptable, emergent and generative systems (Lynn, 1998).

Lynn's symmetry breaking is based on William Bateson's theory. Bateson demonstrated that the monstrosities display higher degrees of symmetry than do normal hands. On one hand, the normal asymmetry between four fingers and the thumb is replaced by two groups of four fingers reflected along a mirror axis. William Bateson, in Lynn's opinion, did not arrive at this theory of symmetry through classical reduction to types but rather by attempting to theorize processes of variation outside of their defective relationship to a norm. His views on symmetry are explanatory rather than taxonomic.

Lynn's organic form is strongly affected by Bateson. Bateson gives all theoretical ground to Lynn's organic form and building saying that where information is lost or mutated, growth reverts to simple symmetry. Thus symmetry was not an underlying principle of the essential order of the whole organism, but was instead a default value used in cases of minimal Information. Organisms are not attributed to any ideal
reduced type or single organization; rather, they are the result of dynamic nonlinear interactions of internal symmetries with the vicissitudes of a disorganized context. These contexts become generative fields once they are organized by flexible and adaptable systems that integrate their differences in the form of informational constraints. Therefore, for Lynn, Symmetry breaking is a sign of the incorporation of information into a system from the outside in order to unfold its own latent diversities.

Finally, Lynn concludes "Symmetry breaking is not a loss but an increase in organization within an open, flexible, and adaptive system. Symmetry breaking from the exact to the anexact is the primary characteristic of supple systems. These flexible economies index the incorporation of generalized external information through the specific unfolding of polymorphic, dynamic, flexible and adaptive systems. Symmetry is not a sign of underlying order but an indication of a lack of order due to an absence of interaction with larger external forces and environments. Lynn's symmetry breaking is surely a way of organic thinking.

Le Corbusier was great at using the eventful exception. He enjoyed the exceptional location of windows like the eventful exception in columns shown in the ground floor of the Villa Savoye. It is a kind of symmetry breaking. It shows an "altered symmetry" called by Venturi (Venturi, 1966). Venturi gives an example to explain his "Contradiction Adapted" with the altered symmetry in Chapter 7. The example is the windows at Mount Vernon. The windows do not follow an exact symmetrical pattern. Instead, the window pattern is the result of earlier renovations, and it breaks the dominant order of the central pediment and symmetrical wings. For Venturi, the altered symmetry is the subtle compromise between order and circumstance. Therefore the compromised geometry adopted by Le Corbusier is a good example for him to explain his adapted contradiction. Accordingly, Venturi thinks that altered symmetry, not "broken symmetry" produces ambiguous rhythms and vibrant tensions in the facade.

According to Venturi, in the Piazza del Popolo the domes of the twin churches confirm each building as a separate whole, but their single towers, themselves symmetrical, become inflective because of their asymmetrical positions on each church. In the context of the piazza each building is a fragment of a greater whole and a part of a gateway to the Corso. At the smaller scale of Palladio's Villa Zeno the asymmetrical positions of the symmetrical arched openings cause the end pavilions to inflect towards the centre, thus enforcing the symmetry of the whole composition. This kind of inflection of an asymmetrical ornament within asymmetrical whole is a dominant motif in Rococo architecture. Venturi also found that asymmetrical composition makes buildings inflective, but he did not know that asymmetrical composition within asymmetrical whole is the most popular principle in the world of living beings like animals and insects.

Although Greek temples based on symmetry inspired Le Corbusier to design the volume of Villa Savoye, his plan is asymmetrical unlike Greek temples. This asymmetry is caused by adding, subtracting, and moving some information and elements in building. As Colquhoun mentioned, if the main doctrine of the Modern Movement is that functions demand expression, Modernist's fundamental thinking is based on Romantique. American organic architect, Frank Furness, his method of architectural composition was derived from Romantique. Furness stresses that form is related to function and just as living things express their function in their form, a building must express its life in its structure. Through arguments above, organic thought, asymmetry, the movement of Modernism, Le Corbusier, Romantique, American architects and Furness via Venturi to Lynn, all of them have some relationships in terms of adopting organic thought.

6. Complexity in the Works of Le Corbusier and Venturi from Lynn's Point of View

Venturi supports his theory with lots of illustrations of buildings and plans from past periods. The method is similar to that pursued in Toward a New Architecture. Venturi's approach seems to imply a less profound synthesis and a more fragmented aesthetic. Venturi, from Colquhoun's point of view, draws on "the tradition according to which the communicating part of architecture is its ornamental surface" (Colquhoun, 1985). The notion of type for Venturi can not be therefore separated from the notion of ornament. Venturi, as Colquhoun notes, not only separates structure from meaning, he also separates form and space from meaning. His theory is as much an attack on formalism as it is on functionalism. Compared with Frank Furness's theory, Venturi's doctrine does not seem to have any organic thought in this aspect. According to Venturi's point of view, Furness, who mentions that form is related to function (and just as living things express their function in their form) must be just a formalist or functionalist.

By this separation Venturi aims a lethal blow not only at modernist totalization but also at the traditional notion of fitness. But the building as a whole, in relation to structure and form, still retains "its quality
as an architectural concept through the fact that it becomes the ironic representation of a contradiction (Colquhoun, 1985). Venturi may attack totalisation to get more freedom in composing all architectural elements in various ways. It seems to be true that the main purpose of Complexity and Contradiction in Architecture is to deny the modern movement idea that the functional organization of a building obeyed a unitary logic which constituted its aesthetic meaning.

