Touching the Surface

Application of “Nahsicht” theory of Alois Riegls in Architecture Composition

近距离式的
视觉触觉性
建筑表皮
建筑现象学
nahsicht
visual Tactility
surface
architectural phenomenon

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Citation: Zhong, Y. (2025). “Touching the Surface", UOU scientific journal #09, 66-75.

ISSN: 2697-1518. https://doi.org/10.14198/UOU.2025.9.07

Article Received: 15/01/2025
Received in revised form: 22/02/2025
Accepted: 26/04/2025

这项研究起始于对现代建筑视觉主导性的质疑，借鉴了阿洛伊斯·李格尔（Alois Riegl）在《晚期罗马艺术工业》一书中提出的“近距离式的”（Nahsicht）概念，探讨了视觉-触觉与建筑设计参数之间可能的关系。通过考察从古埃及至古罗马时期乃至现代艺术表达中的触觉性演变，本文归纳出视觉-触觉的若干基本特征及其表现形式，并将其与建筑设计中的三个关键要素相关联：表面材质、表面尺度与表面扰动。这些因素均通过真实经验加以审视。最终，本文在对视觉-触觉研究的反思中指出，当前建筑研究中过于理性与理论化的设计方法，以及以视觉媒体为主导的知识范式存在局限性，强调了对建筑表面进行敏感的、具身化感知的必要性。

This research starts from questioning the visual dominance of modern architecture, referring to Alois Riegl’s (Late Rome Art Industry) notion of discussing aesthetics of proximity (Nahsicht), and discussing the possible relationship between visual-tactility and design parameters in architecture. By learning from tactility evolution in the visual art of antiquity from ancient Egypt to Roman times and modern expression, this research identifies some basic characteristics and appearance of visual-tactility, along with related design parameters, as stemming from three key aspects: surface materiality, surface scale, and surface disturbance, all examined through authentic experience. And in the final reflections on this visual-tactility research, the limitation of rational and theoretical design methodology, as well as visual-media dominant knowledge, in architectural study and the necessity of a sensitive embodied perception of architectural surfaces is discussed at the end of the paper.

As a consequence of the current deluge of images, architecture of our time often appears as mere retinal art of the eye, thus completing an epistemological cycle that began in Greek thought and architecture. But the change goes beyond mere visual dominance; instead of being a situational bodily encounter, architecture has become an art of the printed image fixed by the hurried eye of the camera. In our culture of pictures, the gaze itself flattens into a picture and loses its plasticity. Instead of experiencing our being in the world, we behold it from outside as spectators of images projected on the surface of the retina (Pallasmaa J. 2012, 30).

The paper explores the principles of visual-tactile experience using the concept of "Nahsicht" (proximity touch) proposed by Alois Riegl (1985) in his work "Late Rome Art Industry." It examines its existence in the language of modern architectural design and compares and supplements it with the original idea of Nahsicht. From both philosophical and phenomenological perspectives, the research focuses on perception via touch and sight. Imaginative drawing techniques are employed to convey anticipated atmospheres, using elements such as materiality, scale, and light to evoke sensory responses. Inspired by visual strategies in comics, these representations consider the viewer's perspective and proximity to surface. A comparative analysis of case studies with strong visual-tactile qualities is used to extract spatial motifs and recurring tactile effects, allowing for a deeper understanding of embodied experience in architecture beyond surface aesthetics, hoping to use this reflection as a starting point to explore design methodologies based on tactile effects in architecture.

INTRODUCTION AND BACKGROUND

Concept of proximity tactility (Nahsicht)

In the book "Late Roman Art Industry" (1901), Riegl discusses this aesthetics of proximity (Nahsicht) prompted by some natural and man-made constructions that allegedly have the ability to trigger an amplification of human perception. It revealed the trend of architectural development from tactile surfaces to three-dimensional, depth of space. The eye perceives only planes; indeed, it is through foreshortened silhouettes and through shadows that we know about alterations in depths. The dimension of depth, however, does not seem so necessary, and even more so, since it may obscure the clear impression of material individuality (Riegl 1985, 22). In Riegl's view, the plane is no longer tactile because it contains interruptions achieved through deep shadows; it is, on the contrary, optical - colorful whereby the objects appear in Fernsicht (Far-sight) to us and whereby they also blur into their environment. In this specific model of spatial construction, tactile surfaces, as the representation of material individual objects, can be perceived only on the basis of sensuous perception. Space is just a notion in human mind, and the awareness of which appeals to our subjective reflection. Hence, of the three dimensions, height, and width (outline, silhouette) as dimensions of the plane or level ground are indispensable in order to arrive at any notion of the individual material object. The dimension of depth, however, does not seem so necessary, and is suppressed, when possible. (Riegl 1985, 24)

