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Revisiting Hylomorphism: Corporeality in Monolithic Architecture

Abstract: This article focuses on understanding and developing the perception of monolithic architecture and its relationship with hylomorphism through auto-ethnography method as the example of the historical cupola cistern in Turkey as a human scale building type. The article focuses on understanding spaces or spatial components that excite and impel us in our first architectural encounter. Some monolithic forms bring up the concept of hylomorphism, while they contain a spatiality that emphasizes or is reminiscent of the body in human perception. This article focuses on the relationship between monolithic spaces, interpreted as muted architecture, regarding hylomorphism as critically developed by Aristotle and Simondon.

Keywords: Hylomorphism, form and matter, monolithic/muted architecture, corporeality, human-scale, cupola cistern..

Introduction

Emotions are usually secretly coded, or pronounced quietly, in architecture for several reasons. Firstly, thinking at a professional level: the architects, engineers, craftsmen, and workers who transfer their thoughts, souls, touch, and existence on the material and space, envisage possible interactions of people in the space they are constructing. They sense the atmosphere of a building. The largest missing part in this process is the “eye” or active participation of the perceiver. It is, therefore, difficult for these multi-role players to declare the emotional aspects of a built space or any details that may affect people. These role players are already “dead authors”, who leave “the stage” to their real owners. In contrast, many modernist and contemporary architects prefer to be discreet about a space’s sensational aspects and emotions. This is due to how they are generally educated. Many subjects of environment-behavior and perception involve human perception summarized about spatial cognition, territory, proximity, space syntax, and (post)-Gestaltian modes of perception, and the haptic experience derived originally from the theories and practices of the Bauhaus movement. Secondly, taking a more realistic approach: “emotions have been summarily excluded from all architectural discussion[s] or theor[ies],”

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and architectural theory “has rarely considered human emotional responses” over the last half-century (Mallgrave 2013, 28). Possibly, there is not much time left for the busy architect, who struggles to meet the expectations of all different stakeholders constructed a new building but does not have the chance to consider the emotional significance of the structure and fully comprehend how diverse, complex, and unique the human sensation is to each program of a building. However, when emotions and affection are neglected in architecture, we only get a sense of our built environment, which recalls Churchill’s quote: “We shape our buildings; thereafter they shape us” (UK Parliament. (n.d.)).

In experimenting with architectural spaces, understanding human psychology and its relation to the built environment is discussed. Space deeply affects all its perceivers who enter it consciously or unconsciously, wander around, engage or touch and grasp it. Architectural elements and spaces “influence and reflect the psychological experiences of its users” (Li, 2019, p. 195), and human behaviors and their psychological responses related to architecture depend largely on their perception of the environment around which they are surrounded (Li 2019, 196). There are many forms independent of our awareness of our environment, whether they seem live or alive, constant or changing. Experience in architecture is acquired through a multifaceted, dynamic experience.

According to Pallasmaa, “the meaning of architecture is not in its aesthetics, but in the transformation of infinite and meaningless space into a specific place of action, signification, and symbolization providing limitless and measureless physical time with a human experiential measure. We inhabit the world through acts of architecture” (Pallasmaa 2003, 6). Architecture and the built environment have many fragments that cannot be reduced into fragments in understanding our sensorial experience and perception. It cannot be reduced into mere forms and shapes but involve matter, spatiotemporally, meanings, cultural codes, individuality, and social environment. A perceiver locates oneself in the void and confronts his/her bodily and sensorial existence by engaging architectural forms and programs. However, some forms can play a prominent role in our lives, whether designed or formed accidentally. Although these forms have a primal geometrical element, they have a time and spatiality that deeply involve us. The architectural or sculptural and plastic forms can occur more particularly in spatial components that have gained autonomy and create their language with a sculptural expression. Some of these forms, which can be called monolithic or muted create a different sensation and affection on its perceivers since they are naturally tasked with a mission to envelop them in a provoking way. These forms, include cupolas in the history of architecture or modern sculptures such as Tony Smith’s “Die” installation (1962), Christo's wrappings as assemblages or Jean Nouvel’s “Monolith”

(2001-2002), a steel cube Expo 02 Arteplage in Morat in which the hylomorphism becomes more visible due to the pure forms and content of a tectonic space.

