Surficial Architecture:
Gottfried Semper and Contemporary Surface-play

S. Yahya Islami

The University of Edinburgh (UK)

The following text aims to understand Gottfried Semper's theories as highly important and relevant to the current architectural developments. Inspired by the ancient buildings of 'the East,' Semper formulated a theory of architecture through a horizontal cross-cultural blending between already matured systems and in so doing, afforded creative theoretical leaps. This essay aims to understand contemporary architecture in the light of Semper's theories, proposing that the twenty first-century modernity is returning to a greater appreciation of surface-play as put forward by Semper in the nineteenth century.

> *Every artistic creation, every artistic pleasure presupposes a certain carnival spirit, or to express myself in a modern way – the haze of carnival candles is the true atmosphere of art.*[1]

ORNAMENT AND SURFACE-PLAY

Joseph Rykwert's essay entitled 'Ornament is no Crime'[2] offers an insight into the development of attitudes towards ornament and surface-play in the past century. For him, the great divide between surface ornament and structure started when architecture moved away from imitating culture and nature, to not imitating anything at all. Thus architecture became 'dressed up construction.'[3]

For Rykwert, this change was a result of a much wider development in society instigated by advances in industrial technologies. Young artists were gradually moving away from their guilds and assembling in academies, but more importantly, in schools, the artists 'shifted their attention from creating objects intended to edify, move or excite the spectator, and concentrated on an authentic expression of individual vision, in which the artist's relation to the spectator *through* the object became increasingly less important…'[4]

Thus architects separated into two separate groups who developed different understandings of beauty and decoration.[5] On the one side, there were those who strove for efficiency, clarity, simplicity and economic viability, whilst the other promoted a much more poetic approach to architecture and its surfaces. Semper's theories represent an attempt to reconcile the differences between the two different views of ornament, in order to arrive at holistic way forward.

Semper's theories were highly influential in the nineteenth century as exemplified by early modernists like Otto Wagner and Hendrik Petrus Berlage. Wagner's symbolic and constructive wall claddings for example, or the textile-like 'curtain wall' of Adler and Sullivan's Guaranty Building, are built examples of Semper's teachings. Yet, much of Semper's ideas became neglected with the rise of Modernism.

The Postmodern movement of the '70s and '80s brought about a rethinking of the purism of Modernism. Robert Venturi's famous counter-quote to Mies' 'Less is more', 'Less is a bore' sought to reintroduce diversity and visual complexity into architectural design. He asserted that most modernist buildings are 'ducks', i.e. buildings in which the symbolic form is the organising principle of structure, volume and programme. What he proposed as a way forward was a 'decorated shed', in which the shelter is dictated by utilitarian considerations, while the symbolic bits and pieces are stuck on to the front: facades, billboards or signs.[6]

However, in recent times, architects have fused together the 'shed' with the 'decoration'. As a result of a cooperation between computer technicians/artists and architects, buildings are now reminiscent of the pre-industrial times when the architect and other artists worked together to produce decorative works of *art-itecture*.

'Dressed-up construction' is now mutating into 'tattooed skins' and 'communicative [sur]faces.' Architecture has returned to imitating nature, but aided with much more advanced technologies. Greg Lynn writes:

> *At the present moment modernism has the ability to carry both radical and conservative architectural and cultural messages. Today evolution and mutation are the calls of the day and a strong disjunctive break is not feasible. Radicality and difference have been inscribed within logics of assemblage by thinkers like Deleuze. History is now much more vulnerable to uses for which it was not intended.*[7]

SEMPER'S WOVEN SURFACES

> *(…)woven fabrics almost everywhere and especially in the southern and warm countries carry out their ancient, original function as conspicuous spatial*

dividers; even where solid walls become necessary they remain only the inner and unseen structure for the true and legitimate representatives of the spatial idea: namely, the more or less artificially woven and seamed-together, textile walls.[8]

Gottfried Semper (1803-1879), was a highly respected figure in the last decades of the nineteenth century. His work had embellished the cities of Dresden, Zurich, and Vienna, however, his theoretical writings are his most significant contribution to architecture.

