



I. VISUAL EXPERIENCES AND EXPERIENCIBILITIES IN URBAN SPACES

ARCHITECTURE: THE DESIGN OF AN EXPERIENCE

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In a multidisciplinary way, this research takes the topic of our experience of buildings considering what all human beings have in common: the sensorial organs, the body, and a brain predisposed for responding to buildings in a relatively similar way. We will treat the different processes that arise in us in our encounter with a work of architecture. This article is divided into the discrete but interacting steps that characterize all human cognition: from the early processes of the acquisition of information from the environment, to the most complicated thoughts and feelings about architecture. From the points of view of physiology, perception psychology and semiotics, we look for the way the human constitution molds our experience of things. The intention is to use that knowledge creatively in architecture: to design according to the way we experience buildings.

Keywords: architecture, cognition, interaction, meaning, perception.

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Introduction: architectural experiences

“<...> sculpture is not the mere cutting of the *form* of any thing in stone; it is the cutting of the *effect* of it” (Ruskin 2001: 225).

John Ruskin

The first thing we should understand before talking about our experience of architecture is the difference between reality and the human experience of that reality. Intuitively we consider both concepts as the same, because we are not aware of our incapability of experiencing all aspects of things. We only experience what is accessible to

our senses, body and mind. Thus human beings mental and physical constitution act as filters that condition the phenomena we can experience and the way we do it. Furthermore, human constitution also acts as a generator of phenomena; because through our experience we add qualities to objects.

On basis of scientific disciplines as physiology and perception psychology, we will expose the different kinds of characteristics that shape radically our encounter with architecture. Those factors can be considered the components of any architectural experience, and are divided according to the series of steps of our obtainment of information from the environment.

The present article which is based on a doctoral thesis shows in a synthetic way the physiological and psychological processes that lie behind our experience of architecture. Its intention is not to explain in detail those well know phenomena (that is not the contribution), but to show through building study cases the not very known manner in which those aspects of experience influence the way we design buildings; that is the main objective of this research. The contribution to *cognition of art* is found in the way the different kinds of architectural experiences have been differentiated, structured and exemplified.

The chapters of this research have a specific objective: each of them responds to one of the following questions: How does it affect our experience of buildings the constitution of our sensorial organs?; What processes are done with the hundreds of discrete pieces of information we receive for creating a whole perception of our environment?; What kind of architectural shapes are catalysers for our thinking processes?; What are the different actions that buildings allow us to perform?; How do we recognize and assign meaning to buildings?; and besides aesthetic pleasure, what are the emotions more related to our experience of buildings?

This is an analytical study because the different kinds of experiences that a work of architecture can induce us are explained separately. Nevertheless, we insist that any architectural experience as a whole is simultaneously composed of several of these elements.

Among the authors that have done great contributions to the topic of how we experience buildings we find: Christian Norberg-Schulz (1965), Robert Venturi (1972), Rudolf Arnheim (1977), Sven Hesselgren (1980), Charles A. Jencks (1981) and Juhani Pallasmaa (1996). Norberg-Schulz (1965) alerts us of not confusing an architectural theory with a theory about our experience of architecture; this second kind of theory is the category that this article belongs to. A special characteristic of this second kind of theoretical work is that its topics are at the same time *scientific*, because they are based on the research of several authors in that kind of disciplines; *artistic*, due to the fact that any human being is consciously or unconsciously involved with multitude of the cited phenomena while creating art; and they are also *quotidian*, because most of the treated phenomena are not only experienceable in works of art but also can be found in any natural or artificial environment.

In recent years, a more actual and comprehensive approach to our experiences of artistic works has arisen, which is based on cognitive sciences. This new approach may allow us to go deeper in our comprehension of the experiences we have with buildings. Under a different light, the topic of our experience of architecture is again a subject of interest.

As we have said, in this article we will follow the different steps that are present in our cognition of the environment. Human brain is completely isolated from the world; therefore before talking about its processes, we should talk about its external extensions. The impressions that the external world leaves in our senses are the first kind of experience we will analyse.

Sensations

“Stimulus and receptor are duals in the same sense as are environment and organism” (Kepes 1966: 48).

Heinz von Foerster

Every organism, object and event emits signals or messages, but each organism is only receptive to certain messages of all the infinity of information that could be attended. We can think of light and sound as information resources coming to us from “reality” (Fig. 1). Nevertheless, for understanding human experiences of those information resources it is necessary the comprehension of our receptors: the senses.

How does it affect our experience of buildings the constitution of our sensorial organs?

Our colour receptors in the retina are only sensible to a limited range of electromagnetic waves; visible light, from violet to red, is the radiation we can see. Yellow-green, the colour in between, is the one we are more sensible to, and therefore the most brilliant of the colours of the spectrum. Besides visible light and its colours, there are other radiations, like ultraviolet light, that are out of our visual range (Fig. 2).