The ancient, civilized nations intended the visual arts to be responsible for the representation of objects as individual material phenomena not in space (here after meaning always deep space). Through the development of the visual arts of antiquity, one can see the struggle and contradiction between pursuing the perception of the material individuality of objects and the gradual penetration of it by subjective idea. And Rigel divided it into three periods, Nahsicht (near-sight), Nomalsicht (normal-sight) and Fernsicht (Far-sight), and the tactility of surface weakened with the dominant of optical effect. One typical example of Nahsicht is the Egyptian Temple. There is a completely enclosed hall with solid ceilings (Fig.1 and 2). The halls are consequently filled with columns supporting the ceiling at such short intervals that all those plans which could have had a spatial effect are now cut up.

Despite the considerable physical expansion, the impression of space was thus suppressed to the point of elimination and in its place a forced impression of individual shapes (the columns) was perceived by the eye. Windows and doors are hidden and decreased to avoid disturbing the enclosed tactile shape. To some degree, space here is limited rather than created in it.

Fig.1 – Temple of Amun-R, the hall is cut off by huge solid columns with hidden windows. © Drawing by author.

Fig.2 – Hypostyle Hall, Karnak, tactile phenomena caused by strong individual materiality of columns. © Photographed by author.

Fig.3 – Minerva Medical, openings on the wall break the continuity of tactility on the enclosed surface. © Drawing by author.

Fig.4 – Wall of Karnak Temple, complete pattern stands out from the background. © 'Late Roman Art Industry' by Alois Riegl.

Fig.5 – Corinthian capital in Salona, discontinuous curves lead to the loss in materiality. © 'Late Roman Art Industry by Alois Riegl.

In late Romane times, new architectural elements in monumental architecture like the arch and the vault were created. Relevant elements in ancient Egyptian and antiquity architecture were the straight architrave and the flat ceiling. The arch is placed immediately on the column and on top of this the wall: this again was a plane, as the ancient Egyptian wall was, but no longer is an unperforated tactile, rather an optical, plane interspaced with windows casting deep shadows.

For example, in Minerva Medical (Fig.3), the abandonment of windowless architecture resulted in a disruption of the impression of an enclosed space, which could never be reversed, which leads to a contradictory result: on the one hand, decorations and paintings created a coloristic animation of the wall, on the other hand, the holes lure in the view from the material enclosure to infinite outside space (Riegl 1985, 27).

Apart from space, the decorations on the plane also affects the surface tactility of surface. Comparing patterns on the wall of Karnak Temple (Fig.4) and the marble capital from a column in Salona (Fig.5), one notioces that.

On the Corinthian capital, the individual parts (rips) of the leaf are not connected with one another in a tactile-optical manner (with the means of undulating projections of half-shadows) but they are separated from one another and isolated in a purely optical manner through incisions which cast deep shadows.

There is a definite trend towards denaturalization, which should not surprise us in art, with its explicit tendency toward isolation of all individual shapes (elimination of all causality from the sensory appearance) conclude two principle that replace earlier tactile and clear between pattern and ground: isolation of the entity of appearance by as massive as possible and inarticulate outlines and isolation of all parts, whether pattern or ground. (Riegl 1985, 45)

Tactility (Nahsicht) in modern discourse

This concept of "Nahsicht", as Riegl demonstrated, is most clearly expressed in the architecture of antiquity. But with the development of modern architecture, the visuality of architecture has been prominently developed and emphasized, and people are increasingly accustomed to perceiving and judging architecture through an optical point of view, even to the point of the rise of semiotic and typological methodologies. Until recently, architecture was considered a visual art form, to be perceived and judged by sight. Best expressed by Le Corbusier (1923), "Architecture is the masterly, correct and magnificent play of masses brought together in light." This development was very far-reaching for visual dominance as it stimulated working in a new virtual visual world (Harsens 2004); moreover, at that time, the arts favored painting. Western culture is dominated by ocular centrism, the hegemony of the eye. The appearance of museums and zoos further elevated sight to the position of the pre-eminent sense (Bowring 2007). This visual dominance lives on to the twentieth century and peaks during Modernism (Frampton 2001).