Semper's theory and practice can be construed as a desire to return to a decorative textile architecture of festivity and the artifice of the *screen*. In a passage of his main work on style, Semper traces the origin of monumental architecture not to the simplicity of a primitive hut, but to the surficiality of the festive celebration and the stage apparatus 'covered with decorations, draped with carpets, dressed with boughs and flowers, adorned with festoons and garlands, fluttering banners and trophies.'[9]

Semper's theories are a result of the influences and discoveries of his time, acting upon his own creativity and desire to understand what he regarded as the 'fundamentals of architecture.' The numerous discoveries of the ancient world in the late eighteenth century, had sparked off a controversial debate about the origin of art and architecture and its development in history. This was a time when artists and architects alike were introduced to new ideas about the origins of their designs, which led to a fruitful period of theoretical creativity. The new archaeological discoveries had the powerful effect of diluting the belief that Greek civilisation was the cradle of art and culture, resulting in a more open-minded approach to design, culture and history. Semper, formulated many of his theories during this time, when new discoveries of other civilisations provided a rich source for cultural and artistic inspiration.

However, this fascination with the other was relatively short lived. Though Semper's theories were highly influential in the nineteenth century, the rapid rise of the capitalist machine meant that they were quickly replaced with the efficient, futuristic dogmas of Modernism. Semper's passionate beliefs about the importance of colour and surface decoration as the essence of individual and cultural expression, soon became associated with superficiality and artistic confusion.

His theories of the origins of art and architecture and his belief in the interconnectivity of different cultures, eventually dissolved into what became known as the International Style, which instead of allowing for a unity amongst differing designs, pushed forward the ideology of *uniformity*. However, Semper's theories became once again popular, amongst later designers of twentieth century who opposed the dogmas of Modernism.

COLOUR-SCAPES

Semper developed his ideas based on the findings before him. Previously, in the early 1750s, the rediscovery and recording of Greek monuments, had produced an artistic view in which Greece superseded Rome as the model for the classical ideal. This meant that the white monuments of ancient Greece were seen as superior to the highly decorative and coloured remains of ancient Rome, thus forming the theoretical basis for Neo-classicism. However, this 'white' view of architecture was soon challenged in the first few decades of the nineteenth century, as a result of a growing interest in the study of ancient texts, as well as new archaeological discoveries of colour applied to ancient works.

Semper was amongst those who believed that a deeply rooted appreciation of colour was paramount to Greek artistic thinking, but he further believed that this propensity revealed something of fundamental importance to all artistic activity regardless of cultural heritage.[10] As pointed out by Harry Francis Mallgrave, (Semper's biographer and first translator into English) the key figures in the polychromy debate who had a considerable influence on Semper, were Quatremère de Quincy and Jacques-Ignace Hittorff.[11]

Semper developed Quatremère's polychrome theory[12] to reveal something about the nature of artistic design in history, accepting its diversity across different nations, but also emphasising a unity of motives or 'elements' that form them. For Semper, Greek art and architecture became the result of a gradual process of learning and absorption from other ancient civilisations, and he criticized those who considered Greek art and architecture as white or pure.[13]

Thus, while promoting a more tolerant and critical approach to notions of style, Semper recognised and emphasised the role of colour and surface-play by

associating the essence of monumental architecture to the festival apparatus made up of textiles hanging off the supporting structure. Therefore, the visible textile and the decorative paint was for him, the essence of architectural enclosure and therefore, a very important element of architecture.

THE ESSENCE OF THE WALL

The Four Elements of Architecture is a two-part work that Semper composed in the last months of 1850. The first half of the work is concerned with polychromy. However, the most important section of this work arrives in the fifth chapter (with the same title), in which Semper presents 'the four elements' as the generators of architectural form: hearth, roof, enclosure (wall), and mound. It should be noted that he does not use the term 'elements' as material elements or forms, but as 'motives' or 'ideas', or as technical operations based in the applied arts.