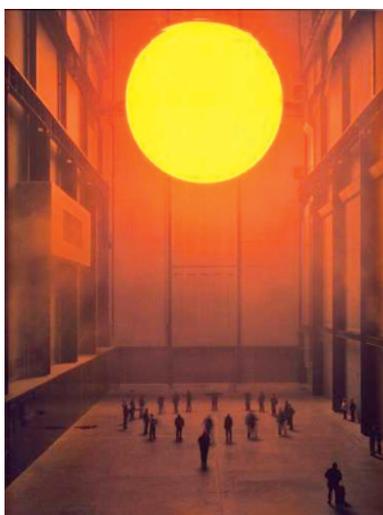


Fig. 1. Olafur Eliasson. *The Weather Project*. Tate Modern, London, 2009 (Bjone 2009: 114)

Note: While white light functions as an information resource that allows us to see all the colours, the monochromatic yellow lighting in *The Weather Project* permits us to see only illuminated orange surfaces or not illuminated black surfaces.



Fig. 2. Ryan McGinness. *Black Holes*. Caja Madrid, Barcelona, 2008 (McGinness 2011)

Note: By taking into account optics and visual physiology, we can create environments that extend the normal range of our visual experiences. Despite its invisibility, we can see the effects of UV light on fluorescent paintings.

There is a specific characteristic of our visual receptors that transforms the way we experience things; when our receptors get tired of certain insistent stimuli we lose sensibility to those stimuli. Afterimages are caused by a strong visual stimulus, for example, an intense pure colour, a contrasting image, or the glare caused by a light source. All of them make us see an illusory image wherever we look at, with a similar shape, but with the complementary colour of the original stimulus (Fig. 3). A special kind of afterimage is the one caused by a contrasting net of lines; while we look at them and move our eyes, we carry the afterimage with the same shape of the original pattern, crossing both images with each other. A flickering experience arises (Barrett 1970: 38) (Fig. 4).

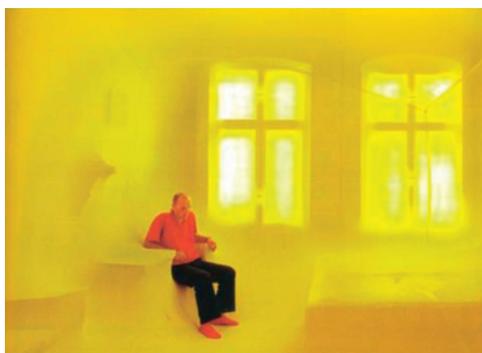


Fig. 3. Hans Hemmert. *Saturday Afternoon at Home*. Neukolln, 1995–1996 (Schulz-Donburg 2000: 77)

Note: Because of our colour receptors fatigue: after staying in this yellow environment for a while, the room we visit after it will be seen tinted with violet.



Fig. 4. Kengo Kuma. Nakagawa-machi Bato Hiroshige Museum, 1998–2000 (Casamonti 2007: 155)

Note: A high contrast pattern producing the characteristic flickering effect of Op Art.

Owing to adaptation, uniform environments can stop being stimulating to our senses. The change in the received stimuli is of vital importance for preventing the loss of sensibility. Environments that are rich in sensorial aspects, as rococo interiors or Chinese temples, give us high intensity and contrasting stimuli while we move through them (Fig. 5).

Another sensorial characteristic that has been used in printing, television, and pointillism, is that our receptors have a limited capacity to distinguish tiny things. This causes that we see a group of points of different colours, as a fused unit with the average colour of the components (Fig. 6).

We have focused in our visual organ and the way it tints our experience of buildings. All the factors described can be considered as the multiple possibilities of a creative game; one of designing sensorial experiences through architecture (Fig. 7). We could extend this section by considering the design of architectural experiences that include the other senses.



Fig. 5. Olafur Eliasson. Ceramic mosaic installation in Yu-un House by Tadao Ando, Kyoto, Japan, 2006
(Bjone 2009: 177)

Note: In this Guest house, the light is destroyed in little contrasting fragments, as in a faceted precious stone. This makes the environment more varied and stimulating while we move.



Fig. 6. Antoni Gaudí. Trencadis in Batlló House. Barcelona, 1905–1906

Note: From the distance we see a colour gradient; but having a closer look we see the tiny mosaics creating a pointillist effect.



Fig. 7. Daniel Libeskind. Jüdisches Museum Berlin, 1999

Note: In the Holocaust Tower of the Jüdisches Museum Berlin the light that enters is not enough for illuminating the interior half-light; nevertheless it is able to dazzle whoever looks upwards. The intense light spreads inside the eye creating a veil over the retinal image; a situation that is inseparable from our experience of this space.

Perceptions

“Offsetting the relatively simple lens of the human eye is a fantastically complicated brain that permits us to “see” far more than we sense” (Solso 1994: 14).

Robert L. Solso

In the previous chapter we focused in what we can sense and how we do it, but the process by which we experience architecture and other environments does not finish here. The impressions received through the receptors in the senses are sent to the brain; they are interpreted and transformed into the objects we perceive.

What processes are done with the hundreds of discrete pieces of information we receive for creating a whole perception of our environment?

The early processing of the sensory data in the visual cortex of our brain involves the detection of certain features in the image by the neurons: vertical or horizontal elements, angles, curves, etc. More interesting than knowing about the existence of those detector neurons is to know what happens when the information received by them interacts and distorts our perception of lines and angles. Those perceptual facts were well-known by classical Greek architects (Figs. 8, 9).



