RE-PROBLEMATIZING THE CONTEXTUALISM-AUTONOMY DEBATE IN ARCHITECTURE WITHIN THE FORMAL LOGIC OF COMPUTATIONAL OPERATIONS

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ABSTRACT

RE-PROBLEMATIZING THE CONTEXTUALISM-AUTONOMY DEBATE IN ARCHITECTURE WITHIN THE FORMAL LOGIC OF COMPUTATIONAL OPERATIONS

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Technological innovations in the field of information and communication have transformed the nature of the spatial realm. The spatial realm has been engaged with the virtual realm, where a new approach has been mandatory for a possible and productive interrelation between the two. On the other hand, new technologies have affected architectural drafting, representation, construction and most significantly architectural design to generate remarkable conveniences and unnoticed interfaces for architects. New technologies offer a common arithmetical medium where a new augmented relationship between sciences and architectural design is enabled. All these transformations prepared the basis for a redefinition and reevaluation of the surrounding realm that is referred to as the context of architectural design. The recurrence of contextualist and de-contextualist debates and attitudes show that context is dealt with as a multi-layered concept in architecture.

Within all above mentioned transformations, the issue of contextualism in architecture is reopened up where the definition of context is seen to be in a process

of constant renovation, inheriting the complexities new technologies and design methods based on interdisciplinarity have brought. This thesis looks into this transformating status of the concept of context and argues for its productivity in architectural design.

Keywords: Contextualism, Autonomy, Computational Design, Techno-Science, Interdisciplinarity

ÖZ

MİMARLIKTA BAĞLAMSALCILIK-ÖZERKLİK TARTIŞMASININ HESAPLAMALI MİMARLIĞIN BİÇİMSEL MANTIĞIYLA YENİDEN DEĞERLENDİRİLMESİ

Okten, Deniz
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Bilgi ve iletişim teknolojilerindeki yeniliklerin uzamsal ortamı ve mimarlığı dönüştürdüğü gözlenmektedir. Uzamsal ortam sanal ortam ile bütünleşirken, aralarındaki ilişki ve iletişimin olası üretkenliğinin araştırılması gerekli gözükmektedir. Diğer, bir taraftan yeni teknolojiler mimari çizim, yapı ve en önemlisi mimari tasarım alanlarında mimarlara daha önceden fark edilmemiş arayüzler ve kolaylıklar sağlamaktadır. Yeni teknolojilerin sağladığı ortak aritmetik platform, mimarlık ve diğer bilimler arasında yeni ve çoğalan bir ilişkinin kurulmasını sağlamaktadır.

Tüm bu değişim ve dönüşümler, mimarlıkta bağlam olarak adlandırdığımız etrafımızdaki uzamın yeniden tanımlanması ve değerlendirilmesi gereğine işaret eder. Mimarlıkta bağlamsalcılık ve buna karşı oluşumlar bağlamı çok katmanlı olarak tanımlarlar. Ancak, bu çalışmada, bahsedilen gelişme ve dönüşümlerle, önceki tanımların da devingen bir dönüşüm içinde olduğu savunulmakta ve bu tartışmaya temel hazırlayacak olan bağlamsalcılık konusu yeniden açılmaktadır. Bu

tez, bağlam kavramının dönüşümünü ve mimari tasarım için açabileceği olasılıklar ve verimlilikleri tartışmaktadır.

Anahtar sözcükler: Bağlamsalcılık, Özerklik, Hesaplamalı Tasarım, Tekno-Bilimler, Disiplinlerarasılık

To Gül OKTEN

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CHAPTER 1

INTRODUCTION

The issue of contextualism holds a unique position within the theory and practice of architecture. The notion of context, that may be defined as the natural, cultural and historical conditions existing in the surrounding realm,[1] has been the concern of diverging debates in the architectural agenda of the 70s. Some of these debates may be mentioned to conceive of contextualism as the focal concern of architecture. Once, the term context was utilized for reflection on existing historical and cultural conditions in architectural design, the movement of Critical Regionalism flourished between the late 60s and late 80s can be mentioned within this context. Then, the ancient meaning of context, the Genius Loci has been dominating the discourse. On the other hand, concurrently with its emphasis by Regionalists and a Genius Loci symbolism, context was once more at the center of the debate, however as a negative concept within the course of autonomy debates in architecture. The autonomy discourse expected the disciplinary potential to replace the intrusion of environmental concepts through de-contextualism. The stimulating notion context has lost its territory within the discourse of architecture for a long time following late 80s. Until the debates of "autonomy" in the late 80s, that reinforced the polar characteristic of the issue of contextualism together with "critical regionalism," there has hardly been any publication or conference focusing on the socio-cultural and environmental aspects of architecture under a general discussion of contextualism. Despite the enchanting researches on ecological concern in architecture that rose with the problem of global warming, it has been a long time since the surrounding

[1] Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." *The Anti-Aesthetic: Essays on Postmodern Culture.* Ed. Hal Foster. Seattle, WA: Bay Press, 1983.

cultural, habitual and historical spheres are simultaneously considered as dynamics constituting and affecting the environment.

This unified definition of the environment - that is mentioned as context in architecture – seems to be re-evoked nowadays once more with the advent of new technologies. The issue of contextualism has reappeared due to changes in the surrounding realm caused by new technologies in information and communication. The reason that context as a multi-dimensional concept has been reawaken can be related to the multiple consequences that occurred in the environmental realm due to these technologies. The quality and quantity of transformations undergone in the socio-cultural, spatial and environmental spheres have led the architectural discipline, together with other fields, to question the definition of environment which is under a rapid transformation. In other words, with the advent of new technologies, the notion of context finds itself redefined with the concepts of speed, time and virtual environment that have invaded our contiguous realm. Among all the transformations caused by new technologies, those which have occurred in the fields of information and communication have changed the conditions and the nature of the spatial realm. Paul Virilio defines this new milieu stating that:

> It's a milieu…in which we participate only indirectly through the video-type machine after recording, through information science and robotized systems.[2]

As explained by Virilio, there have been critical changes in the way people perceive the spatial realm and in the relationship man establishes with it. Not only the concept of space, but the concepts of time and speed are changing, that cause a double transformation in this perception of context and its kinship with the spatial realm.[3] Virilio addresses this problem of engaging the new realm to architects who

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[2] Virilio, Paul. *Virilio Live.* Ed. John Armitage. London: Sage Publications, 2001. p 71.

