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ARCHITECTURE & CAPITALISM: A GOLDEN GRIDLOCK

In his 1853 London Lecture, Gottfried Semper dispensed with the classical disciplinarity of architecture. He proposed instead an open-ended process of architectural formation based on ur-form stigmatized in the modernist concept of frame structure to be clad in reference with aesthetic regimes as architecture moved from the modernist understanding of abstraction to postmodernist figuration, and back to a more complex notion of abstraction exemplified in the fetishism of commodities. The paper claims that Semper's architectural theory initiates a historical understanding of architecture's problematic rapport with capitalism, a radical move given the codification of architecture's autonomy in two major ways. One concerns the origin of architecture, and the other takes the eighteenth-century discourse on type to avoid addressing the question of origin. Since Vitruvius, the hut has been coded and recoded by various architects and historians as the kernel of architecture's origin. This classical assumption, this paper posits, can be faulted through a theoretical reversal: the tendency to consolidate a linear vision of architectural progression is undermined if the Greek temple is considered as an analogue for the hut. The Enlightenment contribution to this historico-theoretical position culminated in the idea of type, replacing the identification of a single origin for architecture with multiple typological studies. Along with this came an abstract understanding of composition, the grid, to be projected in a three-dimensional structural system as architecture entered into the production and consumption system of capitalism. The paper highlights the usefulness of re-approaching Semper's theory of architecture today, when, because or in spite of the process of digital reproducibility, surface has re-surfaced as topical. To this end, this discussion will focus on the tectonics of three surface economies, each in reference to three different interpretations of frame-structure, as architecture's relationship with capitalism deepens into the gridlock of the aesthetic of contemporaneity.

Prelude

Architecture, among other cultural products, has always been associated with the given “order of things,” to recall Michel Foucault. Architecture’s rapport with the prevailing aesthetic and technical regimes runs through a complex web of networks, which in the contemporary discourse of Marxism is discussed in terms of architectural ideology. What this means is that most theorization of architecture fails to demonstrate or critically attend to that which seems *natural* in architecture. The overwhelming presence of the aesthetic of commodity fetishism in contemporary architecture, for example, is mistakenly taken for a kind of digital expressionism.¹ Considering the long history of the periodization of architecture and its codification under the rubric of style – itself a by-product of a linear vision of history – that which looked natural in pre-modern architecture is most often discussed in reference to the two themes of origin and type.²

The relationship between origin and type in modern times is itself an interesting one. Since its inception, and through the discourse of Cuvier and others, typological studies has tried to promote a scientific and analytical understanding of nature and the *raison d’être* of nature’s products, in particular their form and organizational structure. Simultaneous to this unfolding, rationalism was launched as an effective weapon to demystify the symbolic and scatological understanding of the rules governing nature and society. With some modifications, this rather simplistic definition of type was internalized into architectural discourse. In hindsight we can say that the eighteenth century was pivotal for the formation of the idea of architectural ideology: a definitive discourse of type and origin was disseminated through volumes written by Quatremère de Quincy (1755-1849), Marc-Antoine Laugier (1713-1769), and J. N. L Durand (1760-1834).³ It is not my intention here to discuss these authors’ theoretical contribution in any depth. This paper would only claim that Quincy’s theorization of the differences between type and model was an arrow to the heart of the classical theories of imitation. Laugier’s *An Essay on Architecture* (1753), on the other hand, supports the hut as the origin of architecture. His was a *weak* view of the eighteenth-century turn to the rationalistic interpretation of type promoted by Durand. Weak because, unlike the Vitruvian discourse on the origin of architecture, Laugier’s hut was imbued with the Kantian notion of autonomy, a concept already blended into the discursive formation of type.