For Semper, the first step in the making of architecture started from the 'mound' around which the other three elements were grouped. Then according to various influences like climate, natural surroundings, social relations, and different racial dispositions, the different elements of architecture developed at various rates, some becoming more developed while others receded into the background. Soon, various technical skills became associated with these elements, for example, connected with the idea of roofing, was carpentry or tectonics, and associated with the hearth was ceramics and metal-works, whilst water and masonry works became associated with the mound.

However, Semper's most important theory involved the element of enclosure, which he associated, with the 'art of the wall fitter (Wandbereiter), that is the weaver of mats and carpets.'[14] Semper admits himself that his statement 'may appear strange' but maintains his theory of the woven surface as the essence of the enclosure or the wall: '... I assert that the carpet wall plays a most important role in the general history of art. ...Wickerwork, the original space divider, retained the full importance of its earlier meaning, actually or ideally, when later the light mat walls were transformed into clay tile, brick, or stone walls. Wickerwork was the essence of the wall.'[15]

As Semper mentioned himself in a footnote to his text, the German word Wand (wall) and the word Gewand

(dress) 'acknowledge their origin' and are derived from a single root. He therefore argued that for this reason, the essence of the wall lay in the woven material, or the carpet.[16] Semper went further to argue that later technical arts associated with the wall or the enclosure, all imitated the system of the hanging carpet, and that the Assyrians, with their richly coloured walls and carpets remained the truest to the primordial motive of the wall.[17]

What is important about Semper's theories, is their influence on our view of the relationship between surface (cladding) and structure in architecture. His placement of the essence of the wall in the richly coloured, woven surface of the carpet with its 'splendid colours' and 'fantastic pictures'[18], presents an understanding of the wall not as a formal element, nor as a mere space divider, but as a surficial space divider rich with meaning and symbolic imagery.

SURFACE / STRUCTURE

As mentioned previously, Semper focused more heavily on the idea of 'enclosure' and the textile wall, which eventually led to his development of the idea of 'dressing' (Bekleidung). Relying on ethnographic accounts, he emphasised that the invention of the woven wall mats hung vertically, came before clothing. In his own words, '[t]he art of dressing the body's nakedness (if we do not count the ornamental painting of one's own skin discussed above) is probably a later invention than the use of coverings for encampments and spatial enclosures.'[19] With this statement, he not only emphasised the development of textiles as more important than a technique to cover the body, but also argued that the woven surface marked the very essence of architecture: '...the beginning of building coincides with the beginning of textiles.'[20]

As a result, structure that served to hold, secure or support this spatial enclosure became a secondary element in relation to space or the division of space. Semper thus concluded that structure is foreign to the original architectural idea and never a form-determining element, and by this proposition, he shifted the wall from its weight-bearing capacity as 'mauer' to that of the 'wand', the partition, or the screen.

For Semper, the development of the wall as we know it today, was a response to the need for warmer, more solid, or more durable support behind the textile

surface. Later, this mode of operation was replaced by other 'surrogate dressings,' such as stucco, wood and metal plaques, terra cotta facings, and alabaster and granite panelling. However, in all cases the motive and spatial essence of the wall was enacted by the dressing and not by the supporting and contingent wall-prop behind:

> Hanging carpets remained the true walls, the visible boundaries of space. The often solid walls behind them were necessary for reasons that had nothing to do with the creation of space; they were needed for security, for supporting a load, for their permanence, and so on.[21]

In this regard, the Assyrian alabaster bas-reliefs provided the key components to Semper's theory, since the figures chiselled in the gypsum, he argued, imitated the style of the textile dressings that preceded them. Such a reading allowed Semper to conclude that the Oriental system of dressings and polychromy was the inspiration for the painting of walls in Greece. With this, Semper posited a radical theory that Greek polychromy found its historical genesis and meaning in the primal act of carpet making, the art of the 'wall fitter'.[22] Thus, for Semper, the perfection of the wall, as an element (idea or motive) of architecture, took place in ancient Assyria and Persia, cultures that were famed for their colourful tapestries.