[3] Ibid. pp. 69-99.

essentially construct that spatial realm.[4] Indeed, the discipline of architecture is closely related to new technologies and mentioned transformations, yet this kinship undergoes a double transformation; on the one hand due to the expansion of communication and information technologies, and on the other, by the ways these technologies engage with drafting, construction and most significantly design methods. Conversely, the two are closely linked to each other and generate the impetus of this thesis to reengage in a contextualism debate. In this study, the effect of new technologies on the spatial realm will be examined in terms of their reintroduction of the issue of context and contextualism in architectural discourse.

This study will try to explore the attempts that revitalize the issue of context and contextualism in architecture. These recent attempts are going to be traced back to the former concerns for context in architecture. The parallel and contradicting points between earlier and recent positions focusing on the issue of contextualism are significant for the purposes of this study that aims at introducing a redefinition of context. For the sake of that, former definitions and attributes of contextualism in architecture will be examined and compared throughout the study to comprehend how the idea of context has been object to transformation with respect to different architectural positions. Then how and why these approaches have altered will be explored with respect to the transformation of the surrounding realm with technological changes, but also and more significantly by the development of new design methods enabled by these technologies and transformations. The new definition and perception of context in architecture will be searched in recent positions that process the advent of new technologies in morphogenetic and biological studies in architecture, a position which distinguishes itself in its unfamiliarity with respect to the former definitions of context.

Actually, the consideration of the contextual inputs of the site and of the surrounding realm has always been a key issue in architectural theory and practice. Yet, it seems

[4] Ibid. p. 65.

to have existed certain ruptures and peak points in this kinship between the spatial realm and the issue of contextualism in the course of architectural theory. The study attempts to sketch a framework for the contextualism debate by dealing with differing yet chronologically and epistemologically attached attempts.

The concept of context will initially be defined with the notion of site, and in its connotation of "Genius Loci" to inherit its Latin origin denoting the distinctive spirit of a place[5] as it is widely referred by architects as a key element for design. Christian Norberg Schulz and his seminal work "Genius Loci: Towards a Phenomenology of Architecture" will be taken as the main basis to clarify this definitions of context in architecture.

In the early 70s, critical regionalism has been considered as a movement to revive the contextual input in the design process. It rather came as a critique of the Modern Movement and the latter's attempts to universalize a standard building typology to reject any historical or contextual input, such as International Architecture and CIAM. Kenneth Frampton and his essay "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" stands as the manifesto of this movement where culture and civilization are incessantly opposed to call for the significance of identity in architecture. The definition of context and ways of engagement with the surrounding realm will be compared to revivals of Genius Loci, in order to show the transformation undergone in the contextual agenda.

On the other hand, the debates on the autonomy of architecture have appeared almost concurrently with Critical Regionalism, that seemed to underestimate contextual concerns on behalf of a rejection of all elements external to an architectural syntax. Peter Eisenman and his experiences on Cardboard architecture construct the main basis of this debate while counter-arguments have been structured within the agenda

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[5] Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology of Architecture.* New York: Rizzoli, 1980. p. 5.

of the 70s by the journals Perspecta and Harvard Architecture Review. Though the contextual reference was expected to be neglected within the debate on autonomy, the discourse structured around the theme focused on the further definition of contextual ground and its validation in architecture.

The significance of these three positions in terms of a contextualism debate structures another axis of the thesis. The arguments constituted around the socio-cultural and environmental concern – whether it be the regional and historical inclination of critical regionalists or the formal and disciplinary reliance of autonomous architecture – will help to grasp that these theories ended up with vicious circles in terms of architecture's kinship with the surrounding realm. Critical regionalists forced the regional culture and historical possessions challenge universal techniques, whereas the defenders of autonomy in architecture underestimated the historical and cultural existence that constitutes the essentials of the spatial realm. Both theories contributed to binary oppositions such as cultural versus universal, autonomous versus dependent and form versus culture that have prevented the evolution of the issue of contextualism. It will be argued in this study that with expanding research methods enabled by new technologies, these binary oppositions are in a process of demolishment to open up the ground for the mutual treatment of environmental factors and formal methods.

Much related to this dichotomic structure of theory preventing reliable arguments, the debate of autonomy in architecture has lost its ground as well. After this unforeseen and problematic demolition of the ideal of an autonomous architecture, the issue of contextualism or decontextualism has lost territory in architectural theory for a long time. Either sympathy or apathy for the cultural, social, site specific or local inputs have hardly been appeared since late 80s. It may be asserted that this ignorance of the contextual agenda has ruled till the revival of the issue once more in Perspecta - the monthly publishing of Architectural Association – this time with the

title “Mining Autonomy.” [6] It is worth questioning why this context/autonomy issue has been reanimated after such a long interval. The initial declaration of the editors for the volume may be explanatory for that:

> New methods of architectural production (the realities of digital design, imaging and fabrication), growing environmental concerns and changing ideas about domesticity and urban space continually pose new questions to architecture.[7]

In fact, this revival of the environmental concern mentioned above is not only related with the new methods of architectural production, but also with the technological developments changing the environmental conditions and in turn providing the new architectural methods mentioned. These technological developments will be studied in the last chapter in terms of their two-fold effect necessitating further attention to environmental concern.

It will be argued in the last section of this study that there has been a shift in the definition and perception of the surrounding environment, in other words, of context. Contextualization or decontextualization that may be inferred the former movements and approaches are invariably seen to posit a dichotomy, a dilemma between formal and environmental aspects of design. These two significant aspects of design – formal and environmental – are suggested to be mutually processed in new computational methods. The dichotomies created in the course of above mentioned approaches – Genius Loci, critical regionalist and autonomous – are asserted to be rethought and resolved by the computational approach that is made possible by new technologies and methodologies. The common platform enabled by these techniques will be presented as a possible overcoming of the context-project and cultural-universal dualities.

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[6] *Perspecta*. Vol. 33. Ed. Michael Osman, Adam Ruedig, Matthew Seidel, Lisa Tilney. 2002.

[7] Ibid.

At first the generative approaches to the techno-scientific paradigm will be studied to assert that new technologies aid architectural production not only for visualization, representation and construction but also for developing further design methodologies that will be briefly mentioned. Among them rather formal approaches will also be dealt with, that are asserted[8] to extend de-contextualization. Then, the conservative approaches shall be mentioned, that hold a critical standpoint to these new techniques. One of these critiques in relation to this design atmosphere is stated by Richard Francis-Jones:

> We have an overwhelming amount of information, space, stimulation, individualization and speed, but so little sense of being, community or place, and so little time.[9]

It may be asserted that the effort to attribute the electronic era as a cause for the urban chaos may be replaced by an attention to ongoing changes caused by these technologies and how to revolve them through productive new experiences in the spatial realm. Mark Wigley's essay "Resisting the City"[10] will be reviewed as one of the key essays on the criticism of the reactions towards the electronic era. Wigley is critical of the conception of the electronic era and the entire realm of innovative technologies as demolishing the city and its architectonic structure and he notes that this debate is prolonging without any revolutionary attitude or perspective change since the 60's. He argues that this dissolution of the physical existence of the city and its limits have been argued in various platforms for 40 years, yet the debates' reiteration on the same axis is irrelevant today. This thesis, parallel to Wigley's critique, will look into the generative paradigm within the techno-scientific

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[8] Leach, Neil. *The Anaesthetics of Architecture.* London: The MIT Pres, 1999. p viii.