In this paper’s implicitly suggested collapse of type into hut, something happens that has historiographical significance. The exclusion of excess (ornamental or symbolic) was brushed aside by rational articulation of what seemed to be the basic elements of architecture: four tree-trunks (columns) supporting the roof. This study takes this unfolding, which can be associated with Aldo Rossi’s discourse on “analogical architecture,” and posit a Semperian reading of the essentiality of the repetition of *frame* as architecture tries to accommodate the move from mechanical to digital reproducibility. To begin with, this paper would like to propose that in Modernity the *frame* structures various components both of a building and of architecture’s inevitable engagement with capitalism. The frame is indeed the collective in architecture, alluding to the ways that capitalism sustains its hold on architecture aesthetically. This claim is better understood if read in analogy to Rossi’s suggestion that the three monuments depicted in Canaletto’s view of Venice “constitute an analogue of the real Venice.”⁴ Here, the idea of type is presented as a simple form composed of basic elements, whose structure, though diffused throughout historical transformation, still has the potential to be associated with the collective dimension of Venice. The collective emerges, Rossi continues, not through image, but through the silent “repetition of objects themselves.” The compulsion to repeat, he wrote on another occasion, “may manifest a lack of hope, but it seems to me that to continue to make the same thing over and over in order to arrive at different results is more than an exercise; it is the unique freedom to discover.”⁵ The search for the “new” is thus suspended and presented “as a catastrophic moment in which time takes things back.”⁶ We are also reminded of Adolf Loos, who discouraged architects from designing a new chair while seating habits had not changed, and of Mies’ American period, when he repeatedly used a single tectonic frame structure for various purposes. For these two architects, and for Rossi as well, history becomes analogous to “skeleton,” which, according to Peter Eisenman, “serves as a measure of time, and in return, is measured by time.”⁷ Such is the role that frame has played in architecture since the inception of Modernity.

Starting with this analogical association between history and *skeleton* (ruin), the rest of the paper will attempt to introduce Semper's anthropological examination of the Caribbean hut as an analogue to a critical exposition of architecture's exchange with capitalism. Central to this claim is that Semper read the Caribbean hut in analogy with the Crystal Palace, the building where it was displayed. The exposed structural elements of John Paxton's design neither resembled the classical Orders, nor had anything to do with the Albertian consideration of the column as ornament. It rather exhibited the element of column as structural part of the frame, beyond its use in the work of engineering. Instead of reading the Caribbean hut as a type, Semper presented a materialist reading of the displayed structure – materialist in the sense that he not only recognized the structure's four elements, but also associated each element with motifs shaping the products of four industries – carpentry, ceramics, textiles, and masonry. As an analogue, the Crystal Palace was exemplary in demonstrating the ways that each of these four industries ought to modify both its products and production processes in reference to the emerging industrial capitalism.⁹ This paper is not trying to show how the Caribbean hut and the Crystal Palace were in a symbiotic relation with each other: rather, it will argue that Semper's reading of the displayed hut de-stabilize the Crystal Palace as an important representation of the emerging *objectivity* unique to the rising capitalism.

To further emphasize the usefulness of Semper's theory of architecture with regard to contemporary architecture's interest in the theme of surface, this paper will take Semper's discourse on skin and frame and formulate a constructive critique of contemporary architecture in general, and the tendency to transform architecture in association with the digital zeitgeist in particular. The theoretical contribution of this diachronic reading of the architecture of analogy is twofold: the concept of analogy disrupts the process of mimesis, allowing a historiographical reconstruction where attributes such as continuity and rupture do not exclude each other.⁹ This paper also intends to critique contemporary inclination toward the historicization of architecture in reference to the prevailing linear art history discourses on temporality. Finally, the anachronistic organization of this paper alludes a totality wherein the process of the commodification of architecture is demonstrated as capitalism moves from one set of internal contradictions to another.