While it was not until, Pallasmaa, The Eyes of the Skin offers significant theoretical support for the study of architectural tactility. He argues that modern architecture has become overly visual, neglecting the full range of human senses, particularly touch. For Pallasmaa, authentic architectural experience is multisensory spaces should be felt, not just seen. He emphasizes the haptic qualities of materials, surfaces, and spatial atmospheres, claiming that "the skin reads texture, weight, density and temperature" (Pallasmaa, 2005, 56). This aligns closely with a phenomenological approach to tactility, where the body's engagement with space—through touch, proximity, and material presence—becomes central to architectural meaning and memory.

Because of industrial and consumeristic cultural dominance, vision has the tendency to let us just be an outsider a bystanders, and omnidirectional accepting different types of perception: hearing, touch, smell, and taste make us participants. Alva Noë (2002) has proposed a question “Is the Visual World a Grand Illusion?” The question is what inspired the initial concern about visual tactility. With the development of self-media and visual-reality techniques, people can visit various landscapes, places and exhibitions at home without experiencing them first hand in situ. In such an era of visual dominance, how infinitely magnified visual ability interact with other perceptual sensations? Or perhaps coexist in a new perceptual composition mode?

OBJECTIVITY AND METHOD

After a detailed literature review of the concept of proximity tactility (Nahsicht), the existence of 'visual tactility' in architectural language needs re-examination, comparison, and refinement, which could be achieved through a classification analysis of representative contemporary cases. The aim is to systematically structure a methodology of visual tactility within the framework of contemporary social discourse. This approach draws on phenomenological understanding, expressed through descriptive and diagrammatic representation, and expands the potential for neurodiverse, interactive design.

Representation of Tactile Sensation

Just as vision is the psychological science of the optic input, haptic is the science of what is tangible (John M.& Juricevic, 2003). ‘Imagine your environment without ever having felt the texture of wood, the temperature of steel, the sharpness of a corner, the verticality of a wall, or without ever having moved on a ramp.’ The Critics of Pallasmaa mark out the fact that different elements in space collaborate to create the feeling of it. The mental experience of the city is more a haptic constellation than a sequence of visual images; impressions of sight are embedded in the continuum of the more unconscious haptic experience. Even as the eye touches and the gaze strokes distant outlines and contours, our vision feels the hardness, texture, weight and temperature of surfaces. Without the collaboration of touch, the eye would be unable to decipher space and depth, and we could not mold the mosaic of sensory impressions into a coherent continuum. The sense of continuity unites isolated sensory fragments in the temporal continuity of the sense of the Self. (Pallasmaa 2012)

This process from sensation to representation is a human way of perceiving and is similar to vision and haptics. However, in the perception process, the type of and way of gathering information differs between them. In haptic representation, form becomes a subject of interpretation, as it may not directly convey meaning. This is because, when both visual and haptic information are present, visual input tends to dominate and suppress haptic perception. Yet a slight difference exists between the form of movement and the purely haptic form. Movement and the successive-kinematic experience of space is still very difficult to observe visually, which is related to what Riegl called “Materiality”, as a representation of anti-space and it highlights individuality (Jasmien 2008).Tonghoon’s (1996) study of Peter Zumthor’s Thermal Bath, the composition of tactile space is first explored through two primary features: materiality and movement. The first, materiality, refers to the awareness evoked in the beholder through purely optical experiences. This includes the visual perception of folds arranged in rhythmic, schematic sequences, or deeply carved recessions that reveal shadows and spatial depth (Riegl 1985, 67–86). The second aspect, movement, represents a more dynamic form of tactility, based on shifts in position and focus that periodically engage and challenge the spectator.

In many other discussions on tactility in architecture, the notion of tactility has been closely associated with the intimacy of everyday experience. Particularly in the argument of Kenneth Frampton when touch has been paired with the notion of "nearness," whereas vision is paired with physical and emotional detachedness of the subject from the object. This opposition between the near and the distant is, however, nothing new. As early as the late 19th century, this opposition occupied a central place in aesthetic discourse. In particular, German aesthetic discourse at the turn of the 19th century provides us with various sets of different perceptual categories, such as the near view vs. the distant view, the tactile vs. the optical, and distraction vs. attention. (Tonghoon 1996)

Hence, this approach differs from much of the theory of architectural representation with certain fixed types of graphical projection. Instead, it's closely engaged with the awareness in perceptual processes of visual experience. Here, descriptive geometry and sketches are both part of the tool in representation to enable analytical comparison alongside image-based realities, which is particularly concerned with the formation of methodological aspects supporting visual-tactile and experiential modes in architectural design.