In this context, we encounter the "hylomorphism" phenomenon in some monolithic architectural forms in which form and matter fuse as a tectonic architectural trait. Therefore, this article focuses on understanding and developing the perception of monolithic architecture and its relationship with hylomorphism using auto-ethnography method as the example of the historical cupola cistern in Turkey as a human scale building type. The article focuses on understanding spaces or spatial components that excite and impel us in our first architectural encounter.

Encounters with Monolithic Architecture: A Cupola as a Hylomorphic Experience

Within this perspective, the first and most obvious thing I remember as a child was constantly watching the places and objects around me. The way people interact with these objects, and the way they use them, were remarkable. This experience of staying in time and space was undoubtedly a reality showing the semantic meaning behind the objects, and how entertainingly they carried an infinite inner dynamism that triggered mental imagery.

Among the architectural forms I have come across, the most impressive forms that offer mental flexibility were the cupola cisterns in human scale located in Bodrum, Muğla. These cisterns, built during the Byzantine period, are semicircular cisterns that sit directly on the ground and reach up to 3 meters high, allowing closer contact with a child's body through tactile experience since architectural forms were easily accessible. Cisterns dating back to the 16th century draw attention with their pointed domed forms, especially on the roadsides around Muğla (Çobanoğlu 2009). It was my first foreign and monolithic encounter with dome cisterns. While this half-dome-shaped white stone was a fun place viewed from the outside, it was a dim, humid, frightening endless universe where I could hear my voice. Once inside, it was no longer possible to mentally exit this semi-dome. It was an uncomfortable and exciting experience to come across this void on a human scale. There was nothing but me and this dome, only emptiness and me. There was neither a wrought iron experience nor a detail to hide my mind or fear. As such, this monolithic structure became my new infinite universe (Figures 1, 2).

Figure List



Figure 1



Figure 2

Cupola cisterns in Muğlas as hylomorphic architecture (Photo by the author, 2011)

The void that I entered was a new space, and unlike anything I was familiar with an indescribable atmosphere took place for many years until I studied architecture. Such cupola cisterns, which I confronted as monolithic volumes form the hylomorphic phenomenon more prominently visible, like other architectural forms. Whether in a certain city or rural area, they create closure, mystery, and obscurity in an unbuilt natural environment and invite the viewer to discover them. Although these forms exist in nature before human architecture, they also point to a meaning on which the viewer can build meaning due to their prime geometries or the strong connotations they create. For example, a soap bubble, a spider's spherical web architecture, the mother's womb, and the seeds and structures of plants as biomimetic inspirations help establish an analogy and give the impression of sheltering in it. The cupola cistern has an architectural, tectonic and monolithic geometry where hylomorphism becomes more visible. Since this enclosed space was on a human scale and created a slight sense of shelter, it could be easily perceived through their bodies.

As Arnheim mentions, the cupola represents the "image of the sky" as it is also the "dwelling place of the divine power" (Arnheim 1977, 90). In our modern-day, the cupola may not represent or symbolize the "religious image of Heaven", however, it has a close relationship with the sky (Arnheim 1977, 208). However, its meaning witnesses through the eye the relationship between form and matter and human-made being sensed with a bodily interaction, since it is on a human scale. Human beings perceive the environment through visual senses while being stationary, and perceive it with physical mobility and locomotion in space accompanying these experiences. With physical movement, as Arnheim argues, "the mind sees the world ahead as a map of potential paths. The same visual distance all the ways different images depending on whether it permits motor access or not. The moon looks different when it is seen as a target of space travel rather than as a heavenly body way of in the sky. Looking up to a cupola, one receives a side effects of by unreachability, as distinguished from a target attainable on the ground if the same distance" (Arnheim 1977, 155).