Frame I

In his seminal essay entitled "Chicago Frame," Colin Rowe underlines the universal nature of frame, comparing it with the role columns played in classical architecture. According to Rowe, the frame has so "*become* architecture, that contemporary architecture is almost inconceivable in its absence."¹⁰ Consistent in most tall buildings of Chicago, to stay with his text, is the presence of the classical notion of façade, a frontal surface embellished for the spectator's aesthetic pleasure. This phenomenon, frame-surface articulation, can be detected in most of H. Sullivan's tall buildings built in Chicago (Carson Pirie Scott Co Building, 1897), St Louis (Wainwright Building, 1891), New York City (Bayard-Condit Building, 1897), and Buffalo (Guaranty Building, 1896). In these examples, the frame underpins the façade's surface articulation, assuring the continuity of the aesthetic norms of Humanism. However, what happens between Chicago Auditorium Building and Carson Pirie Scott is that the rapport between surface and the vertical and horizontal dictums of the frame structure shifts towards the over-domination of frame in the latter project. In this mutation, the Wainwright building is a pivotal case. According to Alan Colquhoun, the surface cladding of Wainwright anticipates Mies's Seagram building. Colquhoun fails, Daniel Sherer writes, "to distinguish between the disparate normative values assumed by the classical and industrial idioms in the Chicago context."¹¹ As far as tectonics is concerned, what should be added here is that the Miesian curtain wall departs from the notion of façade, weaving the latter's surface into the frame structure. In the Seagram building, the idea of frontality is discarded and the envelope looks like wrapping the structural volume.

For Rowe a different relationship between surface and frame prevails in Frank L. Wright's St. Mark Tower, 1929. Similar to the branches of a tree, the tower's four volumes project outward along four walls, intersecting at the central concrete core column. The strategy seems, Rowe writes, to "derive from the 'organic' demand for the integration of space and structure; and, as fulfilling this demand, the building becomes a single, complete, and self-explanatory utterance."¹² If we follow Rowe's reading, then, Wright's organic integration of space and structure can be associated with the classical canon, where the "meaning" of the edifice tries to communicate with the spectator independent of its own structural system. Furthermore, in St Mark Tower, the Sullivanesque dialectics between surface and structure, and the Miesian curtain-wall wrapping the volume, give way to a sculpted massing. Tectonic or otherwise, the dialogical rapport between space and structure remains the central occupation of modern movement architecture. It is not farfetched to see Wright's sculpted tectonics as anticipating Brutalism.¹³ However, recalling Le Corbusier's Dom-ino

frame, Rowe moves on to make a distinction between American architects' use of frame and that of their European counterparts. In Chicago, he writes, "it might be said that the frame was convincing as fact rather than as idea," as it was considered by European architects working in 1920.¹⁴ This difference is superseded by the emergence of parametric design. However, what lies behind the most complex and digitally reproduced forms is the frame structure that is wrapped by various materials, the aesthetic of which tallies with the spectacle permeating the commodities produced by late capitalism. There are numerous cases in architecture today where Semper's tectonic formulation of the relationship between cladding and frame is drastically modified, if not abused.

Frame II

In wrapping the frame of Seagram Building, Mies was recalling what he had already experimented with during his Berlin period. In a 1921 project called the Glass Tower, a transparent glass curtain wraps the irregular geometry of a plan that is punctuated twice to make space for the design's core service volumes. The wrapping nature of the glass curtain is further emphasised by the absence of any sign of columns in the plan. Instead, the columns are shown running through each floor slab in the volumetric image of the tower. Sigfried Giedion characterised this project as a "modern excursion into the realm of fantasy,"¹⁵ one that was already anticipated in the Reliance Building designed by Burnham and Root, 1894. However, their difference cannot be underestimated when the plan and vertical images of these two edifices are compared. There are no direct or indirect traces of the frame structure (steel or concrete) in Mies' visionary project. By contrast, while the cladding of the Reliance building does look like wrapping the volume, the regulating lines of its façade articulation, however, follow the horizontal bands of the floor slab and the vertical posture of its column, a composition alien to Mies.