Phenomenological lens

In architecture, a work can initially be described through its objective characteristics—elements such as location, physical context, style, age, dimensions, proportions, and materiality. These characteristics include location, physical context, style, age, dimensions, proportions, and materiality (Jennifer A. E. Shields 2023). In the meantime, as occupants of a building, particularly one we inhabit regularly, our perception is greatly influenced by our interactions with and the use of the space.

'Architecture has always represented the prototype of a work of art the reception of which is consummated by a collectivity in a state of distraction... Buildings are appropriated in a twofold manner: by use and by perception – or rather, by touch and sight.'(Benjamin 1968, 339–340)

Imaginative drawings in architecture strive to convey an anticipated atmosphere or experience, examining characteristics such as form, space, materiality, scale, light, and use. This concept parallels the experience in comics, where the viewer's implicit perspective and proximity to objects can emphasize their relationship to the portrayed subjects (Fig.6). As Luis Alfonso notes, 'Looking at a scene from above it the viewer has a sense of detachment – an observer rather than a participant. However, when the reader views a scene from below it, then his position evokes a sense of smallness which stimulates a sensation of fear.'(Luis 2016)

Drawing on this imaginative way of representation, through the haptic representation of typical building, the general rules of architectural tactile effects can also be obtained through a sort of comparative phenomenological analysis of cases with visual-tactile characteristics, and subdivided to further elaboration and demonstration.

The following sections will provide some material to supersede this simplified view of design as surface manipulation and to broaden the critical potential of the notion of tactility related to architecture beyond the immediate experiential notions. The spatial motifs of tactility in relation to art and architecture at the turn of different eras will be discussed. This will hopefully reveal the relative poverty of the contemporary theory of tactile perceptual model in architecture.

DESIGN PARAMETERS

For the comparison, the formation of the haptic effect is examined and presented through three aspects: materiality, touchable scale, and unreadable space. These aspects relate both to the characteristics of independent spatial features

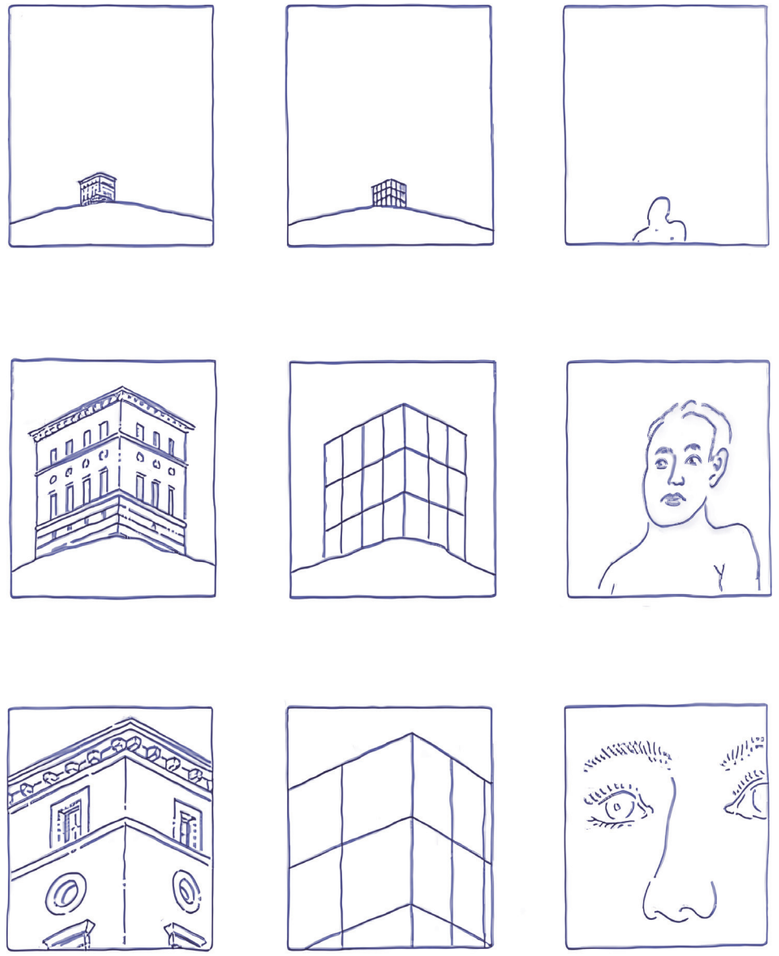


Fig.6 – Distance & Detail, León Krier. © University of Notre Dame, León Krierby Alois Riegl.