Ultimately Semper's emphasis was on the rich, spirited and ornamented surface of architecture over its structural elements. With this he highlighted the importance of surface-play in the architectural language:

> My main interest in introducing these examples is to draw attention to the principle of exterior adornment and dressing of the structural scaffolding that becomes necessary with improvised festive structures, and that always and everywhere conveys by itself the nature of the thing. From this I deduce that the same principle of veiling structural parts, in addition to the monumental presentation of tent coverings and carpets stretched between the structural members of the prototypical scaffolding, must also seem to be equally natural where it is manifested on early monuments of architecture.[23]

Semper proposed a theory of architecture, in which ornament and surface decoration was seen as the essential act of architectural creation, rather than an

act of frivolous superficiality. However, he was against false pretence and did not approve of making materials look like other materials. For him, honesty to materials and their statical laws was paramount, yet, it did not stop the surface-play of colour and pattern:

> Brick should appear as brick, wood as wood, iron as iron, each according to its own statical laws. This is the true simplicity on which we can let our fondness for the harmless embroidery of decoration run free. Wood, iron, and every metal need a coating to protect them against the corroding effects of the air. This need can be fulfilled quite naturally, in a way that contributes at the same time to their embellishment. Instead of a dull coat of paint we could select a pleasant diversity of colour. Polychromy thus becomes natural and necessary.[24]

RETURN OF SURFACE-PLAY

The architecture of modernism, governed by advances in steel construction and the necessity to clad such materials with protective layers, led to a separation of surface and structure. The result was the development of a new theoretical narrative which not only separated structure from surface, but furthermore, gave priority to form over surface-play and ornamentation. Of course, Mark Wigley and others have argued that the white surfaces of the International Style could be seen as a thin dressing for an otherwise simple constructions and in so being, were decorative and very much related to surface. However, the white paint of the International Style as well as the theories of Loos and Mies and other modernists, condemned surface-play and as a result colour and pattern became frowned upon, since they distracted the viewer from pure form. Therefore, monochromy, formal simplicity, and structural honesty became more important than polychromy, ornament, and surface-play.

Thus, Modernism problematised the relationship between surface and structure, ornament and form, surface-play and formal-truth. Of course, within Modernism there were many architects who maintained a link between these ideas, and challenged the rationale of the International Style. But on the whole, the theoretical movement of Modernism in early twentieth century resulted in more emphasis on honesty and on economy which meant that 'unnecessary' things like surface-play (decoration, ornamentation, colour, pattern) became out-with architectural design and

thinking.

As is often the case with theoretical movements in art and architecture when one ideology pushes forward to one extreme, there is always another which pushes forward in the opposite direction. In the case of Modernism, the oppositional force started with what became known as Postmodernism and which transformed into the digital architectures of our current time.

However, in the last two decades, the discussion of surface has once again gained greater significance. Improvements in computer technologies together with developments in modeling software and construction techniques, have allowed architects to exploit the power of the computer as a design tool, which enables them great precision and speed in the design and manufacture of buildings.

Recently, new digital modeling tools, like FormZ, Maya, 3D Studio Max and Houdini, have enabled architects and designers to introduce new design processes into their work. There are three different methods for creating objects in the virtual world of the computer, but almost all of them are ways of creating surfaces to which are assigned different colours, textures and other characteristics. In the computer world, it is the surfaces that define an object and these can be created using different processes such as Extrude, Skin, Rail, Revolve and Sweep from elements such as NURBS, Bezier or even polygonal lines.

These new techniques have paved the way for different design processes followed by their correspondent theories. For example Greg Lynn, Marcos Novak, Bernard Cache and others have experimented with Topological architecture (or Hypersurface Architecture) which is highly reliant on the computer's ability to manipulate non-uniform B-Spline curves and the surfaces that can be extruded from them. Blob Architecture (or Metamorphic Architecture) is another example which exploits the ability to create complex surfaces using Metaballs of differing mass and attraction that can be connected together to create complex surfaces and therefore complex forms.

The ability of the computer to map out these complex surfaces through its inherent formulaic operation, and its ability to reproduce them using the transfer of data from the modeling software to construction

robots, has allowed architects to exercise more play in the generation of surfaces and forms in architecture. Polygonization and triangulation are methods by which these complex surfaces are simplified for mass production often evoking a sense of ornamental complexity.[25] Thus the necessity of construction results in surface-play which introduces variety and complexity to the cladding surfaces, whilst the supporting structure is responsible for carrying the burden of gravity and practical requirements. Once again the structure is assuming a supporting role for the much more playful surfaces of the building.