In a recent review of Bernard Tschumi's exhibition at the Georges Pompidou Centre, Paris, Anthony Vidler notes that the spatial and organizational consequences of Le Corbusier's Dom-ino frame offer an appropriate point of departure for a critical understanding of the Five Points that Tschumi pursues in his architecture.¹⁶ What needs to be added to Vidler's elaboration of the historical differences between these two architects is the essentiality of the search for *Objectivity* for the formation of modern architecture. Central to Tschumi's architecture is a conceptual drive for objectivity that differs from the Bauhaus search for the *Neue Sachlichkeit*, and from Le Corbusier's purism.¹⁷ These differences correspond to various modernist conceptualizations of the frame-structure system. What Rowe and Vidler left unnoticed is the singularity of Mies's rapprochement to the frame.¹⁸

Consider Mies's 1928 Barcelona Pavilion, which, as a temporary exhibition building was destroyed, yet rebuilt in 1986. What makes Mies's strategic approach to frame in this project different from an experimental project called the 50X50 House (1951), and other built projects, the syntax of which culminated in the Berlin National Gallery (1968), is his unique interpretation of Semper's tectonic theory. Many historians and critics have written extensively about the Barcelona Pavilion before and after its contemporary reconstruction.¹⁹ This is a path-breaking work in the successful portfolio of early modern movement architecture. Centred on the tectonic dialogue between column and wall, the design's planimetric organization blends space, materiality, and movement together. This building is indeed the best example for understanding Semper's concept of the tectonic of theatricality: the idea that architecture is construction plus something else, or, to put it differently, that excess is what makes architecture different from building. The overall volumetric composition of the Pavilion might be taken for the De Stijl's sense of objectivity, a composition based on vertical and horizontal planes. This observation is true at a perceptual level, and paradoxically it can be supported by the invisible position of the Pavilion's frame structure, eight columns with related steel beams. Neither from an angle, nor by any moving angle along the interior space, does the spectator ever have the chance to see and contemplate the frame's eight columns in their totality. Mies, the late Robin Evans writes, "was not just interested in the truth of construction, he was interested in expressing the truth of construction."²⁰ What is therefore unique to the Miesian concept of frame is that it is articulated in relation to the element of roof and enclosure, the wall and/or the partition. Interestingly enough, Mies did further explore, almost to the point of exhaustion, the tectonic dialogue between column, roof, and glass-curtain membrane as he moved from the Barcelona Pavilion to his later projects. What happens along his journey is that each major architectural element attains tectonic form: the glass curtain wall wraps the interior space, the roof hovers above, and the column supports the roof. At a perceptual level, however, by moving the column away from the corner, Mies deconstructed the conventional relationship between column and enclosure permeating most of Chicago's tall buildings.²¹ Colquhoun's association of surface cladding between Wainwright and Seagram building is afloat.

Frame III: frame-less

Central to the Miesian frame is the tectonic rapport between the roof, the column and the enclosure. If we agree with the proposition that the nineteenth-century's obsessive search for style ultimately ended in formulating the language of steel and glass architecture, then Mies's work, this paper claims, abruptly ended the early modernist interest in intertwining style with *Zeitgeist*.²² The fact that this development coincided with various claims for the end of Modernity and the beginning of postmodernism demands discussing the complex relation running between the cultural and the openings taking place in the socio-economic and technological structures of post-war capitalism. Instead, what prevails in the architecture of both postmodernism and parametric design is the emergence of surface as an image. Nevertheless, beneath the postmodernist esteem for the simulation of historical forms are design strategies that are thrilled to abuse Le Corbusier's conceptualization of the Dom-ino frame. Le Corbusier's idea of "free-façade," for example, is meaningful only in reference to the other four points discussed in his Five Points of Architecture. Otherwise, the tendency to make the frontal façade a representational surface has a long history in Humanist architecture.

To continue this line of consideration, parametric design has been successful in reversing the course of architecture that has been unfolding since the 1990s. With the emergence of the biomorphic surfaces evident in most digitally reproduced architecture, gone is the Humanist aspiration for frontality, and the Miesian tectonics of the three elements of the roof, enclosure, and frame. What makes the use of frame structure in parametric design different from its appropriation by modern and postmodern architecture is the weakening, if not the disappearance, of the line separating the roof from the wall. In turning the vertical posture of the wall into an organic and curvilinear enclosure, the spatial configuration instigated by the rigid grid of frame is compromised and the surface is enforced with its own structural system.