Human beings are familiar with domes or cupolas both from nature and many circular or ring-shaped spatial forms in history. The form of the dome was used in many historic buildings. As Lethaby explains, the sky is understood as "hollow" and "semi-spherical" as a "vault" or a "dome". However, before domes or vaults were invented, the sky was perceived as a flat geometry like a ceiling (Lethaby 1892, 221). One of the architectural domes invented in history was the Chaldean, where people perceived the sky as a "solid hemisphere" in terms of nature symbolism reflected in the buildings. The dome's construction is attributed to the "form of the heavenly dome" as the ceiling reminiscent of the great nature temple (Lethaby 1892, 221). Similarly, in the Islamic and the Christian religion, the

central plan crowned by a dome was adopted as a visual articulation of a spiritual journey (Grupico 2011, 3). The form of the dome is rooted “in mystical thought dating back to Plato and Pythagoras”, since “the circle [with] no beginning and no end, reflected perfection, the eternal, and also the heavens” (Grupico 2011, 8). Cupolas were also seen as a symbol of royal and divine presence in Byzantine architecture (Smith 1956, 189).

Some other domes are Great Stupa in Sanchi, India (ca. 250BCE-250CE), which symbolizes the enclosure surrounding the tree under which the Buddha received enlightenment and gates and entry axis which may be related to ancient sun symbols with an elevated circumambulation path used by priests (Moffett, Fazio and Wodehouse 2004, 71). Circumambulation is a term used to define a custom in different cultures “observed, with a religious or magical signification” or sometimes used unceremoniously such as marriage or funeral “to denote the custom of walking around objects or persons for the purpose of influencing or honoring them” (d’Alviella 1910, 637). Another dome is the “Dome of the Rock” (c. 688-692 C.E.) located on Temple Mount Moriah in Jerusalem (Grupico 2011, 8; Lethaby, 1892, 89) and Pantheon (c. 125 C.E.), in which the “height to the zenith, from the floor, is equal to the diameter so that it would just contain a sphere” (Lethaby 1892, 43). Another example of a dome is Tommaso Campanella’s *Civitas Solis* (*The City of the Sun*, first published in 1623) town that was a circular city located on the hilltop recalling the Mannerist period. The temple was also circular, the large dome had a cupola at its center (Campanella 2009, 7). *The City of the Sun* consisted of seven rings derived from the seven planets. “Above the altar, a large globe represented the earth; on the dome were all the stars of heaven...” (Lethaby 1892, 44).

These cisterns enclose a spatial atmosphere for the water. Water dwells in the cistern, dwelling in the sense of Heidegger. Heidegger mentions, “on the earth” means “under the sky”, “both of these also mean “remaining before Divinities” and include a “belonging to men’s being with one another” (Heidegger 2001, 147). From the perspective of Feng Shui¹, it was a yang element in nature derived from ecology and was related to “human adaptation to the environment” (Bruun 2008, 97-98) and provided “an equilibrium amongst nature, building and people” (Bruun 2008, 98). Water is a flowing element, which does not have a fixed shape. It is in transition, and “its shape is largely determined by the landform through which it flows” (Lin 2000, 76). However, ponds and lakes are perceived as “yin-water” because they contain “curves and stops” due to their stable condition compared to oceans where water flows fast (Lin 2000, 22). Although cisterns have technical functions such as warehouses, the tectonic nature of the space more clearly reveals our thoughts about its formation beyond their program.