and to the combined effects of spatial sequences in movement. Each aspect will be illustrated by comparative examples and generalized conclusiongenerality conclusion, and all the cases will be re-evaluated to reconsider the interaction between different aspects. In this way, abstract spatial recognition is deconstructed, returning us to an initial, haptic understanding of space with reduced subjective interpretation. For that reason, a new combination of perceptions in the consciousness of the beholder is gained. (Riegl 1985, 23)

Materiality

The architectural ideal of materiality is best expressed though the tomb-type of the pyramid. Any of the four sides permits the beholder’s eye to observe an always unified plane of an isosceles triangle, the sharply rising sides of which by no means reveal the connecting space behind. In contrast to this well-planned definition of the external material within the dimension of the plane, achieved with great acuteness here, the actual functional responsibility (the formation of space) is entirely reduced. (Riegl 1985, 27)

The pyramid was perceived as a solid, impenetrable object, offering the observer a strong sense of tangible form and physical presence. For example, taking the work of Monumentoai Martiri delle Fosse Ardeatine and KAIT

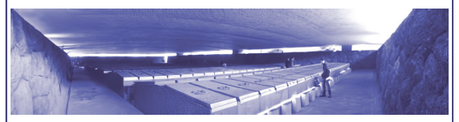
Name of Project	Boundary Condition	Images
Monumento ai Martiri delle Fosse Ardeatine		
KAIT Plaza		

Table 1 - Comparison between two different boundary condition: solid and light. © Drawing by author.

Plaza as comparison (Table 1), they are similar in scale and boundary outline. Both are flat, compressing underground space with curving cover. But the solid stone roof has a higher visual tactile level by creating a sense of pressure on observers and forcing them to focus on the boundary itself, no recognition of the structure and outside. On the contrary, the light floating metal roof with different openings provides too much information, and the identity of the surface itself fades away in the complex reading of a surplus of visual information.

On top of this, the material and the texture will also affect the perception of certain surfaces and the overall atmosphere. Texture appears to be the most important information to identify objects through touch (the haptic identification of everyday life objects). The composition of wooden columns, white brick, clay tiles, wooden floor and even the wool carpet in Villa Mairea remind us of the primitive memory of the feeling of home. 'Our sensations of comfort, protection and home are rooted in the primordial experience of countless generations. Bachelard calls these 'images that bring out the primitive in us' or 'primal images'.

The house we were born in has engraved within us the hierarchy of the various functions of inhabiting. We are the diagram of the functions of inhabiting that particular house, and all the other houses are but variations on a fundamental theme. The word habit is too worn a word to express this passionate liaison of our bodies, which we do not forget, with an unforgettable house'. (Pallasmaa 2012, 62) Pallasmaa writes of the strength of the bodily memory. And, these first impressions of texture often come into being unconsciously when we first encounter substances as infants.

This primary memory is usually evoked by materials with original natural characteristics, such as wood, rock, fur, etc., which in turn trigger a strong physical memory. This type of material has a stronger visual and tactile effect than industrially produced modern materials. Comparing the two types of concrete (Fig.7-10) used by Siza in Leça de Palmeira, the original one has a closer visual tactile effect on a natural reef by mixing a large amount of sand and gravel into the cement to imitate the color and materiality of the real reef, thus enhancing the sense of integration between the material and the context through this continuity in tactility.

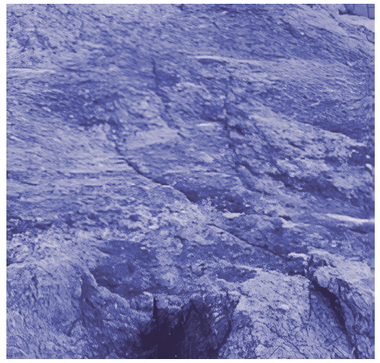


Fig.7 - Common Concrete.

Fig.8 - Concrete with stones.