Fig. 8. ARM Architecture. *Digital Harbour*. 1010 Latrobe St. Melbourne, 2007 (ARM... 2010)

Note: The Cafe Wall illusion: one of the most popular distortion illusions in which the parallelism of lines is lost because of the way our brain reacts to certain line patterns.

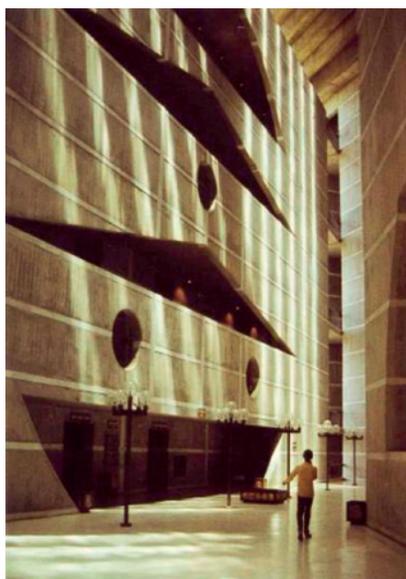


Fig. 9. Louis Kahn. National Assembly Building, 1962–1983 (Brownlee, Long 1991: 242)

Note: In this building of Bangladesh, we find the same distortion that the Parthenon would have if it had not been corrected: the perceived curvature of the base lines of the triangles.

After feature detection follow the more known processes explained by Gestalt psychology: figure-ground separation and the organization of the visual information by proximity, closure, similarity, etc. We are “detectors” of lines and angles, but also of figures; those simple and closed shapes we pay attention to, while leaving their surrounds as a background. The figure and ground ambiguity, and the change of the Gestalt laws that we use in organizing the patterns, can cause a perceived movement in a building surface (Figs. 10–12).



Fig. 10. Norsk Folkemuseum, Oslo
Note: As in the Rubin vase, in the balusters of this traditional Norwegian cabin there is equilibrium between the material and the spatial parts. Our selection of what we see as figure and ground is easily interchangeable.

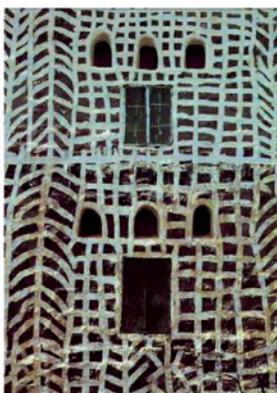


Fig. 11. Jabal Gheylyan, Yemen (Maréchaux, M.; Maréchaux, P. 1997: 181)
Note: The continuity of the white stripes or the closure of the black squares may be the factors that decide how we perceptually organize this facade.



Fig. 12. Francisco Antonio de Guerrero y Torres. Pocito Chapel. Mexico City, 1791
Note: For a moment we focus on the white zig-zag stripes and for another on the blue ones. The change of figure and ground, and the fact that the angles of the stripes have a perceived direction, induce us to see movement in the domes of this chapel.

It is difficult for us to notice the connection between our way of perceiving and sensing, and the way we create architectural compositions. In the same vein, a fish could not be able to describe how water affects his quotidian experience. What is undeniable is that compositions we create would be very different if our perceptual mechanisms were changed. As we have said, lines and figures seem to interact, distorting each other and allowing us to compose different groupings with them.

Besides our perception of planar shapes, for a wider comprehension of our experience of architecture we should talk about the way we see the three-dimensional world. We do not have sensorial receptors to see space directly; depth perception, as all kinds of perception, is a process where eye and brain work together. Our experience of space is an elaboration or interpretation made by our mind, taking into account certain characteristics or cues present in our retinal images: occlusion, disparity, size gradients, linear perspective, etc. Objects designed according to those cues take advantage of

our perceptual habits of inference and make us see space and volumetric shapes on flat surfaces. That kind of experience is the one we find in the illusory architecture of the baroque and other contemporary examples (Figs. 13, 14).



Fig. 13. Eastern Design Office.

A House Awaiting Death. Ise, Japan, 2010
(Eastern Design Office 2011)

Note: Even though they are coplanar irregular figures, we interpret or perceive those trapezoids as rectangles disposed in an oblique way in space.



Fig. 14. Felice Varini. Anamorphic Art Work in the School of Architecture of Nancy by Architect Livio Vacchini, 1993–1995
(Masiero 1999: 139)

Note: The contrary situation of seeing volumetric shapes on flat surfaces is seeing flat figures over three-dimensional configurations.

Conceptions

“<...> *cognition* is the process of thinking, knowing, or mentally processing information” (Kopec 2006: 50).

Dak Kopec

We create a mental idea or conception of architectural compositions based on our perception. Our conception joins the different elements and spaces of a building that are not necessarily visible at the same time. Nevertheless, they are physically and mentally coexistent. This way we conceive buildings as wholes composed of parts under certain relations (Fig. 15).

What kind of architectural shapes are catalysers for our thinking processes?