As a result of these new design techniques attitudes towards surface-play and ornament has changed whilst new technologies have allowed surface-play to become economically viable. Robotics have allowed surfaces to become dynamic. Projects like the Aegis Hyposurface (by dECOi Architects) demonstrate the ability to control the façade using computers making 'the cladding' more than a superficial dressing, but a construction of its own. In this sense the architectural 'surface' can evolve beyond a decorational screen and assumes the role of an organ. It can become a communicative skin.[26]

New construction materials, like plastics, polymers, carbon fibers and electroluminescent paints have allowed a return to colour, pattern and surface expression. Los Angeles-based Peter Testa Architects have used Semper's concept of woven textile walls to create a highly inventive structural solution to architectural construction. Their project Carbon Tower, a forty storey high-rise prototype, is produced using a software program, Weaver, written by the firm specifically to weave together ultra-light composite metals into a fabric-like material that does away with the need for a core foundation, resulting in a building whose façade is simultaneously a self-contained support.[27]

From an ornamental point of view, the digital screen, with its fleeting images and its colourful patterns, is in many ways, similar to the woven surfaces of Semper's textile walls. An LCD display is made up of small picture elements (pixels) put together to form patterns which not only have a decorational quality but also communicate meaning, albeit continuously changing ones.[28] 'The mechanical movement of neon lights is quicker than mosaic glitter, which depends on the passage of the sun and the pace of the observer;'[29]

nevertheless, they are similar surface-play, rich in meaning and expression.

Semper, deconstructed a view of architecture where form and structure were dominant, replacing it with one in which surface-play became important. In this way, he provoked an understanding of architecture as taking place at the front, on the face, and on the surface of architecture. He advocated the use of colour and pattern as the joy of architectural creation.

The Industrial revolution and the architectural theories associated with it, sought to create an architecture which was economical, practical and universal. An architecture which could be created easily, cheaply and effectively. This resulted in a preference for formal structure over surface-play.

However, new digital technologies and construction techniques have brought about a continuation of the Semperian delight in surfaces. E-paper, digital screens, printed concrete, composite polymers and dynamic cladding systems allow us to relish our appreciation of architecture at the surface level. The greater interaction of architecture with the digital media has allowed for a return to the playful use of colour, light and pattern in architecture, which bears great resemblance to ideas put forward by Semper and his contemporaries in the nineteenth century.

Thus, surface in contemporary architecture can be viewed as more substantial than superficial: it can be seen as surficial. What is of great importance is an interdisciplinary appreciation of architecture and the acknowledgment of surfaces as bearers of meaning and as places for communication and exchange.

NOTES TO THE TEXT

[1] Semper, Gottfried, 'Style in the Technical and Tectonic Arts or Practical Aesthetics' in The Four Elements of Architecture and Other Writings, Cambridge: Cambridge University Press, 1989, p. 257.

[2] Rykwert, Joseph, 'Ornament is no Crime' in The Necessity of Artifice, Ideas in Architecture. London: Academy Eds., 1982, pp. 92-103.

[3] Ibid. p. 92

[4] Ibid. p. 93

[5] According to Rykwert, architects separated into two groups of the 'poets' and the Polytechnicians' of which the latter

became more widespread in the later years of the nineteenth century.

[6] See Venturi, Robert, and Museum of Modern Art (New York N.Y.). Complexity and Contradiction in Architecture. 2nd ed. London: Architectural Press, 1977 and Venturi, Robert, Denise Scott Brown, and Steven Izenour. Learning from Las Vegas: The Forgotten Symbolism of Architectural Form. Cambridge, Mass.: MIT Press, 1977.