[9] Francis-Jones, Richard. "The Impossibility of Slowness: A Note on Globalization, Ideology and Speed in Contemporary Architecture." *10x10:10 Critics*. Phaidon Pres, 1994. p. 433.

[10] Wigley, Mark. "Resisting the City," *Transurbanism*. Ed. Arjen Mulder Rotterdam: V2_Publishing/NAI Publishers, 2002. pp 104-120.

transformations in order to detect the transformations it brings into architectural design and the contextual agenda.

Two main approaches within the generative paradigm will be explored to establish historical continuities and discontinuities within the course of the contextualism debate in architecture. At first, the design methods generated in relation to the transformation of formal vocabulary by new techniques will be defined. Greg Lynn and his approach to "animate form" will be exemplified in the "blob architecture" evoked in the interface of new technologies and architectural design. These approaches that receive critiques on overemphasizing the formal aspect of architecture will be explored in relation to the autonomous approaches in the 70s. The evolution of design methods in comparison to autonomous approaches will be searched and decontextualism related with the growing focus on formal explorations in the virtual realm will be argued.

Then, rather contextualist attitudes will be exemplified by theories and projects that process the new environmental concern and its transformation in light of new tools and scientific inquiries. These approaches may be claimed to overturn the dichotomies created in the course of previous contextualist tendencies - critical regionalism and Genius Loci - and will be compared in methodology and process. It will be claimed for a double contextualization within these approaches that are interrelated to each other: One is methodological and invites the scientific knowledge in the field of design and the other is environmental[11] that engages with the surrounding realm with all its aspects to cover also the dynamic, biological and genetic dimensions.

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[11] Kolarevic, Branko. "Designing and Manufacturing Architecture in the Digital Age," Laboratorio TIPUS, http://www.tipus.uniroma3.it/Master/lezioni/AID/ Branko.html. Last accessed in December 2006.

CHAPTER 2

CONTEXTUALIZATION

The second half of the 20th century witnesses an increasing awareness of place and culture re-opening the issue of contextualism in architecture. Throughout the thesis both this revitalization and the former issues of contextualism will be examined to comprehend how the idea of place is structured and how these revivals occur. The concept of Genius Loci may be asserted to be the origin point of all these discourses that will be outlined by the theories that try to unearth it from the Ancient Greek and Roman history. In relation to this revival of the concept of Genius Loci, Anne Beamish States that;

> In the second half of the 20 century, the notions of culture and place have significantly reconfigured the conceptual frameworks of the architectural disciplines. Their conjunctions are traceable in potent notions such as context, Genius Loci and sense of place, and current architectural theories such as vernacularism, regionalism, critical regionalism and heritage conservation… Commonly viewed from these intersecting perspectives, an architecture is perceived to be culturally significant in so far as it embodies a definable difference typically the product of a distinct society, history and geographical conditions.[12]

From Joseph Rykwert's "The Idea of a Town", to Christian Norberg-Schulz's "Genius Loci", this chapter will at first trace a survey of a transcendentalization of the concept of "site" with its miscellaneous ramifications into notions such as 'context', 'Genius Loci,' and 'collective memory'. These features shall draw a

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[12] Beamish, Anne. "De-Placing Difference: Architecture, Culture and Imaginative Geography," http://archnet.org/calendar/item.tcl?calendar_id=6179.
Last accessed in December 2006.

guideline for the first part of this historical survey where the concepts of the "regional/local," the "historical" or in some cases the "cultural" are placed to the core of a discourse known as contextualism in architecture. Then, the critical regionalist approach and related debates shall be referred to as simultaneous yet denser attempts to revitalize such transcendentalization of 'site', 'topos' or 'context in architectural design. This brief record on the origination of contextualism stands vital for the thesis' current articulation of the issue, processing through the feedback of these initial efforts. Other than that, these earlier attempts are significant to construct the general framework of contextualism in architecture that - during this study - is argued to be altered and deviated through the recent design methodologies utilizing scientific methods and computational methodologies.

2.1 Origination of the Concept of Context – Genius Loci

The choice or the endowment of site, hence its importance for the sustainability of the project, has been one of the key issues in architectural discourse. In fact, this strenuous concern for the site in architectural agenda along with its credentials goes far back to B.C. 25, when Vitrivius announced the criteria for a healthy site to settle down for healthy inhabitants in "On the Salubrity of Sites" within his Ten Books on Architecture.[13] Since then, the locus – or the site, as land to be cultivated and lived on, with its earthly conditions comprising solar, climatic, and geographical virtues - has been extensively mentioned and referred in architectural discourse. However, the term to be referred to as "site" in various architectural platforms did not remain the same as Vitrivius called it at the very first, in its Latin origin "locus" and has undergone varying transformations. In fact, it may be asserted that this variation of the term 'locus' occurred due to fluctuations that appeared with respect to the significance and content of the 'site' within architectural discourse. It will be shown throughout the thesis that, as the weight and the significance of "context" changes

[13] Vitrivius, Pollio. *Vitrivius: The Ten Books on Architecture.* Trans. Morris Hicky Morgan. NY: Dover Publications, 1960.

within design criteria, a brand new terminology and reference system has been utilized.

Christian Norberg-Schulz and his seminal work "Genius Loci: Towards a Phenomenology of Architecture" may be considered for such an appraisal of the terminology and the content of the notion of site. Norberg-Schulz's work is based mainly on the Ancient Romans, from whom he surveys the roots of the concept of "Genius Loci." Norberg-Schulz is searching for a concrete understanding of the environment[14] and of the spiritual relationship man established with it. He focuses on the concepts of site and place more as nonrepresentational phenomena than concrete realities architecture is exposed to and notes accordingly that;

> A place is therefore a qualitative, "total" phenomenon, which we cannot reduce to any of its properties, such as spatial relationships, without losing its concrete nature out of sight.[15]

Despite being aware of the significance of the material realities of a site, the book may be asserted to be dedicated to a whole history of a transcendentalization and spiritualization of the site within the course of environmental phenomenology. Relying on the Heidegerrian concept of dwelling,[16] Norberg-Schulz theorizes the relationship between man and his environment through existential philosophy. Accordingly he asserts that;

> Architecture means to visualize the genius loci, and the task of the architect is to create meaningful places, whereby he helps man to dwell.[17]

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[14] Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology of Architecture.* New York: Rizzoli, 1980. p. 5.