Conceiving buildings is not only based on the memorization of their different elements or spaces, but also on other processes related to the way we understand architectural compositions. The difference between seeing and thinking architectural shapes, is that the first can be an automatic inference through which we interpret depth and the shape of the objects, while the second, is the understanding of the processes, principles or laws that created the parts and relations of a composition. Although for most of the observers it is sufficient *to see* buildings, for architects a more analytic

experience is of primal importance. Architects should go deeper of what we have considered in the previous sections; sensing and perceiving the environment.

To conceive a generative process is to mentally reconstruct this process on base of the shape we see. As happens with the physical construction of an object, we build things in our mind following an ordered sequence of steps. Most of buildings have simple ordering principles that are easily understandable: intersections, subtractions, extrusions, repetitions, rotations, etc. There is multitude of different mental ideas that architecture can generate in our minds: the symmetric repetition of elements on the plane, tilings, polyhedra, geometric progressions, etc. (Figs. 16, 17).

Doing abstraction of our world is to set aside any subtlety with which we experience it: lighting, tiny textures, irregularities, etc. The ordered structures described do not take into account those characteristics, neither perspective, scale nor object material, because they are abstractions or thinking schemes and as such they focus on certain qualities as the geometric ones.



Fig. 15. Broissin Architects. *Shelter No. 2*, 2008 (Shaoquiang 2010: 88)
Note: A representation of the mental idea we can have of the distinct spaces of a house.



Fig. 16. Shin Takamatsu. *Origin III*. Kamigyo, Japan, 1985–1986 (Futagawa 1990: 69)
Note: In the *Origin III* building, the red dome was created by subtracting parts to a sphere, the stairs have a concentric disposition, and several elements are under horizontal reflection symmetry. This way of creating compositions based on the juxtaposition of simple modified components has been the most popular in architecture.



Fig. 17. Carlos Ferrater. Lluçmajor Metro Station, Barcelona
Note: A linear element is repeated through an axis, while at the same time it is gradually rotated. This is the mental idea that this structure causes in us.

Certain architectural compositions need a closer and exhaustive analysis for being understood, one that takes into account their combinatorial, topological or geometric restrictions and qualities (Fig. 18). Complexity as an experience arises when we have difficulty for understanding a configuration. In this kind of experience, the will of the observer for exploring and knowing more, is as necessary as the multiplicity of information of the configuration itself, as happens with Islamic patterns. The new tools for creating architectural compositions are also generating new kinds of ordered and aleatory patterns; the most of the times they are difficult to understand (Fig. 19).

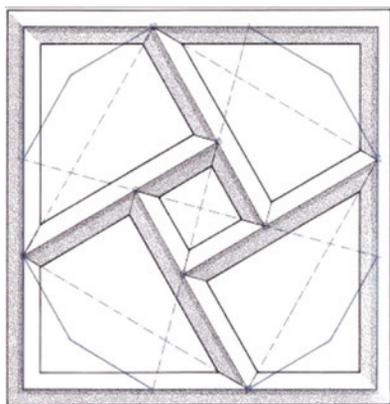


Fig. 18. Design method for creating an Islamic window with spinning motif (Critchlow 1999: 72)

Note: The little slanted square of this window produces four symmetrical trapezoidal spaces, but that only happens when that square has been drawn on the diagonals of a dodecagon. As we can note, for understanding a shape we require a voluntary and non-immediate analysis of the parts and their relations.



Fig. 19. Zaha Hadid. Expo 2008, Zaragoza, Spain

Note: Beyond our immediate perception of the figures of the Bridge Pavilion, is the comprehension of the gradual variations in the angles of the triangles. We can only say that this composition is complex when we try to understand its inherent laws.

Interactions

“When an environment cannot be physically changed or rearranged, everyone loses opportunities for growth and creative problem solving” (Stine 1997: 37).

Sharon Stine

In the first three sections we focused on certain sensorial and mental processes that accompany our experience of buildings, but before continuing with other mental processes, we will make a parenthesis for talking about our bodily contact with architecture.

We experience the effects of our actions over the environment, then we perform another action and we receive new information of the change we have caused. This is a way of exploration of the world through our bodies. The main characteristics of any interactive environment are: on the one hand, to offer possibilities of control to the users, and on the other hand, to offer feedback to their acts (Jacobson 2000).

What are the different actions that buildings allow us to perform?

The transformation of the physical configuration of the environment involves a change in our body positions. Both objects and our bodies compose an interacting system. Therefore, by interaction we understand not only the transformation of our surroundings, but also our own transformation. We can analyse the articulations, stiffness, flexibility or elasticity of the objects, or analyse those possibilities of transformation of the human body (Fig. 20).

Kinaesthesia, the sense that allows us to feel the movements of our own bodies, is a notable component of our experience of buildings. Building configurations restrain our movements; they always have the same habitual shapes and measures. Any change in those common configurations of buildings, e.g. the size or shape of the stairs, would possibly carry an unwanted increase in the difficulty of the activity (e.g. scaling). Nevertheless, it is in these cases when we are more aware of our corporal experience of the environment (Figs. 21, 22).



Fig. 20. Aldo van Eyck. Game zone in Jan van Galenbadpark. Amsterdam, 1957 (Lefavre, Roode 1976: 94)

Note: The cycle of actions-transformations between a girl and a rolling drum.