In Arnheim's words, the void of the cistern can be evaluated as "concentric, a superimposing of centric spatial systems with the cosmic one. Organized around a center, a concentric system is "endlessly expanding in the outward-bound direction but coming to a final stop inwardly" and "the central point allows for orientation" (Arnheim 1982, ix). Arnheim finds centricity as a crucial trait of composition in visual arts (Arnheim 1982, x). Although it does not have the same symbolic content, "circumambulation" can be done around this cupola cistern which physical contact can be made of in substance and form. On the other hand, the ability to move around inside the cistern creates a deeper perception: These spaces, which contain only water, give people a sense of fluidity similar to the energy of water. The perceiver now realizes that this closed and monolithic space in the form of a container or bunker creates an essence that transcends the function coded into it.

Monolithic Architecture and Corporeality

"The appearance of the things depend on either the thing appears as moving or resting, but the perceiving Ego, or its body, moves. The eye, the head, or the whole Body moves; the relations between the thing and the Body change, and to these there correspond ever different modes of appearance of the thing" (Husserl 1997, 125).

Arnheim quotes from the painter Ben Shahn, "form is the visible shape of content" (Arnheim, 1974, p. 96). "Shape informs us about the nature of things through their external appearance" and "a shape is never perceived as the form of just one particular thing, but always as that of a kind of thing" (Arnheim 1974, 96).

Architectural spaces consisting of purely monolithic forms, such as the cistern cupola, can be described as muted or monolithic. As Machado and El-Khoury mention monolithic forms are "simultaneously solid and hollow, uniform and heterogeneous, impregnable and permeable, foreign and familiar, the monolith that is not one stands out as a glitch, a disturbance within the dialectical and the corollary axiological dichotomies that continue to regulate the theoretical discourse in architecture and persistently sanction the emancipatory virtues of the formless as opposed to the totalizing and repressive authority of the "formed", the small to the big, the fragmented to the coherent, the transparent to the opaque, the irregular to the orthogonal" (Machado and El-Khoury 1995, 13). "Unlike the archaic monolith, which is ideally carved out of a single block, monolithic architecture is assembled from parts" (Machado and El-Khoury 1995, 15).

In the history of architecture Étienne-Louis Boullée's 150-meter-high sphere "Cenotaph for Sir Isaac Newton" (1784) was a monolithic

dome that was never built. The spherical shape of the building involved a small sarcophagus for Newton placed at the lower pole of the sphere. Boullée's design as "an immutable and totalizing architecture" created an interior world that inverts exterior lighting conditions. During the day, the interior is black, and at night, "light radiates from an oversize luminaire suspended at the center point of the sphere" "through narrow punctures whose arrangement corresponds with locations of planets and constellations" (Miller 2018). Boullée's monolithic architecture emerges as "a relationship and an analogy with human organism" (Boullée 1976, 86). He describes a sphere as a pure form, which does not destroy our vision of the magnificence of the form itself since the surface of the sphere is "equidistant from its center" as it also the simplest possible form; it has "uninterrupted surface" and "offers the greatest possible surface to the eye" which "lends it majesty" (Boullée 1976, 86). Boullée's sublime and monolithic form creates architectural imagery which can only exist with "a profound knowledge of nature" and he mentions this as follows: "The poetry of architecture lies in natural effects," which makes architecture a sublime art (Boullée 1976, 88). The dome is centered in the monument in order to "impress anyone who enters the temple" (Boullée 1976, 93).

Arnheim mentioned that "the internal shape corresponding to the external convexity of a cupola is not so much a concave hollow surface as it is a second, internal dome, made of air. The "two 'nested volumes' do not provide a difficulty for visualization, themselves, but it is rather the fact that they are practically experienced from two loci. For instance, it is the facade that provides the spectacle of elevation, while in the interior we feel elevated ourselves" (Verstegen 2005, 56).