Consider Zaha Hadid's Heydar Aliyev Cultural Center, Baku, as an example. Designed using an advanced computational system, the building demonstrates an undulating and soft looking skin supported by a concrete structure combined with a space frame system. Furthermore, the surface geometry "fosters unconventional structural solutions such as the introduction of curved 'boot columns' to achieve peel of surface from the ground to the West of the building, and the 'dovetail' tapering of the cantilever beams that support the building envelope to the East of the site."²³ To ensure the design's powerful plasticity (expressionism), different cladding materials such as Glass Fibre Reinforced Concrete (GFRC) and Glass Reinforced Polyester (GFRP) are used to cover various transitional zones. In the Heydar Aliyev Cultural Center, the frame structure is compromised with a composite construction system wherein the tectonic of skin and bone gives way to a rising and falling structural envelope. With this gesture, "the building blurs the conventional differentiation between architectural object and urban landscape, building envelope and urban plaza, figure and ground, interior and exterior."²⁴ The project's delicate tectonic grounding of the earth-work and the frame work is a reminder of Utzon's Opera House, with this difference: Utzon's original shell roof-work had to be edited later through a semi-ribbed frame and shell system, the building's tectonic articulation necessitated a construction system that would combine structural elements of steel, wood, and concrete. Instead of smothering material and structural differences, Utzon highlighted materiality, charging the work with a sophisticated joint-work. By contrast, nothing demonstrates the atectonic quality of Hadid's Heydar Alyev project better than the smooth undulating interior and exterior surfaces.

Re-Framing the Frame

This brief discussion of the three *orders of frame* aims to address two interrelated issues: firstly, that, through modernization, technological transformation had a great impact on architecture. Secondly, that, each discussed *order* also demonstrates the gridlock of architecture and capitalism. What this means is that, in order to become part of the system of capitalism, in addition to accommodating the existing labour skills and techniques, architecture has no choice but to become part of the process of the commodification of the cultural that is at work in late capitalism. While the iron beam, for example, was first tailored for use in railroads, soon it was re-designed in the form of the steel T-beam and column to be used in bridges and exhibition halls, and then transformed to suit the construction process of architecture. No one can deny the major spatial and formal changes that steel frame structures have introduced in architecture. The Crystal Palace deconstructed the interior space, turning it to an exhibition arena filled with various products of early capitalism. These typological transformations also had formal and aesthetic connotations. More significant is the way that techniques developed in industries extraneous to building construction slowly but surely distanced architecture from its craft-based traditions, pushing it further into the orbit of a complex

network characteristic of the capitalist cycles of production and consumption today. Digitally reproduced architecture might not be the last blow to architecture that was coded either by masonry techniques of building or by the frame structural system; what is sure, however, is that architecture today looks like it is standing firm in entirely new ways. Digital modalities of assembly, Stanford Kwinter writes, invoke “patterns of biological propagation and variation, as well as more architecturally familiar mechanical-tectonic principles and especially their limits.”²⁵ Furthermore, most commodities, including architecture, are subject to a kind of knowledge that is more cognitive and less technical and skilled based.²⁶ That is why architects today can design any form with disregard to the skills and techniques needed to build it. This is why most architecture students using digital software generate interesting forms without knowing how to resolve issues related to the planimetric organization of the project.