Fig. 21. Batlle i Roig Arquitectes. Sabadell, Spain, 1992 (Holden, Hudson 1996: 70)

Note: Architectural environments are diverse in visual aspects, but unfortunately, they are not that diverse in inciting kinaesthetic experiences; Catalonia Park is an exception.



Fig. 22. nARCHITECTS. The sensor activated *Party Wall*. Artists Space, New York, 2005 (Kyöng-wön *et al.* 2006: 137)

Note: We only notice the very specific manner environments condition our acts, when we find a place or object that requires an unusual way of being explored or manipulated, and our habits are attacked.

The different kinds of interactions we may effectuate vary in their intentions and in the transcendence or utility of the transformation caused in the environment. Contrary to closed ended functional activities (cooking, opening or closing a door, etc.), leisure or open activities give us an opportunity for exploring and playing with the environment. This kind of activity does not only consider the achievement of a

goal; it is the process of exploring what matters. New kinaesthetic experiences can be created if we design architecture with *game zones* in mind (Figs. 23–25).



Fig. 23. MA0. *Sitting Around for a Square*. Bari, 2001
(Lacovoni 2004: 41)

Note: We perform a functional activity when we move these banks, whether for sitting under the shadow or to get close to another person. Objects like these allow that a functional activity be also an activity of interest in itself, and therefore a leisure one.



Fig. 24. Rehwaldt Landschaftsarchitekten. *Playing Hill*. Burghausen, Germany
(Broto 2006: 8)

Note: In game zone structures we are involved in open ended activities, where the extra physical effort is not important, only the process of leisure.



Fig. 25. Norman Foster. Berlin. 1999
Note: We could consider the Reichstag dome as useless, because the ramp is not taking us to a specific goal. Nevertheless, leisure is an important function of buildings.

Meaning associations

“Why if one can live in different ages and cultures should restrict to the present and local?” (Jencks 1981: 127).

Charles A. Jencks

According to Ernst Hans Gombrich (1980), *the sense of order* relates to the spatial configuration of objects (involving our perception and conception), and *the sense of meaning*, to the information we find in the objects that help us to survive. So far we have talked about architectural experiences in an “abstract way”, that is to say, we have not mentioned the kinds of experiences we have of buildings and objects when we keep in mind what they are, how they work, or what they exist for. Continuing with the process of our acquisition of information from the environment, we will treat these other hypothesis that we make about the nature of what is presented to us in the environment.

How do we recognize and assign meaning to buildings?

Association happens when a thing brings us to mind another thing. The assignation of categories or classes to objects is one kind of association called recognition. The most basic or spontaneous way of giving a category to an object, is that one based on its shape, its parts and relations. We recognize faces, houses or trees (as in the

sculptural or pictorial representations in buildings) but also, in certain socio-cultural contexts, we recognize castles, palaces, churches and other architectural typologies that in turn are associated to certain functions (Figs. 26–28).



Fig. 26. Renzo Piano.
NEMO Science Museum.
Amsterdam, 1997

Note: Due to our avidity to recognize, we can vaguely find the shapes of known elements in certain buildings (in this case a ship bow). We recognized something in spite of the fact that the assigned meaning is not “correct”.



Fig. 27. Robert Venturi.
North Penn Visiting
Nurses Headquarters,
1960 (Venturi 1972: 87)

Note: The association of an arch with an entry is so strong that it continues being a useful medium for communicating that function.



Fig. 28. Imre Makovecz.
Stephaneum. Péter Pázmány
University, Piliscsaba, Hungary,
1995–2001 (Gössel 2007: 626)

Note: Besides recognition, inference is another way by which we project meanings to objects. The characteristic effects of certain events function as indexes that allow us to imagine stories about what is happening or had happened to a building.

The meanings that buildings are able to bring to our minds are multiple. Architecture more than any other human creation is always associated to a certain cultural context, life style, social class, ideology of its inhabitants, etc. In our experience of a building, we are constantly associating and creating long chains that connect the building with other works, times or places. That is a human characteristic that architects can take advantage of; by using buildings as communication tools (Figs. 29–31).

The texts about the experience of architecture emphasize the sensorial and interactive part of our encounter with buildings, while most of the times they forget about the meanings and thoughts that buildings induce us, as if they were not part of our experience.

In every place of the world and through the different ages, some experiential factors (the perceptual, sensorial, associative, etc.) have been stressed, while others have been disguised. The human predisposition for giving meanings or to categorize any object makes those imposed characteristics an inescapable part of our experience of architecture, one that can not be suppressed even when certain architects have tried to do so.



Fig. 29. Allan Greenberg.
Brent Publications Offices.
New York, 1985

(Papadakis, Watson 1990: 93)

Note: The elegance of the classic causes its continuous use in prestigious places; and in turn, that continuous use preserves the association of classic architectural elements with elegance. This is a very rooted occidental experiential habit.

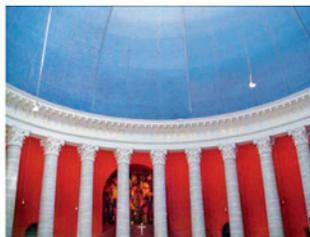


Fig. 30. Georg Moller.
Ludwigskirche. Darmstadt,
1822–1827

Note: In this church, the association of light blue colour with Heaven, and orange-red with hell or earthly life, is used to position the believers in the latter.