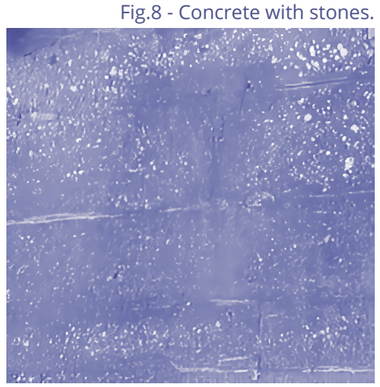


Fig.9 - Stones by shore.

Touchable Scale

Riegl defines the Nahsicht as: the plane which the eye perceives when it comes so close to the surface of an object, that all the silhouettes and, in particular, all the shadows which otherwise could disclose an alteration in depth, disappear. The perception of objects is thus tactile, and in as much as it has to be optical to a certain degree, it is

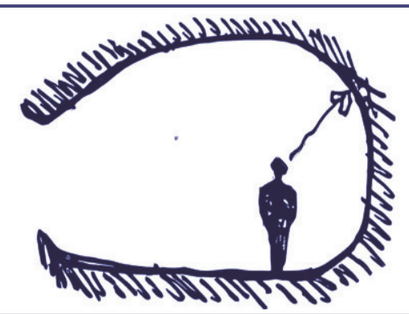
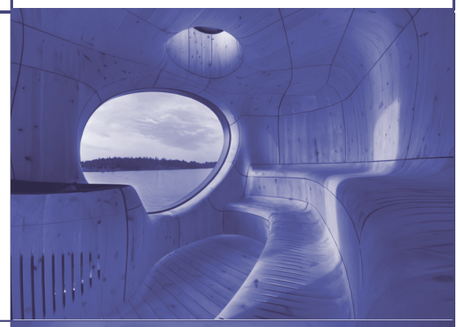
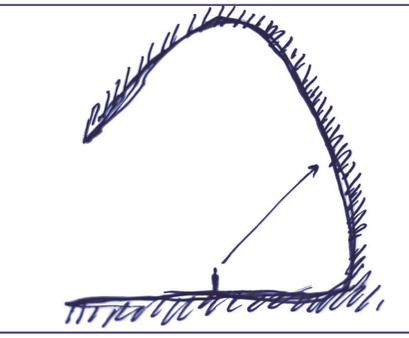
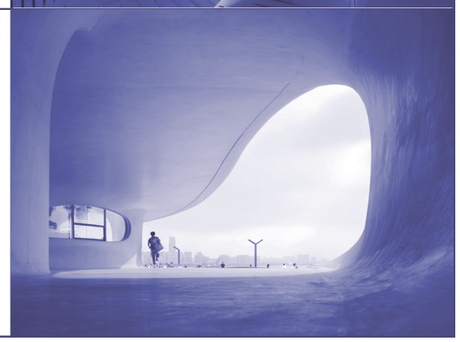
Name of Project	Boundary Condition	Images
Grotto Sunna		
Cloudscape Bookshop		

Table 2 - Comparison of two enclosure space with different scale. © Drawing by author.

nahsichtig (Araujo 2014). There is an implied premise for Nahsicht, 'to close to surface' which means the form of visual tactility cannot be free from the bondage of distance. 'When the plane comes closer, our eyes are to a given object or image, the greater the discrepancy between what each of them sees. Conversely, in faraway vision, our optical axes are virtually parallel, implying that the pictures imprinted on each retina are in such conditions not so dissimilar and we unwarily repress in the process of seeing' (Crary 1990, 32).

It reveals the fact that the tactical reaction will be stronger with less distance from the eyes and the texture will be invisible with the scale of the space enlarged. As the two diagrams show (Table 2). A smaller spatial scale enhances the sense of enclosure, making the observer feel physically wrapped by the surrounding surfaces. However, as the surface recedes or withdraws, the observer shifts from being a participant to a distant spectator, resulting in a loss of haptic perception of the boundary. To some degree, the exaggeration of certain dimensions will enhance the tactical feeling in a linear perspective (Table 3).

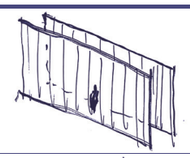
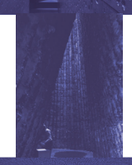
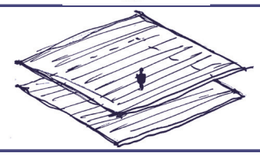
Name of Project	Boundary Condition	Images
Victoria and Albert Museum		
Bruder Klaus Kapelle		
Monumento ai Martiri delle Fosse Ardeatine		

Table 3 - Scale exaggeration in three dimensions. © Drawing by author.