Another thing which we can say about monolithic architectural forms is Paul Virilio's fascination with concrete bunkers in his confrontation along the beach south coast of Brittany in the 1960s (Virilio 1994, 10), which he named the "archaeology of the brutal encounter" (Virilio 1994, 19). The concrete forms created a sense of "convergence between [an] awareness of spatial phenomena—the strong pull of the shores—..." (Virilio 1994, 10). Virilio found an analogy between "the funeral archetype and military architecture" (Virilio 1994, 11) and defined these gray, colorless spaces as "massed with sad angles and no openings" (Virilio 1994, 12). Having an "anthropomorphic character" (Virilio 1994, 43), Unlike the bunker, which limits the visual field to a strict minimum, to the target (Virilio 1994, 43), the cistern is neither for human entrance, nor for enclosing a dwelling. However, "monolithic architecture is assembled from parts. The only modern architecture that is truly monolithic is that of the bunker" (Machado and El-Khoury, 1995, 13).

In these forms, the monolithic phenomenon is "carried out along and across the limit between the interior and exterior" (Machado and El-

Khoury 1995, 16). They emerge as autonomous. Unlike the traditional building facade or elevation, “whose formal and material qualities are negotiated between internal conditions (programmatic, planimetric, sectional), and external contextual pressures, the surface of the monolithic is characteristically independent of such constraints: it is designed with distinct and often uncompromising formal features that tend to set it apart from the body of the building” (Machado and El-Khoury 1995, 16-17).

Monolithic forms are introverted spaces because they are also exempt from spaces and porous surfaces such as windows that contact the outside. Although space seems to be confined to its internal setting, they raise a question about scale when viewed as a whole. Does space hide something that exists inside by closing it with its own body, or does it point to a larger void that surrounds it by creating an indestructible and inviolable autonomy like a pedestal? How does space preserve its vitality? This relative closure of space as an alienating form may contain the urge to explore, the desire to be involved in space, the announcement to trigger more tactile physical contact to grasp its full vitality. The stones that make up the cistern, unlike the inaccessible and sublime splendor on the roof of a mosque or church, create an opening for a bodily sensation that feels like the perceiver and could build it with their own hands.

Hylomorphism: The perception of Form and Matter in Architecture

As Aristotle mentioned in his book *Metaphysics*, hylomorphism is related to “substance (that which is separable) as a compound of form and matter” (Lloyd Thomas 2007(a), 4). “The term Aristotle uses for matter, “hyle”, also means wood (and is occasionally used for other materials). “Aristotle uses a second term, “hypokomenon”, which is usually translated as “substrate” and refers to prime matter”. Hylomorphism means “that which lies beneath” – it has the sense of something behind, something perhaps which can be deduced rather than touched. In Aristotle’s account, a kind of elision occurs between the hypokomenon and the hyle. In trying to explain the concept of [the] prime matter he uses examples of specific materials: “In speaking of matter [the] I have in mind say, the bronze of a statue, while by the shape-form I mean the geometry of the object’s appearance” (Lloyd Thomas 2007(a), 4).

In *Physics*, Aristotle “has introduced a distinction between form and matter that considered together characterize physical and mental objects. This idea, called hylomorphism, became the foundation of Thomist philosophy in the 13th century” (Duch 2018, 1). Matter considered in itself is indeterminate unless it is determined by union with form (Aristotle 1907, 306). The matter is “inert,” “shapeless by itself,” and gains its shape “by the

action of form,” such as the four elements: “earth (cold and dry), water (cold and humid), air (hot and humid) and fire (hot and dry)” (Tramer, Voltz, Lahmani and Szczepinska-Tramer, 2007, 8).

Aristotle identified the form of living things “as their soul and their body as their matter” and “among the faculties of the soul, he understood sensation to result when a form was received by the sense organs without any concomitant matter from the object being perceived” (Manning 2013, 174). In Aristotle’s “hylomorphic model, hylē (matter) is “an independently constituted and fixed form”, and matter, itself conceived as a fundamentally inert, homogeneous substance....” (Kwinter and Boccioni 1992, 53). However, as Weinstock puts it, “the forms of nature-living forms such as plants or animals, and non-living forms such as river deltas, hurricanes or desert sand dunes, have an intricate relationship. They interact with each other and with their local environment, and in doing so they modify that environment, which in turn may change sufficiently to induce further reciprocal modifications. natural forms have the capacity to change significantly and to generate new forms, structures and properties from existing ones” (Weinstock 2008, 21).