Fig. 31. Demetrio Ribes
Marco. Valencia Train Station,
1906–1917

Note: The oranges that decorate the *Valencia train station* create a metonymic connection with something typical of its geographical context.

Postmodern architects have tried to rescue the meaning content of architecture; they played with the rules of certain *associative games* by modifying the correct context, composition, size, or materials of the elements that normally compose a recognizable whole. The change of any of those characteristics produces new meanings and probably contradictory or complex ones (Figs. 32, 33).



Fig. 32. Charles A. Jencks. Thematic House.
London, 1982–1985 (Jencks 1985: 200)

Note: These knobs give us the impression that the door could be opened in both directions, a fact that in normal situations is not possible.

Therefore the door is ambiguous and paradoxical.



Fig. 33. Hans Hollein. *Strada Novissima*. Venice
Biennale, 1980 (Nakamura 1985)

Note: Postmodern architects design playing with recognizable objects creating new kinds of associations or connections between meaningful objects. In this facade there is a column with the shape of a building (The Chicago Tribune by Loos), that in turn has the shape of a column.

The buildings used as examples of this section may translate us through time and distinct places of the world, they allow us to see the quotidian in a different way, they create new connections between forms and meanings, and awake several interpretations.

Emotions

“<...> the artist is an *engineer in emotions*” (Moles, Rohmer 1972: 126).

Abraham Moles

Emotions can be considered the most difficult and complicated experiential outputs of our designs. Architects should be aware of multiple conditions for emotions to take place; after all, an emotion that a building makes us experience depends on what we find in it. So far we have talked about the methods we use for creating experiences; now we will explain how by designing certain sensations, perceptions or meanings, we can induce emotional experiences in the users of architecture.

Besides aesthetic pleasure, what are the emotions more related to our experience of buildings?

Pleasure has been considered the final end of the arts. Nevertheless, new architectural experiences can be unpleasurable and valuable anyway, like those causing uncomfortableness, tension and controlled danger (Fig. 34). The sensorial way of producing emotions has to do with overstimulation (high noise level, intense lights or multiple stimuli at the same time), or with sensorial deprivation. The first experience is annoying, while the second is relaxing at the beginning, but after several hours it is exacerbating as well (Fig. 35).



Fig. 34. Philippe Rahm, Jean-Gilles Décosterd. *Hormonorium*. Switzerland Pavilion at Venice Biennale, 2003 (Krauel 2010: 180)

Note: The production of emotions through stimulation: *Hormonorium* provides similar conditions to the ones we find at high altitude. The oxygen amount is limited by introducing nitrogen into the air. We suffer of disorientation and euphoria due to the lack of the adequate amount of oxygen.



Fig. 35. James Turrell. *Soft Cell*. Düsseldorf, Germany, 1992 (Schulz-Dornburg 2000: 74)
Note: *Soft Cell* is an installation that introduces us to a total darkness: depriving us of sight and exterior sound.



Fig. 36. Antón García-Abril & Ensemble Studio. Santiago de Compostela, Spain, 2005–2007 (Jodidio 2009: 193)
Note: In the SGAE Central Office, it is the apparent fragile equilibrium and our prediction of the falling of the rocks what causes us tension.

It is also possible to induce tension in the observers through the perceptual and associative qualities of buildings. Strange, ambiguous, incomplete or complex places or images are tried to be solved or understood by our mind, and when we are not able to do so, we feel frustrated and tense. That is also what happens when we feel the need to correct or reconfigure the elements in a composition, in order to get a more “correct” or ordered disposition (Fig. 36).

Due to the expected function of buildings as protection givers, when our experience of the environment involves uncertainty and danger, we feel the adrenaline and a change in our cardiac rhythm. This is the strongest kind of emotion produced by the built environment, one related to labyrinths, tightropes and roller coasters. They are proofs of our disposition to have frustrating and frightening experiences under certain circumstances (Figs. 37–39).



Fig. 37. Sou Fujimoto.
House H. Tokyo,
Japan, 2010–2011
(Jodidio 2010: 181)
Note: The best way
of creating emotive
experiences in
architecture is by
introducing the users
in apparently risky
situations.



Fig. 38. Corinna Menn.
CONN Viewing Platform.
Switzerland, 2005–2006
(Jodidio 2009: 349)
Note: In this case,
architecture allows us
to access to the natural
environment in an
extraordinary way. The
natural and the artificial
are responsible of this
sublime experience.



Fig. 39. Bernarda Silov, Davor Silov.
Atmosfera. Zagreb, Croatia
(Fischer 2007: 998)
Note: Projects like this Dive Club
show the insistence of certain
architects to create emotive
environments. The fact that several of
these projects are unrealized indicates
the difficulty to create the physical
means for achieving those emotions.

Despite that the emotions we normally experience in architecture are not as strong as in the last examples, not any experience is free of an emotional part. We can not forget about the more common and pleasurable experiences of finding something beautiful, or the emotions transferred to us through empathy.