[7] Lynn, Greg. 'The Structure of Ornament.' In Digital Tectonics, edited by David Turnbull and Chris Williams Neil Leach, pp. 63-68: Wiley Academy, 2004, p. 68

[8] Semper, Gottfried. The Four Elements of Architecture and Other Writings, Res Monographson Anthropology and Aesthetics. Cambridge: Cambridge University Press, 1989, p. 255

[9] Semper, Gottfried. The Four Elements of Architecture and Other Writings, Res Monographson Anthropology and Aesthetics. Cambridge: Cambridge University Press, 1989, p. 256

[10] Many of Semper's theories on polychromy were a result of the debate which had begun at the same time amongst his fellow colleagues. His move to the city of Paris in early nineteenth century was a fortunate one, since it placed him within a hotbed of new architectural theories. In the 1820s Paris was witnessing the opening stages of an architectural debate on polychromy in classical antiquity, the outcome of which contributed to the collapse of Napoleonic Classicism.

[11] See Harry Francis Mallgrave introduction to The Four Elements of Architecture, Cambridge University Press, 1989, p. 13

[12] The revolutionary theoretical work of Quatremère de Quincy challenged the traditional view of colour in antiquity as something that could be associated with periods and places of artistic immaturity or decadence. In his reconstruction of the celebrated colossal statues of Zeus and Athena executed by Phidias in gold and ivory, he advanced the idea that the high regard for chryselephantine works in antiquity was owing not so much to their material or illusional value, but to the fact that they exploited the non-formal element of Greek artistic personality, namely, colour. The historical models for gold and ivory statuary, he argued, were found in the primitive, wooden idols of early Greek times painted and dressed with actual materials. The art later developed into sculpture assembled by worked pieces, usually metal, and the use of colour was continued to protect the material against the effects of the weather and time, to correct material deficiencies, and later to embellish large monotonous surfaces. By the time of Pericles the use of colour had become an indigenous part of the Greek artistic outlook, symbolically fixed and consecrated by the religious tradition and by the nature of the sculptural technique. (See Harry Francis Mallgrave introduction to The Four Elements of Architecture, Cambridge University Press, 1989)

[13] Semper, Gottfried, 'On the Manner in Which Style Becomes Specialized and Developed in the Dressing (Bekleidung) in Different Nations Throughout the Course of Cultural History' in The Four Elements of Architecture and Other Writings, Cambridge: Cambridge University Press, 1989, p. 247.

[14] Semper, Gottfried, 'The Four Elements of Architecture' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 103.

[15] Ibid. p. 103-104

[16] Ibid. p. 104

[17] See pages 104-5

[18] Semper, Gottfried, 'The Four Elements of Architecture' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 105.

[19] Semper, Gottfried, 'The Most Primitive Formal Principle in Architecture Based on the Concept of Space and Independent of Construction. The Masking of Reality in the Arts.' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 254

[20] Ibid.

[21] Semper, Gottfried, 'Style in the Technical and Tectonic Arts or Practical Aesthetics' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 104.

[22] Ibid. p. 258.

[23] Semper, Gottfried, 'Style in the Technical and Tectonic Arts or Practical Aesthetics' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 257.

[24] Semper, Gottfried, 'Preliminary Remarks on Polychrome Architecture and Sculpture in Antiquity (1834)' in *The Four Elements of Architecture and Other Writings*, Cambridge: Cambridge University Press, 1989, p. 48.

[25] See Aegis Hyposurface for polygonization and Daniel Libeskind's competition entry for the Royal Albert Museum, London in which he proposed a 'fractal cladding' for the surfaces of the building. See also Frank Gehry's Music Experience Project, in Seattle, or the Guggenheim Museum in Bilbao where the outside cladding is constructed using small metal plates giving a shimmering surface to the building.

[26] See Goulthorpe, Mark. 'Aegis Hyposurface: Autoplastic to Alloplastic.' *Architectural Design*, vol. 65, 1999.

[27] See http://www.peter-testa.com/

[28] The ornamental qualities of the digital screen is most evident in Time Square in New York or Piccadilly Circus in London where the big advertising screens give a new life to the buildings in the square.

[29] Venturi, Robert, Denise Scott Brown, and Steven Izenour. *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*. Cambridge, Mass.: MIT Press, p. 116.