Hylomorphism “claims that essential properties of things flow from their essence” (Roudaut 2018, 16). In philosophy, in hylomorphism “form is active and imposes itself on [the] matter which is inert, passive and merely receptive” (Lloyd Thomas 2007(b), 44). The form is evaluated as a process that changes its physical structure and transforms into something else, such as water transforming into ice or vapor or snowflake with a unique form transformed from crystallization of water. When objects change the form or have multiple forms, they still “preserve their identity and [are] categorized in the same way” (Duch 2018, 3).

In *A Thousand Plateaus: Capitalism and Schizophrenia* (1987), Deleuze and Guattari refer to the French philosopher Gilbert Simondon’s criticisms of hylomorphic and its social presupposition. They mention that “form corresponds to what the man in command has thought to himself, and must express in a positive manner when he gives his orders: form is thus of the order of the expressible” (Deleuze and Guattari 1987, 555). Unlike Aristotle’s relationship of form and matter, Simondon reads this relationship as a dynamic schema and sees it in terms of “matter endowed with singularities-forces, or the energetic conditions at the basis of a system” (Deleuze and Guattari 1987, 555). “Hylomorphism produces a sense that matter is passive and devoid of any formal or organizational capacities of its own; it requires form to be “imposed” upon it. By segregating the notion of form from [the] matter, and by suggesting that form dominates matter, hylomorphism may invoke and promote a broader sense of hierarchy...” (Smith 2013, 61). In his book *The Individual and its Physico-Biological Genesis*, Simondon suggests that the hylomorphic model of

form and matter underpins the idea of “social hierarchy” and the hierarchical thinking typical of Western thought” (Smith 2013, 61). Simondon criticizes the hylomorphic model in terms of a separation between form and matter. For him, “the critique of the hylomorphic schema is based on “the existence, between form and matter, of a zone of medium and intermediary dimension,” of energetic, molecular dimension—a space unto itself that deploys its materiality through matter, a number unto itself that propels its traits through [the] form” (Deleuze and Guattari 1987, 409).

The terms hylomorphism and monolithic architecture are evaluated interchangeably and embedded in terms of Machado and El-Khoury mentioning that “the stark muteness of architectural monolith may have an alienating aspect; its hermetic consistency does not readily inspire as far sympathy nor facilitate empathy” (Machado, El-Khoury 1995, 13). So, do monolithic forms hide themselves to show these natural elements contained behind their forms? Behind their “stillness” is the logical principle of their form still made clear, or perhaps inclusiveness, enclosing space and time. In this context, monolithic forms, which we can understand as monolithic architecture, indicate potential spatial independence of the functions loaded on them as formless objects. On the other hand, do they enclose the moment, time, and environment they are in with the viewer?

Final Words

As in the case of the cupola, the monolithic forms of architectural forms that seem to be closed to themselves, as opposed to being an important and hierarchical, dominant element of a tall building, interact with the haptic experience and the physical circulation of the human body more easily if they are close to the human scale. Such a striking and impressive combination of form and matter not only shows the symbolic meaning of some architectural spaces but essentially makes the physical existence of humans in this world more visible.

Notes

¹ According to Feng Shui, five elements constitute everything in the universe; fire, wood, metal, metal, water, and earth. “Two kinds of relationships exist among these elements (Lin 2000, 22) mutually productive and mutually destructive” (Lin 2000, 23). For example, the earth needs water for its aliveness, but too much water destroys the earth, and the water tries to escape earth element, instead needs fire element, and the cycle of the elements goes on circularly and is dependent on each other. From these elements, “water is one of the most important elements according to Feng Shui (Lin 2000, 73).

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