In other respects, buildings with “sense of humour” can cause us pleasure even when they are not beautiful. This kind of objects can be considered dissonant or non-sense because they are contrary to our expectations (Figs. 40, 41).



Fig. 40. Traditional constructive techniques of the Pyrenees combined with a more modern wrist watch.
Benasque, Spain

Note: Form follows fun; humour as an outcome of architecture always depends on a creative use of significant objects.



Fig. 41. Entrance of the Bockenheimer Warte tube station in Frankfurt

Note: The implausibility of this event is what makes us smile.

Possibly all original or creative things we can design have a certain degree of dissonance; as Jencks remarked: wit is the “unlikely copulation of ideas together” (Jencks 1981). We should highlight that the creation of any kind of novel architectural environment is not irrelevant, because as Mihaly Csikszentmihalyi (1998) indicates, unusual and beautiful environments have the power to help people to find new points of view or connections between ideas. In other words, creative environments awake our creative thinking.

Conclusions: the search for new architectural experiences

“<...> art is not an object but experience” (*Oral History Interview... 1968*).

Josef Albers

The different factors mentioned until now are all part of any architectural experience; we perceive the spatial qualities of buildings, we understand their configurations, we recognize their shapes, we transform ourselves and the environment, etc. It is in that multiplicity of ingredients where the magic of experiencing architecture lies; we can focus every moment in a different quality or experiential factor.

We have made a trip across the different characteristics and aptitudes that human beings have for experiencing the world, and the way these are reflected in their works of architecture. The main conclusion of this research is that the role of the architect

is to know how to dispose or manipulate several media or “realities” in a way that allows the users to have certain experiences in those designed environments. We can consider, following the concept of art of Abraham Moles (Moles, Rohmer 1972), that a building is a series of emotions, thoughts, impressions and acts experienced by people and planned by an architect.

There are buildings of all ages that have been of importance due to the great planning of experiences done by its architects: churches that affect us emotionally and are able to awake devotion in the believers; castles and palaces that show the power of its proprietaries; intricate structures and patterns with difficult to understand configurations, etc. We have talked in every chapter about a different “game” of creating experiences. We should know the rules, causes and effects of those games if we want the users to experience what we have planned.

Our way of creating architectural designs has always been a hybrid between artistic intuition and scientific knowledge. By taking into account physiology, psychology, semiotics and the new technologies, we will be able to design new kinds of experiences through architecture. Not all the experiences described by the mentioned disciplines have been applied in architectural design (some of them have been used only in artistic environments); therefore, the idea is to incite architects to investigate those unexplored fields.

We can develop further our creative abilities by making research in those scientific areas, than by reading about aesthetics. Creativity is sometimes obstructed by aesthetic theorists, because by exposing their prejudices they make people believe that there is a universal law for creating interesting compositions. This has been especially true in architectural theory.

The presentation of the six kinds of experiences: from sensations to emotions in an interconnected way allow us to have a wide panoramic of our different encounters with architecture. This way we favour the rupture with any barrier or prejudice in architectural design, because we clearly note that the appearance we decide to give to a building and the experiences that we offer to the users are just a few alternatives between many others. Consequently, this research has pretended to open our minds and to promote creativity in the readers.

References

- ARM: Ashton Raggatt McDougall. 2010. [online], [cited 9 September 2011]. Available from Internet: <http://www.a-r-m.com.au/>
- Arnheim, R. 1977. *The Dynamics of Architectural Form*. Berkeley, Los Angeles: University of California Press.
- Barrett, C. 1970. *Op Art*. London: Studio Vista.
- Bjone, Ch. 2009. *Art and Architecture: Strategies in Collaboration*. Basel, Boston: Birkhäuser Verlag. <http://dx.doi.org/10.1007/978-3-0346-0377-5>
- Broto, C. (Ed.). 2006. *Nuevo Diseño en Espacios de Juego*. Barcelona: Links Books.
- Brownlee, D. B.; Long de, D. G. 1991. *Louis I. Kahn: In the Realm of Architecture*. Los Angeles: Museum of Contemporary Art; New York: Rizzoli.