[15] Ibid. p. 8.

[16] Heidegger, Martin. "Building, Dwelling, Thinking." *Rethinking Architecture: A Reader in Cultural Theory*. Ed. Neil Leach. London: Routledge, 1997. p. 106.

[17] Norberg-Schulz, Christian. p. 5.

Norberg-Schulz focuses on the environmental character of places to which not only certain physical conditions but also some historical and spiritual geneses are assigned. A conceptual pair is created through the work of Norberg-Schulz, where landscape as a natural phenomenon is opposed to settlement as a man-made artifact. The concept of Genius Loci which Schulz tries to reflect to his theoretical framework is based on the ancient Roman history. He represents the Genius Loci – spirit of place – as a given fact man unfamiliarly finds himself in the middle of and has to come to terms with.[18] Norberg-Schulz constitutes a figure-ground relationship between the natural landscape and the man-made settlement to initiate a dichotomy between site and man. Therefore, he thinks that man-made possessions need a bridge to be connected to nature they are settled in, one which is constructed through various processes. These processes, he calls, basically consist of visualization, a complement and symbolization of the given situation.[19] By visualization, Norberg-Schulz means the actual "building", and by complement, adding what's lacking to the given. Along with these, by symbolization as a final step, he proposes a transposition of meanings to another medium other than the built structure. These processes are expected to make the environment become a unified whole[20] in the Heidegerrian sense, where the three-fold procedure of visualization, complement and symbolization would act as a bridge, bringing out the real potential of that space.

On the origination and comprehension of the concept of 'Genius Loci', Norberg-Schulz notes first that 'Genius Loci' as understood by Ancient Romans, meant to be a place with a protective spirit that not only gives birth to it, but also defines its character and essence.[21]

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[18] Norberg-Schulz, Christian. p 11.

[19] Ibid. p. 17.

[20] Ibid. p. 18.

[21] Ibid. pp. 17-18.

The author persistently stresses that in the course of history this concept of 'Genius Loci' remained a living reality - though it may not have been expressed as such - and has effectuated all disciplines, to bring with a "local" character to them.[22] He claims the necessity of reflecting the concept of 'Genius Loci' in each course and expresses how this conservation should be, stating that: "To protect and conserve the genius loci in fact means to concretize its essence in ever new historical contexts."[23] Before monitoring the transformations the word "Genius Loci'" has undergone, its origination and further connotations may be looked in Joseph Rykwert's seminal book "The Idea of a Town: The Anthropology of Urban Form in Rome, Italy, and The Ancient World" where he sketches an alternative origination of the idea of site simultaneously through its physical and metaphorical assessments.

Rykwert draws a framework from the Ancient Roman Rituals and their leading role for the foundation of the Roman City. He mentions a conceptual model for the Roman City that is drawn and redrawn by the gods, founder, and the citizens. This conceptual model, he asserts, is inevitably related to the physical model yet in a mutually oscillating kinship: That is, the physical model of the city, the endowed topographical model, the settlement of the sacred temple, the roads, the buildings, all are acquired by this conceptual model, that is shaped by the religious ceremonies, sacrifices, daily rituals and festivals. The physical model, however, is also shaped by another concept, that of the "fertile land" which is a gift to man from gods.[24]

The choice of a site is both a consequence of war and rituals, and of economic, geographic and hygienic considerations. Yet, according to Rykwert, these economic and geographic terms are wrapped with rituals, establishing the relationship with

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[22] Ibid. pp. 18-19.

[23] Ibid. p. 18.

[24] Rykwert, Joseph. *The Idea of a Town: The Anthropology of Urban Form in Rome, Italy, and The Ancient World*. Cambridge: MIT Press, 1988. pp. 33-34.

'sacred earth'. Thus a piece of earth becomes land only through rituals, to bring with the geographic and economic advantages and disadvantages simultaneously.[25]

This ritual and spirituality burden of the 'Genius Loci' as conveyed from Roman history and notified by Norberg-Schulz and Rykwert seems to have been extinguished today. However the site or the 'topos' has continued to be cherished concepts among architectural designers and theoreticians. One can note additionally that the term "Genius Loci' still symbolizes this trancendentalized meaning of the site that receives not only the physical conditions but also the unique, characteristic and sophisticated atmosphere or the aura of a place.

David Leatherbarrow re - opens up the ontological questionnaire of the site which he regards as one of the three considerations in architecture, namely site, enclosure and material, that should incessantly feed architectural discourse.[26] Though rejecting emphasis on any one of these considerations, and continuously stressing the utilization of these three simultaneously, Leatherbarrow focuses at the issue of site as a foremost and much ignored concept. He criticizes the treatment of the site as a two dimensional plan in the contemporary practice, and re-calls attention to its real essence:

> Many designers see no need to actually visit the sites for which designs are intended…The real site of these designs is the drawings cabinet or computer file – a bureaucratic or electronic locus.[27]

Leatherbarrow conceives of and interprets the site as a concept that may be viewed concretely as a division of space, an opening in the context and a parcel of land. The "context" as a more known equivalent for the concept of site is introduced by

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[25] Ibid.

[26] Leatherbarrow, David. *The Roots of Architectural Invention.* Cambridge: Cambridge University Press, 1993. pp. 8-11.

[27] Ibid. p. 7.

Leatherbarrow as a concrete substance, even a geometric reference that leads one to its measurable, geographical and climatic conditions. It is important to note that in Leatherbarrow's definition, the concept of context is limited to its physical terms, while context is tried to be re-defined throughout this thesis as an intact model inheriting the entire circumstances or conditions in which something exists or takes place[28] as mentioned in the introduction part. Thus, the definition of context by Leatherbarrow is specifically diverging from the one that this thesis attempts to re-constitute. Though Leatherbarrow treats the site within a methodology to classify its characteristics separately, his work still stands seminal in terms of a generic framework for the terminology of 'site' and 'context' as it figures in architectural theory. It may be asserted that Leatherbarrow, while covering a brief history of site and its attribution in architectural theory, is utilizing the term "context" as a sub-concept identifying some specific feature of the site. Contextualism is mentioned as this attitude towards site definition where design is defined as a completing feature of the landscape.[29]

Leatherbarrow's conception of context focuses on the topographical characteristics of the site, the degree of uniqueness and typicality of which are mentioned as elements to be worked out in a harmony and continuity.[30] The term 'land' is the third feature that he attributes to the site that should be added to the above mentioned two aspects of the site - the division of space and the context. In the concept of land, he defines the site as a "good" with its unique commodity and ownership regulations, its property rights, land and market values.[31] Beyond these three features stressing the concrete properties of the site; Leatherbarrow eventually deals with the site through its metaphysical properties which he sets apart from the former three concepts. The

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[28] Thorndike, E.L. and Barnhart, C.L. *Foresman, Scott Advanced Dictionary.* Scott, Foresman and Company, 1988. p.243.