Now how does Semper's theory of architecture contribute to a critical understanding of architecture and capitalism? In addition to technical innovations, the age of Modernity inaugurated a crisis that relates to the historicist attempt to establish a coherent relation between style and the conditions of a given age.²⁷ There were two particulars to the crisis unfolding during the nineteenth century: on the one hand, the condition of Modernity introduced tangible fragmentation at both subjective and objective levels. Related to this development, and on the other, hard to grasp in its expected totality was the *Zeitgeist* of Modernity and its full impact on architecture. Still, among contemporary architectural treatises addressing the notion of style, Semper's architectural theory has drawn renewed attention.²⁸ This interest has to do with the German architect's discourse on style, which is not articulated in reference to type or origin. Even though Semper pays homage to Durand's discourse on type, he takes issue with him on two accounts: firstly, that Durand's audience were students of the Ecole Polytechnique and not artists; and, secondly, that Durand aligned various types to each other in mechanical ways, rather than “showing the organic laws by which they are connected together.”²⁹ According to Semper, style is the result of a mathematical equation made up of various coefficients.³⁰ These include variables such as place, climate, material, skills and culture. Thus Semper differentiated the Egyptian Situla from the Greek Hydria in reference to their use – i.e. catching running water – and the way they were carried: whereas the Situla was shaped to catch water from the Nile, and carried on yokes, the Hydria was shaped to collect water from a fountain and carried on the head.³¹ Semper then provides a detailed explanation of the shape and decorative elements of each vessel accordingly. In the same text, he associates the Situla with Egyptian institutions, the “first principle of which was stability.” More radical is Semper's claim that motifs used in architecture were first originated in the four industries of textiles (enclosure), ceramics (the hearth), carpentry (the roof), and masonry (terrace making). Claiming that the “laws of beauty and style” in architecture “have their paragons in those which concern industrial art,”³² he underlined the two variables that influence the formation of style the most. We are reminded of those exigencies of the work that relate to the laws of nature and to necessity. Semper also mentions external factors that influence the performance of the work. His is nothing short of a modernist theory of architecture, where disciplinary themes are constantly recoded with reference to techniques developed in various industries as capitalism moves from one state of technical reproducibility to another.

In conclusion, what remains problematic in Semper's theorization of architecture is aesthetics. Aware of the correspondence between beauty and style, Semper purposely avoided discussing the issue of aesthetics when the body and historical types are both brushed aside from the organic correspondence he perceived between the art-form and the core-form. Even though he made associations between the culture of building and other artistic forms, the issue of aesthetics in architecture needs to be critically addressed today more than ever, when the cultural is woven into the spectacle produced by late capitalism. If Semper attempted to provide a sense of organic continuity with the received culture, the situation, since the post-war era at least, has drastically transformed in favour of an industrially ready-made aesthetics that debunks all institutions except those in direct relation to the institutions of power. What then is the point of recalling Semper in the age of digital reproducibility? The radical strategy implicit in Semper's theorization of architecture allows us today to historicize architectural ideology: to demonstrate the ways that parametric design represents the aesthetic of spectacle as natural, and this in reference to the concept of theatricality central to Semper's tectonic discourse.