- Casamonti, M. 2007. *Kengo Kuma*. Milan: Motta Architettura.
- Critchlow, K. 1999. *Islamic Patterns: An Analytical and Cosmological Approach*. Rochester, Vermont: Inner Traditions.
- Csikszentmihalyi, M. 1998. *Creatividad: El Fluir y la Psicología del Descubrimiento y la Invención*. Barcelona: Paidós.
- Eastern Design Office. 2011. [online], [cited 27 December 2011]. Available from Internet: http://www.eastern.e-arc.jp/p15_A_house_awaiting_deathE.html
- Fischer, J. 2007. *1000 x European Architecture*. Berlin: Verlagshaus Braun.
- Futagawa, Y. (Ed.). 1990. *GA ARCHITECT 9: Shin Takamatsu*. Tokyo: GA International ADA Edita.
- Gombrich, E. H. 1980. *El Sentido del Orden: Estudio Sobre la Psicología de las Artes Decorativas*. Barcelona: Gustavo Gili.
- Gössel, P. (Ed.). 2007. *The A-Z of Modern Architecture*. Cologne: Taschen.
- Hesselgren, S. 1980. *El Hombre y su Percepción del Ambiente Urbano: Una Teoría Arquitectónica*. Mexico, D. F.: Limusa.
- Holden, R.; Hudson, J. 1996. *International Landscape Design*. London: Laurence King Publishing.
- Jacobson, R. (Ed.). 2000. *Information Design*. Cambridge MA, Massachusetts: MIT Press.
- Jencks, Ch. A. 1981. *El Lenguaje de la Arquitectura Posmoderna*. Barcelona: Gustavo Gili.
- Jencks, Ch. A. 1985. *Towards a Symbolic Architecture: The Thematic House*. London: Academy Editions.
- Jodidio, P. (Ed.). 2009. *Architecture Now! 6*. Cologne: Taschen.
- Jodidio, P. (Ed.). 2010. *Architecture Now! 7*. Cologne: Taschen.
- Kepes, G. (Ed.). 1966. *Sign, Image, Symbol*. London: Studio Vista.
- Kopec, D. 2006. *Environmental Psychology for Design*. New York: Fairchild Publications, Inc.
- Krauel, J. 2010. *Arquitectura Efímera Innovación y Creatividad*. Barcelona: Links Books.
- Kyöng-wön, S.; Yun-gyöng, K.; Min-jöng, K. (Eds.). 2006. *Activity Diagrams*. Seoul: Damdi.
- Lacovoni, A. 2004. *Game Zone: Playgrounds between Virtual Scenarios and Reality*. Basel: Birkhauser.
- Lefavre, L.; Roode de, I. (Eds.). 1976. *Aldo van Eyck: The Playgrounds and the City*. Amsterdam: Stedelijk Museum; Rotterdam: NAI Publishers.
- Maréchaux, M.; Maréchaux, P. 1997. *Impressions of Yemen*. Paris: Flammarion.
- Masiero, R. 1999. *Livio Vacchini: Works and Projects*. Barcelona: Gustavo Gili.
- McGinness, R. 2011. *Video sobre l'exposició "Color Oblicuo", de Ryan McGinness, a l'espai cultural Caja Madrid de Barcelona*. R. Espai Cultural Caja Madrid de Barcelona 2011–01–26 – 2011–03–27.
- Moles, A.; Rohmer, E. 1972. *Psicología del Espacio*. Madrid: Ricardo Aguilera.
- Nakamura, T. (Ed.). 1985. *Hans Hollein: Metaphores et Metamorphoses*. Tokyo: A + U Publishing Co, Ltd.

- Norberg-Schulz, Ch. 1965. *Intentions in Architecture*. Cambridge: MIT Press.
- Oral History Interview with Josef Albers June 22–July 5, 1968. *Archives of American Art*, Smithsonian Institution [online], [cited 13 September 2011]. Available from Internet: <http://www.aaa.si.edu/collections/interviews/oral-history-interview-josef-albers-11847>
- Pallasmaa, J. 1996. *The Eyes of the Skin: Architecture and the Senses*. London: Academy.
- Papadakis, A. C.; Watson, H. (Eds.). 1990. *New Classicism: Omnibus Volume*. London: Academy Editions.
- Ruskin, J. 2001. *The Seven Lamps of Architecture*. London: The Electric Book Company.
- Schulz-Donburg, J. 2000. *Arte y Arquitectura: Nuevas Afinidades*. Barcelona: Gustavo Gili.
- Shaoquiang, W. (Ed.). 2010. *Conceptual Architecture*. Berkeley, CA: Gingko Press.
- Solso, R. L. 1994. *Cognition and the Visual Arts*. Cambridge, Massachusetts: MIT Press / Bradford Books.
- Stine, Sh. 1997. *Landscapes for Learning: Creating Outdoor Environments for Children and Youth*. New York: John Wiley & Sons.
- Venturi, R. 1972. *Complejidad y Contradicción en la Arquitectura*. Barcelona: Gustavo Gili.

ARCHITEKTŪRA: PATIRTIES PROJEKTAVIMAS

Luis Alfonso de la Fuente Suárez

Santrauka

Šio tyrimo tikslas – iš daugiadalykės perspektyvos pažvelgti į statinių patirtį, aptariant, ką bendra turi visos žmogiškosios būtybės: jutimo organus, kūną ir smegenis, kurių funkcija yra sąlygiškai panašiai reaguoti į statinius. Nagrinėsime architektūros darbuose išskylančius skirtingus procesus. Šis straipsnis padalytas į tarpusavyje sąveikaujančias dalis, apibūdinančias visą žmogiškąjį pažinimą: nuo ankstyvųjų informacijos įgijimo iš aplinkos procesų iki pačių sudėtingiausių su architektūra susijusių minčių ir jausmų. Žvelgdami iš fiziologijos, suvokimo psichologijos ir semiotikos perspektyvų, bandysime nustatyti, kaip žmogaus konstitucija lemia mūsų su daiktais susijusį patyrimą. Sieksime įrodyti, kad architektūroje žinojimas yra kūrybingas procesas: projektavimas priklauso nuo mūsų požiūrio į statinius.

Reikšminiai žodžiai: architektūra, pažinimas, sąveika, reikšmė, suvokimas.

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