[29] Leatherbarrow, David. *The Roots of Architectural Invention.* p. 18.

[30] Ibid. p. 18.

[31] Ibid. pp. 29-31.

notion he attained the site as a much more symbolic concept is the "genius of the place" where we eventually get a definition of the site through non-physical terms.

> The eighteenth century interpretation of the ancient genius loci symbolism marks the transition from ideas of the site as a place reaching toward the transcending whole to those in which it was seen as an adequate substitute for that whole; a division of space, an opening in a context, or a parcel of land.[32]

Regarding the issue of site as a transcendental concept, Leatherbarrow mentions the ancient practice of sacred rituals taking place in the choice of site for the establishment of the city.

As we deal with these three theories on the issue of site and context, it may be asserted that all constitute a separate framework to embrace divergent references from the history of architecture. In between these three theoreticians revising the issue of site and contextualism, David Leatherbarrow seems to hold a unique place in terms of his multi-layered definition of the site. Leatherbarrow focuses on site and context both in the scope of its material conditions and transcendental implications. However, it can be observed that the concept of 'Genius Loci' is worked out mostly as a transcendental, metaphysical, almost psychological feature of a site. When the attribute of Genius Loci is assigned to a place, it keeps a strict dichotomy not only between the spiritual implications and the tangible characteristics of a place, but also between that place (which inherits then an original spirit and aura) and the habitants of that place (who interfere with that place and that spirit in many ways, whether respectively or not).

The 20th century revitalization of the ancient concept of Genius Loci and the following attempts to focus on the site and its critical existence in architectural and urban design, end up constituting binary oppositions such as matter and essence, or

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[32] Ibid. p. 33.

natural and man made. It may be asserted that the few attempts outlined above failed to construct a reliable ground for a prolonging discourse in architectural publications. Though Norberg-Schulz and his seminal essay have returned great amount of reflection in architectural platforms most of the work stayed rather as a personal curiosity on the ramification of the further definitions of Genius Loci, rather than triggering an awareness of local features and cultural deposit. On the other hand, contextualism in architecture has been practiced widely between the 60s and the 80s, to embrace concepts similar to Genius Loci, to cite site specifications, cultural belongings and local values of a specific context. This practice is known as the movement called Critical Regionalism, one which has recently extinguished from architectural discourse.

The Critical Regionalism movement between the 60s and the 80s, achieved to attract the attention of not only architectural theory and practice but also of all other disciplines, to contribute to an increased awareness of the contextual, regional and cultural. The movement did not touch much upon the origination and development of a tremendous valuation of the "regional" concern, one which can be found exclusively in the deployment of the concept of Genius Loci. Critical Regionalists seem to conquer the architectural domain through a brand new regionalist attitude, which preserves however the overvaluation of cultural acquisitions and locally specific concerns in architecture.[33] Critical Regionalism shall be examined in the following section in detail to demonstrate how the tendency towards the local features of a site finds a systematic ground of legitimation through various platforms displaying a different viewpoint from the theoreticians of the Genius Loci.

[33] Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance."

2.2 Shifting Debates in Contextualism

2.2.1 Critical Regionalism - Context as the Historical Deposit

As mentioned in the previous section, the ancients conceived of the site as an intact model embracing topographical, climatic and metaphysical features simultaneously. It has also been mentioned that this model inherited a spiritual connotation among several architects and theoreticians as in the case of Norberg-Schulz who contributed to the development of a contextualist approach within the architectural discourse. Yet, beyond this spiritual treatment and transcendentalization of the site, a wider affinity to local features, regional and cultural characteristics of the site led to a novel approach to contextualism beginning from the early 60s defined as "Critical Regionalism" by Alexandre Tzonis and Liane Lefaivre.[34] The movement has found great reflections and developed an extensive critical discourse. Rather than the transcendentalization of site as the one and only source of construction of a meaningful place as in the case of Genius Loci, Critical Regionalists focused on multi-dimensional factors constituting the concept of environment. Hence, the political, historical, cultural, atmospheric and topographical aspects were tried to be comprised simultaneously and in a state of equilibrium with the ongoing changes and transformations as supplementary features to the environmental approach. This rather temperate approach has been mentioned in various essays by the devotees of the movement such as Kenneth Frampton, Alexandre Tzonis and Liane Lefaivre. Yet, the sample projects covered within the agenda of the movement and their accomplishment of this combinatory attitude shall be questioned throughout the thesis, as once more the transcendentalization experienced within the context of Genius Loci is seen to be remarkable in Critical Regionalism as well, leading to dichotomies such as natural and man-made, universal and local.

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[34] Alexandre Tzonis and Liliane Lefaivre, "The Grid and The Pathway. An Introduction to the work of Dimitris and Susana Antonakakis." *Architecture in Greece*. Vol. 15 Athens: 1981, p 178.

In the Critical Regionalist approach, there exists a reactionary attitude towards the Modern Project and its obstruction of the creation or continuance of national identities on the way through universalization, optimization and standardization.[35] This aspect may be assessed as an important differentiation Critical Regionalists brought to the discourse of contextualism together with a de-transcendentalization of the site, which is hard to observe in Norberg-Schulz or Leatherbarrow.

> There is the paradox: how to become modern and to return to sources; how to revive an old, dormant civilization and take part in universal civilization.[36]

Through this earlier statement of Paul Ricoeur, who was referred incessantly for the legitimation of the critical regionalist movement, regionalists affirmed that modernization was a hazardous stroke to national existence and that the "universal" and the "regional" constituted a perfect binary opposition in which the "regional" has been disregarded by modern technologies and methodologies of optimization and standardization. Accordingly, reflecting upon and representing the local conditions, and including initially the historical deposit structured throughout the cultural, geopolitical, climatic and topographical possessions of the region in concern, was set as the ultimate aim of the "Critical Regionalists."[37] However, following the statements of Ricoeur in his seminal essay "Universal Civilization and National Culture" that stands as the ultimate manifesto of Critical Regionalism, critical regionalists especially focused on an appropriate congregation of the mentioned regional concepts and the inevitable issue of universalization.[38]

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[35] Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." p. 17.