Endnotes

- 1 For the architectural implications of this development see Hal Foster, "Image Building," *Artforum International*, 43, 2 (October 2004): 270-273, 310-11.
- 2 On this subject see Gevork Hartoonian, "In What Style Could They Have Built?" *Fabrications*, 17/2 (2007): 72-91.
- 3 For a classical text discussing these authors, see Joseph Rykwert, *The First Moderns: The Architects of the Eighteenth Century* (Cambridge: MIT Press, 1983).
- 4 Aldo Rossi, "An Analogical Architecture," in ed. Kate Nesbitt, *Theorizing Architecture Theory, 1965-1995* (New York: Princeton Architectural Press, 1996), 348.
- 5 Aldo Rossi, *A Scientific Autobiography* (Cambridge: MIT Press, 1984), 54.
- 6 Aldo Rossi, *A Scientific Autobiography*, 16.
- 7 Peter Eisenman, "Introduction," Aldo Rossi, *The Architecture of the City* (Cambridge: MIT Press, 1982), 5.
- 8 For an extensive elaboration of this aspect of Semper see Gevork Hartoonian, *Ontology of Construction* (Cambridge: Cambridge University Press, 1994).
- 9 I am benefiting from Manfredo Tafuri, *Interpreting the Renaissance: Princes, Cities, Architects*, trans. Daniel Sherer (New Haven: Yale University Press, 2006), 12.
- 10 Colin Rowe, "Chicago Frame," *The Mathematics of the Ideal Villa and Other Essays* (Cambridge: MIT Press, 1982), 90.
- 11 Daniel Sherer, "Fragments of the Modern," *Art Journal*, 2, 4 (winter 2003): 108-110. On another occasion I have extensively demonstrated the differences between these two buildings with reference to their spatial and planimetric organizations, see Gevork Hartoonian, "Can the Tall Building Be Considered Artistically?" in ed., Xing, R. Francis-Jones, van der Plaats, and L. Neild, ed., *Skyplane* (Sydney: UNSW Press, 2009), 96-102.
- 12 Colin Rowe, *The Mathematics of the Ideal Villa*, 94.
- 13 On sculpted tectonics and Brutalism see my "Material matters – if only for the look of it!," in ed. Sandra Karina *Materiality and Architecture* (New York: Routledge, 2016).
- 14 On the differences between European and American architects' take on tall building see Manfredo Tafuri, "The New Babylon: The 'Yellow Giants' and the Myth of Americanism," in *The Sphere and the Labyrinth* (Cambridge: MIT Press, 1987), 150-171. Also see Marco Biraghi's insightful take on the same subject in *Project for Crisis: Manfredo Tafuri and Contemporary Architecture* (Cambridge: MIT Press, 2013), 145-172.
- 15 Sigfried Giedion, *Space, Time, and Architecture* (New Haven: Harvard University Press, 1976), 387.
- 16 Anthony Vidler, "After the Event," *The Architectural Review*, (Sep. 2014): 236, 1411, 87.
- 17 See the chapter on Bernard Tschumi in Gevork Hartoonian, *Architecture and Spectacle* (London: Ashgate Publishing Limited, 2013).
- 18 Colin Rowe in the above cited references picks up this subject in two essays entitled "Neo-Classicism and Modern Architecture," I, and II respectively, 119-158.
- 19 Gevork Hartoonian. "Mies van der Rohe: The Column and Wall," in *Ontology of Construction* (Cambridge: Cambridge University Press, 1993), 68-80.
- 20 Robin Evans, *Translation from Drawing to Building and Other Essays* (Cambridge: MIT Press, 1997), 239-240.
- 21 Sherer, "Fragments of the Modern," *Art Journal*, 108-110.
- 22 Hartoonian, "In What Style Could They Have Built?" 72-91.
- 23 <http://www.archdaily.com/448774/heydar-aliyev-center-zaha-hadid-architects/> (Accessed Nov. 7, 2014).
- 24 Sherer, "Fragments of the Modern," *Art Journal*, 108-110.
- 25 Stanford Kwinter, "What Lies Beneath," where the author reviews Cecil Balmond's *Solid Void* exhibition. <http://archpaper.com/news/articles.asp?id=3183#.VFxJ1r75nww>. (Accessed Nov. 7, 2014).
- 26 I am following Razmig Keucheyan's summarization of Antonio Negri and Michael Hardt's notion of "cognitive capitalism." See Keuchyan, *The Left Hemisphere* (London: Verso Books, 2013), 91-94.
- 27 On this subject see Mari Hvattum, "Crisis and Correspondence: Style in the Nineteenth Century," *Architectural Histories*, 1(1): 21, 1-8.
- 28 Farshid Moussavi, *The Function of Style* (Cambridge: Harvard University GSD, Actar Publishers, 2015), 12.
- 29 Gottfried Semper, "London Lecture of November 11, 1853," *RES: Anthropology and Aesthetics*, 6 (Autumn, 1983): 9.
- 30 Gottfried Semper, "London Lecture of November 11, 1853," 11.
- 31 Gottfried Semper, *Der Stil*, trans. Harry F. Mallgrave (Los Angeles: The Getty Research Institute Publications Program, 2004), 468.
- 32 Gottfried Semper, "London Lecture," 9-10.