Colin Rowe distinguishes the differences between Palladian and Corbusian villas. According to Rowe, the structural lines of support differ between the two villas as do the structural systems: Palladio uses solid bearing walls while Le Corbusier uses point supports. These structural differences, from Lynn's point of view, are used to explain Palladio's spatial symmetry and centralization and Le Corbusier's free plan arrangement.

According to Lynn, the differences in fenestration follow from these structural and spatial differences; Palladio employs pierced solid walls, while Le Corbusier exploits the point structure by cutting the horizontal strips of ribbon windows. Finally, the differences in roof treatment are explained by noting that in the case of Palladio they are additive and reinforce the overall volume. While for Le Corbusier they are subtractive and diminishing in the overall volume.

Palladio, from Lynn's point of view, was seen as a rigid and systematic composer who adapted each villa to a single dominant schema. Le Corbusier was understood to be less dogmatic in his use of proportional regulation, and therefore achieved far more complex results. Flexible thought in planning buildings makes the building more complex and impressive. The flexibility in the whole is a characteristic of organism. Le Corbusier's works during the movement of modernism implies totalization, but he had more organic thought to make building flexible on the whole than any other modernists. This is a fundamental reason why his buildings are more impressive than any others.

7. Proportion in the Works of Le Corbusier, Venturi, and Lynn

Organic models of proportion, according to Lynn, have always depended on a composition of balanced symmetries within a single transcendent geometric whole. "Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard." Architectural proportion has been inspired through the whole human body. This Vitruvian ideal of a proportionally complete organism links "both models of the whole human body and architecture through ideal systems of measure." Le Corbusier found his Modular in the ideal human body. The Model of the

Fig.8. Robert Longo, Sword of the Pig, 1983

Modulor is primarily linked to elevation and section. Unlike Le Corbusier's Modulor, postmodern aging bodybuilder's alteration and variable proportion are, by Lynn's argument, the byproducts of continual composition, often as a resistance to temporal deterioration. Longo's Sword of Pig gives a theoretical background for Lynn's supple geometry (Lynn, 1998). Lynn notes that the bodybuilder not only illustrates the disintegration of proportional stasis, but further suggests the instability of any paradigm that depends on a fixed and singular body. This figure frustrates the possibility of any static reference of the body upon which the mathematics of an ideal villa could be founded; In this case, Sword of the Pig expresses the shift from proportional stasis to a dynamically stable, fluidly transforming body.

In the Sword of Pig, variable transformations become continuously internalized within an organism that is unified and stabilized through differential repetition. Lynn's Sear Tower project seems to represent this continuously differential repetition. Lynn notes that the bodybuilder actively recomposes itself as a perpetual mutant without origin: there are no ideal bodybuilders, only variations.

Otherwise Venturi argues that the proportion is constant regardless of size (Venturi, 1966). It is a quite different idea from Lynn's interpretation of the proportion regarding the bodybuilder. According to Venturi, classical orders make for another kind of contrasting adjacency when the giant order is juxtaposed on the minor order and the proportion is constant regardless of size (Venturi, 1966). Venturi gives an example to support his constant proportion and argues that Jefferson's combinations of column sizes at the University of Virginia contradict the maxim that every magnitude requires its own structure. But the juxtapositions of elements contrasting in size are proportional in shape.

Otherwise Le Corbusier notes that harmony and proportion incite the intellectual faculties and arrest the man of culture. He treats decoration as low code comparing the peasant with the civilized man. He stresses that the peasant loves ornaments and decorates his walls. The civilized man wears a well-cut suit and is the owner of easel pictures and books. Decoration is the essential overplus, the quantum of the peasant; and proportion is the essential overplus, the quantum of the cultivated man (Le Corbusier, 1986). Considering Le Corbusier's thought regarding decoration and
proportion, it is natural that his works are not decorative but proportional. Venturi, however, does not treat decoration as the quantum of the peasant like Le Corbusier. Venturi seems to be more interested in decoration rather than proportion. He enjoyed altered proportion rather than pure proportion.

8. Conclusion

Greg Lynn's complexity is that some organization can not be reduced to any ideal form, single cause, or exact geometry. According to this logic, his complexity implies an integral, generative, and stabilizing of some systems. Granted, Le Corbusier used altered symmetry in part. It was a very common method to break symmetry during the Modern Movement. Venturi also used altered symmetry to break symmetry for ambiguity, contradiction, and complexity. One step further, Lynn defines that symmetry breaking is not a loss but an increase in organization within an open, flexible and adaptive system. Nowadays, although we often find symmetry in living organisms, symmetry can not be one of the main design elements in contemporary architecture any more, because symmetry restricts designers' flexible thought.

Lynn's design process inspired by organism must be stable but his built-form is still static. Maybe we never get organic architecture like utopia, but we need to understand organic principles to design the new appearance of the architecture.

However, there have been great designers and architectures based on organic thought. Although Le Corbusier, Venturi, and Lynn imply organic thought in different ways, organic thought has played a decisive role for them. The most distinguished characteristic of organism is inseparable organization in the whole. This characteristic of organism is very similar with Jencks' complexity concept. As we have seen above, organic thought has played an important role in inspiring new ways of designing and organizing all architectural elements.

References