[36] Ricoeur, Paul. "Universal Civilization and National Culture." *History and Truth.* Evanston: Northwestern Uni. Press, 1992. pp. 271-284.

[37] Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." pp. 16-30.

[38] Ibid. p. 21.

Kenneth Frampton and his seminal essay "Towards a Critical Regionalism; Six Points for an Architecture of Resistance" may be asserted as the architectural manifesto of this movement, entailing a detailed essay on the motto and origination of this regionally focused attitude. In this essay Frampton utilizes the term "Critical Regionalism" he borrowed from Alexander Tzonis and Liane Lefaivre, to mention his critical gathering of the concepts of modernism and regionalism in architecture. Frampton is critical of the direct use of historical and cultural elements in architecture, as he is to universalism. Thus he aims at constructing oblique relationships with the regional culture. By the use the term critical, he emphasizes the avoidance of a direct utilization of the vernacular elements. Frampton clarifies the point of divergence from a mere regionalism assessing regionalism within the framework of modernism and the ongoing socio-cultural transformations and innovations.[39]

Frampton clarifies the atmosphere that had triggered and prepared a ground for the movement in his seminal essay on Critical Regionalism. He mentions the much uttered opposition between the concepts of civilization; as the principal of Instrumental Reason, Utilitarianism and Division of Labor and culture as the enabler of specifics of expression and collective psycho-social reality.[40] The initial reactions against modernization and it dealt as a counter-paradigm for cultural institutions through the above mentioned binary opposition had been constituted through Neo-Classicism, Gothic Revival and Arts-and-Crafts.[41] Frampton asserts that despite the enchanting effects of these Avant-Garde gestures, they have failed to flourish a systematic method to prevent standardization which suppresses the divergences noticed throughout history. The salvation of the regional identity through architecture, Frampton proposes, cannot be achieved through a conflict between upcoming advanced technologies and the nostalgic architectonic forms as in Neo-

[39] Ibid. p. 17.

[40] Ibid.

[41] Ibid. p. 18.

Classicism. Tzonis and Lefaivre even warn about such a conflict to give birth to a "regional reformism" where "chauvinism" also enters into the domain of regionalism that initially aimed for the "liberation" of identities from the encapsulation of a universal dogma.[42] Frampton suggests that Critical Regionalism that seeks to come to terms with the methodologies of Modernism is the only way to re-capture the essentials of the culture and the region per se.

It may be asserted that the main deviation point from the Genius Loci symbolism is that the regionalists' practice occurs within the content of contextualism. The issues of collective memory and cultural deposit penetrate discourse with Critical Regionalism, while the theoreticians of the Genius Loci focused merely on the historical, topographical and climatic features of a "given site" cherished with a protective spirit. The latter has little to do with the general framework of the social life and the role given to cultural and historical deposit in critical regionalism. Accordingly Kenneth Frampton suggests that,

> The case can be made that Critical Regionalism as a cultural strategy is as much a bearer of world culture as it is a vehicle of universal civilization.[43]

Hence the critical regionalist's concern encompasses not only the specific environment in concern, but extends to multi-dimensional and multi-faceted factors affecting the environment. In other words, the historical re-valuation of the specific site is structured both locally and nationally, simultaneously keeping the practical features that the novel technologies, the modern life and universalization have brought to the political, economic and cultural milieu. This constitutes a line of difference between Genius Loci symbolism and the critical regionalist approach.

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[42] Tzonis, Alexandre and Lefaivre, Liliane, "The Grid and The Pathway. An Introduction to the work of Dimitris and Susana Antonakakis." p 178.

[43] Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." p. 21.

Besides, while context may be defined as a summation of the site characteristics in Genius Loci symbolism, in Critical Regionalism, the political, cultural and "psycho – social" situation of the milieu is the keystone of the concept of contextualism. Another point of divergence between critical regionalists and the proponents of the Genius Loci is a certain distance critical regionalists have acquired with respect to the concept of Genius Loci – the origination of the concept of land and regional identity - and the historical evolution of this apprehension of the regional and cultural.

Critical Regionalism has neither been structured as a style, a movement or a manifesto; rather it attempted at a new awareness of the "site" and of its historical and contextual relevance to both architects and planners, as well as to public consciousness.

Frampton emphasizes the inadequacy of formal references from the historical and cultural values. He even constructs his criticality to such an abuse of history and culture as well as to the universalism. Yet, the related legitimization is provided merely via formal references, while Frampton explains about the fundamental opposition between universal civilization and autochthonous culture stating that;

> The bulldozing of an irregular topography into a flat site is clearly a technocratic gesture which aspires to a condition of absolute placelessness, whereas the terracing of the same site to receive the stepped form of a building is an engagement in the act of "cultivating" the site.[44]

The prejudgment posed by Frampton, may be asserted as a clear sample of Critical Regionalism's formal inclination that ends up with an expected binary opposition. The repetitive emphasis on "Place-form" and "place-oriented culture" - as also seen in the above mentioned case of "building the site" - underpins the dichotomy

[44] Ibid. p. 26.

between the building and the site – which the Regionalists take as their contextual base - and extends the binary oppositions set forth by Christian Norberg - Schulz and David Leatherbarrow.

On the other hand, Liane Lefaivre and Alexandre Tzonis, the name-givers of the movement, developed a chronological method for constituting an evolution of the issue of regionalism: One may find a detailed history of regionalism in Tzonis' essay "Introducing an Architecture of the present; Critical Regionalism and the Design of Identity".[45] In fact, as the name-giver of the movement, Tzonis unearths the previous attempts to emphasize "place identity", beginning from the Greeks. Tzonis exposes the ancient Greeks' passion in constructing identities through the habituated land at the outset. [46]

In his essay "Introducing an Architecture of the present; Critical Regionalism and the Design of Identity"[47] Tzonis reveals the unnoticed features of regionalism in Roman architecture - reminding their rather balanced regional attitudes in comparison to Ancient Greeks - which has preceded even the 12th century attempts that he asserts as the beginnings of a regionalist architecture. Tzonis subsequently focuses on the picturesque type of regionalism that in the 17th century aided for the construction of a nationalist approach we see in that era's England and France. The main point in retaining "picturesque regionalism" for constituting the ground for Critical Regionalism is that Tzonis considers it as the predecessor of a critical attitude in Regionalism that is a sense of responsibility for the problems created by globalism,

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[45] Tzonis, Alexandre. "Introducing an Architecture of the Present. Critical Regionalism and the Design of Identity." *Critical Regionalism: Architecture and Identity in a Globalized World.* Prestel Publishing, 2003. p. 15.