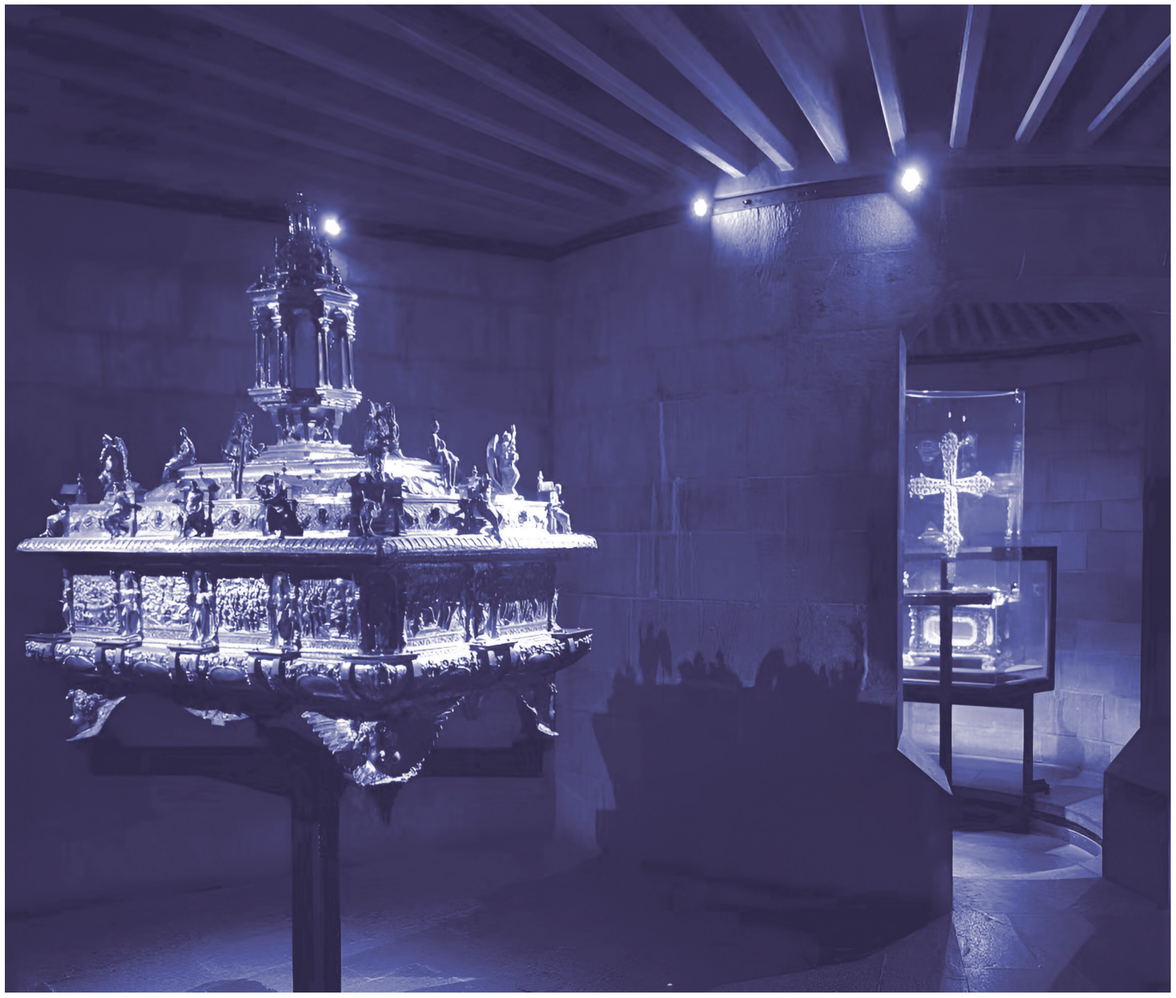


Fig.10 – Single room in Museo del Tesoro di San Lorenzo. © Photographed by author.

As Riegl explained, the eye, on its own, can take in a multitude of real bodies simultaneously, along with the space they fill; here the tactile sense is not effective. The artist must therefore remove himself by several steps from a group he means to depict until he can survey it in something close to a normal view.