[46] The term "Critical Regionalism" was initially mentioned and expressed in "The grid and the pathway," by A. Tzonis, L. Lefaivre in *Architecture in Greece* no. 5, 1981.

[47] Tzonis, Alexandre. "Introducing an Architecture of the present. Critical Regionalism and the design of Identity." p. 15.

identity and environmental crisis.[48] Therefore, it is also important for the scope of the thesis to revive previous regionalist attempts especially the ones that do so by dealing with the environment in terms of its problematic and critical features, as has been the case of picturesque regionalism, reminded by Tzonis.

Liane Lefaivre's subsequent essay sets the framework of regionalism with its supporters and antagonists after the 50s.[49] Lewis Mumford and his critical dealing with regionalism in the 1940s have been widely mentioned by Liane Lefaivre. Mumford is appreciated as the primary critic of a relevant regionalism, for developing the idea of a "common humanity" simultaneously holding for the regional values. [50] Mumford's concept of regionalism is also esteemed to reveal the critical confrontation between technology and regional concern without getting at odds with anyone of the two.

Clearly, Mumford's regional discourse is contemporaneous with the claims of the International Style and related concepts of objectivity and universality that were being declared in various platforms, finding great reflections in architectural discourse. Mumford's related dissertation seemed to be positive towards International Style as he stated; "regionalism is a sample of internationalism, not a sample of localism and limited effort."[51] Nevertheless, in many cases Lefaivre and Tzonis had declared their apathy for the International Style and its acceptance as the manifesto of the Modern Movement.[52] Vice versa, as declared by Tzonis and

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[48] Ibid.

[49] Lefaivre, Liane. "Critical Regionalism A Facet of Modern Architecture since 1945." *Critical Regionalism: Architecture and Identity in a Globalized World.* Prestel Publishing, 2003. pp. 24-53.

[50] Tzonis. Alexandre and Lefaivre, Liane. "Why Critical Regionalism Today?" *Theorizing a New Architecture: An Anthology of Architectural Theory 1965-1995*. Ed. K. Nesbitt. New York: Princeton Architectural Press, 1996. p 486.

[51] The Museum of Modern Art Bulletin vol. XV, no. 3, 1948.

[52] Tzonis, Alexandre. *Critical Regionalism: Architecture and Identity in a Globalized World.* Prestel Publishing, 2003. p. 6. and Lefaivre, Liane and Tzonis, Alexander. "The Question of Autonomy in Architecture." *Harvard Architecture Review*. Vol. 3. Winter 1984. pp. 25-42.

Lefaivre, Mumford's attempts to interpret regionalism as a sample of internationalism had been rejected among the forerunners of the International Style, Walter Gropius and Marcel Breuer.[53] The temperate atmosphere that Kenneth Frampton, Tzonis and Lefaivre tried to conceive has never been found between regionalism and modernism.

One last point that Tzonis and Lefaivre put forth is that Critical Regionalism should be in charge of declaring an alternative position of a highly social order. This position was called as the "architecture of place", defined as "neither a socially engaged vision completely outside the practical framework of architecture nor a socially vacuous exercise within the autonomous "formal" framework of architecture[54] as put by the authors. However, the in-between position they suggest for Critical Regionalism has been hardly advanced in the works of the followers of the movement.

All these attempts by critics such as Mumford and a list of architects comprising Paul Rudolph as a critical tropicalist, Kenzo Tange - in reject of total regionalism, Alvar Alto and Sedad Eldem have been studied by Lefaivre and Tzonis to bring in a critical façade to regionalism. The term critical at first seems like a caution against the shortcomings of universalism and globalism in terms of a disregard of cultural possessions and related local identity. Yet, as stated by Lefaivre, regionalism is critical not only of globalism but also of regionalism that is of old-tendency define.[55] Furthermore, regionalism is defined by Lefaivre and Tzonis as a self-examining, self-

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[53] The Museum of Modern Art Bulletin. p 18.

[54] A. Tzonis, L. Lefaivre. "Why Critical Regionalism Today?" p. 491.

[55] Lefaivre, Liane. "Critical Regionalism. A Facet of Modern Architecture since 1945." p. 34.

questioning, self-evaluating concept constantly evolving not only with respect to ongoing standardization but also to itself.[56]

Tzonis and Lefaivre seem to have attained a detailed record of the regionalist agenda beginning from the ancient Greeks till recent platforms searching for the possible regionalist attitudes. However, critical regionalism is a historically limited critique. It is hard to follow the origination of the local concern - concept of Genius Loci - during Critical Regionalism[57] as it is to survey the latter ramifications developed in relation to the technological transformations occurred in the architectural discipline. Lefaivre and Tzonis also noted the theory of Critical Regionalism lacks a foresight as to the future of regionalism and hence of contextualism. Accordingly they state that;

> As we move into the unknown territories of the twenty-first century, the unresolved conflict between globalization and diversity and the unanswered question of choosing between international intervention and identity, are increasingly leading to crises as vital as the threat of a nuclear catastrophe in the middle of the last century. The task of critical regionalism is to rethink architecture through the concept of region. Whether this involves complex human ties or the balance of the ecosystem, it is opposed to mindlessly adopting the narcissistic dogmas in the name of universality, leading to the environments that are economically costly and ecologically destructive to the human community.[58]

To conclude; all these efforts for the consideration of the culture/site/topos as vital aspects of architectural design ended up into a branch of dichotomies constituted between the unique aura of a spatial realm and all other artificial attempts to fit into that setting. In fact; in terms of their sensible approach to environmental factors and cultural acquisitions, many attempts within the course of critical regionalism have

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[56] A. Tzonis, L. Lefaivre. "Why Critical Regionalism Today?" p 488.

[57] Ibid. p 485.

[58] Tzonis, Alexandre. "Introducing an Architecture of the present. Critical Regionalism and the Design of Identity." p. 20.

been appreciated in the critical theories developed. Still, most have been presented rather as well articulated patches to the existing natural pattern than as inseparable components of a unified surrounding. For instance, Alexander Tzonis settles and appreciates many works of Moshie Safdie within the critical regionalist agenda – to mention Hebrew Union College in Jerusalem with its loaded historical context that also has effects on community in bringing with the awareness of the cultural concern.[59] Yet, subsequently Tzonis, himself, defines Safdie's this building as rapport, a dialogue between built form and natural landscape, in the broader concept of adaptability. [60]

Figure 1: Hebrew Union College in Jerusalem by Moshie Safdie

Frampton, Kenneth. *Modern Architecture: A Critical History.* London: Thames and Hudson Ltd, 1992.