This did not happen during the entire ancient era. No single relief or painting from Antiquity adhered rigorously to a unitary vantage point. Because such a space presumably contains an illogical multiplicity of focal points, it fails to provide the eye with a singular point of reference, leaving it astray, and generating a sense of elusiveness comparable to the one invoked in looking close-up. This affinity with the haptic relates to the principles of construction that rule pattern-based artefacts, which, as Graves sustains, radically oppose the ones that define linear perspective. For while the latter, reproducing the conditions of distant vision, implies that 'the vanishing point and the viewing point must be geometrically synonymous' (Araujo 2014, 7), providing the observer with a fixed, stable standpoint from where to look, the former bombards the beholder with a potentially infinite profusion of targets, providing no clue as to where to direct the eye (Araujo 2014, 8).

The obvious directivity results in the visual movement on a tactile surface and enhances the effect of tactility.

Disturbance in surface recognition

In fact, a disturbed surface is quite a comprehensive and universal effect of multi-level parameters. This essential process is the deconstruction of the existing spatial cognitive system, compressing the visual information content, and then reawakening the observer's acute tactile experience by re-observing and recognizing the boundary conditions.

For a single space, this "Disturbance " is influenced by two qualities: spatial isolation and unfamiliarity. Isolated space provides the observer with a closed and undisturbed environment where limited boundary information can be fully perceived, and it is created by untransparent boundary conditions with a high level of materiality, which has already been discussed in previous section. However, the sense of unfamiliarity in a space is closely related to how the brain constructs and interprets three-dimensional environments. Hildebrand is well aware that there is no intrinsic relationship between the two-dimensional images that we actually perceive and the three-dimensional objects that we reconstruct or imagine in our mind (Von Hildebrand 2018). This inherent lack of clarity in our perceptual process legitimizes artistic interventions:

'The visual arts alone reflect the active operation of consciousness: the activity that seeks to bridge the gap between ideas of three-dimensional form and visual two-dimensional impressions and to fashion both into a unity' (Tonghoon 2002, 25). Hence, observers are less likely to mentally construct three-dimensionality from an irregular plane. This kind of unfamiliarity prolongs the construction process of three-dimensional space, and more intense visual-tactile stimulation is accumulated through the lasting gaze at the subconsciousness.

For spatial sequence, the repetition of similar, isolated small spaces deconstructs the observer's perception of the overall environment, transforming a space beyond human scale into a series of distinct, tactile segments. In the case of Temple at Karnak and Museo del Tesoro di San Lorenzo Albini (Fig.10), interior space is deconstructed by huge pillar matrix or similar cylinder exhibition rooms, which also create a heteromorphic void between them. When in it, observers cannot read how the room is organized or connected. They, also do not know what is happening outside, but only focus on this envelope itself.

CONCLUSION AND DISCUSSION

Poet Rainer Maria Rilk suggests an intensification of our senses may counteract human suffering and thus neutralize violence and hostility (Araujo 2014). Edmund Husserl defines phenomenology as a 'pure looking', as a pure encounter with phenomenon, just like scenery to the painter. Just like a poet will search for a poetical sense for a special living experience, the architect could also try to find a existing space with specific feelings. And this is also what Pallasmaa expressed, 'The most fundamental essence of architecture is about existence, and it comes from the experience and command of existence, not a formalized and intelligent theory. We can only prepare for our architectural work by developing a unique sensitivity and awareness of architectural phenomena.' (Pallasmaa 2012, 22)

This research has explored the perceptual relationship between haptic and visual senses in architecture, with a particular focus on contemporary work. Cases that embodied a deeply tactile sensibility are compared, in which light, texture, material, and human-scale proportions are used not only as aesthetic tools but as means of fostering emotional and psychological resonance.

By analyzing this visual tactility design approach, especially the nuanced treatment of materials, scale and space continuity, the research demonstrates how tactile parameters can be integrated into the design process to move beyond rationalized, homogenized spatial experiences. This refined understanding of tactility reflects a broader effort to recognize sensory diversity—what might be referred to as tactile neurodiversity—in architectural perception and practice.

Rather than presenting abstract parameters as rigid categories, this study positions them as tools to support a more complete and empathetic design methodology, where the physical experience of space is intertwined with metaphysical meaning. Alois's visual-tactile theory offers a grounded foundation for such an approach, bridging rational design with deeply human, sensory experience.

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