[59] Tzonis, Alexandre. *Critical Regionalism: Architecture and Identity in a Globalized World.* p. 7.

[60] Ibid.

CHAPTER 3

RECESSION OF CONTEXTUALIZATION

One other interrogation that has been generated within the issue of context in architecture may be regarded as the Autonomy debate in architecture. The Autonomy debate may be assessed as an introverted discourse on architecture where the aim, methodology and theory have been hardly clearly cited. The attention called to autonomy in architecture came from divergent platforms and varying periods, making it hard to draw a generic framework or a clear stance for this kind of an approach in architecture. Accordingly the legitimation and the reference system of autonomy in architecture also reside on such miscellaneous ideas and concepts from the history of architecture.

At the outset, a thorough interrogation of the essentiality and inevitability of context in architecture may be mentioned as a common theme for the autonomous approach. The concept of isolation affiliates to that of autonomy to bring with an externalization of all historical, socio - cultural, political and contextual deposit from the field of design. The contextual reference - whether a cultural feedback, collective memory or local characteristics of the site - stands as a back tone, externalized in an architectural methodology that develops its own formal canons and the virtues of geometrics. Yet, the specific content of the context which is being questioned and/or rejected is seen to show inconsistencies among divergent autonomous approaches. For instance, Critical Regionalists proceed with the local conditions, processed through various climatic, topographical and anthropological data reckoned within the contextual feedback. The reaction of Autonomous approaches to such local contextualism shows variation according to the degree of externalization processed. In some cases there is total rejection of all elements other than those related with formal evolution, while in others; the local characters are retained as elements of

design to end up into a unique formal language. Thus, the point cannot be made whether local conditions are rejected within the autonomous approaches in all cases.

However, what is clear is that the context is usually rejected when it denotes a utilization of the historical sign through spatial approaches, as is the case of Critical Regionalism. Autonomous approaches especially reject what they consider an abuse of the historical deposit.[61] Accordingly it may be said that the autonomous approach presents a counter argument to Critical Regionalism on the issue of a direct or indirect appropriation of historical forms.

The socio–cultural occupation of architecture presents another dilemma for the autonomous attitude. It may be assessed that the mainstream problem of the autonomous position lies in the socio–cultural and political role addressed in a spatial discipline like architecture. In most cases such a role is told to contaminate the architectural methodology which is expected to develop a formal language within the disciplinary boundaries. Hence, an antagonism between the proponents of autonomy and regionalists is created with respect to the issue of a socially and culturally responsible architecture.

For the sake of an inquiry into a "return to the discipline"[62], the autonomous approach is seen to question and reject divergent levels of contexts. The autonomy debate in architecture operates a de-contextualization that is significant for the scope of this thesis. The recent approaches that shall be examined in the following chapter and presented as novel attempts to awaken the concept of context within a different framework, are also seen to operate a certain de-contextualization that places them within the course of this tradition of autonomy in certain architectural platforms. The autonomy discourse that rose in the 70s is going to be dealt with in this chapter to

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[61] Anker, Andrew, Kessler, Mark and Clark, W. Scott. *Harvard Architecture Review*. Cambridge, MIT Press, 1984. p. 2.

[62] Ibid.

provide for a historicization of de–contextualization processed through the autonomy debate in architecture, one that can be linked to the present focus on formal evolution. Yet, it should be noted, as also declared by Alexandre Tzonis and Liane Lefevre, that autonomy of architecture cannot be thought as the discourse of a limited period but may even be read back to architectural theorists such as Alberti and Vitrivius.[63]

3.1 Challenge presented by the Agenda of the Autonomy debate

In his essay "The Ontological Foundation of The Occasional And The Decorative," Hans-Georg Gadamer mentions a dual ordering in architecture, where the one addresses the fulfillment of its own usage and the other comprises its accumulation within a spatial context.[64] By this dual ordering, Gadamer suggests that "architecture presents a true increase of being; as a work of art"[65]. Yet, if architecture is set apart from the reality in which it takes place, for Gadamer, this opportunity of architecture to be brought forth as a work of art would be lost in an alienated aesthetic consciousness:

> Thus architecture, this most statuary of all art forms, shows how secondary 'aesthetic differentiation' is. A building is never primarily a work of art. Its purpose, through which it belongs in the context of life, cannot be separated from itself without losing some of its reality. If it has become merely an object of the aesthetic consciousness, then it has merely a shadow reality and lives a distorted life only in the degenerate form of an object of interest to tourists, or a subject for photography. The work of art in itself proves to be a pure abstraction.[66]

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[63] Lefaivre, Liane and Tzonis, Alexander. "The Question of Autonomy in Architecture," *Harvard Architecture Review*. Vol. 3. Winter 1984. pp. 25 – 26.

[64] Gadamer, Hans-Georg, "The Ontological Foundation of The Occasional And The Decorative," *Truth and Method*. London: Sheed and Ward, 1989. pp. 127-142.

[65] Ibid.

[66] Ibid.

This description of Gadamer seems essential for the challenge that is explicitly posed by the idea of autonomy. The ideal of an autonomous architecture isolated from its context is believed by Gadamer to end up in a degenerate form of object. It needs to be noted that the issue of autonomy of architecture owes much of its discursive form to the critiques posed to it, as in the case of Gadamer. Few theories may be traced from the autonomous agenda that defend this refusal of socio–political, cultural and local features through literal means to constitute the ground for such an approach. Accordingly it was stated by the editors of Harvard Architecture Review that;

> Although much of the recent work derived from the theory of autonomous architecture has become quite influential, the theory itself is not well known.[67]

Apart from a bulk of critical assessment and counter argument posed directly or indirectly, the discourse of the autonomy in architecture is barely introduced. Autonomous approaches focus on methodologies, the syntactic nature of the forms of architectural production and the meta–language that disposes itself through certain architectural codes. Peter Eisenman (on his experiments for creating an architectural language for the sake of architecture) and Aldo Rossi (through his research on the collective memory for uncovering an autonomous logic behind the formation of the city) may be regarded to deal with this idea of autonomy in architecture. They present two divergent attempts searching into the interior dynamics of the discipline.

The seminal architectural publications such as Oppositions, Perspecta and Harvard Architecture Review also gave place to this theory of autonomy that has found great reflections among architectural platforms. In order to figure out the idea of autonomy in architecture, it may be looked at the conditions that existed in the time it flourished through these essays. K. Michael Hays explains about these conditions in his interview on the reemergence of the issue of autonomy stating that:

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[67] Anker, Andrew, Mark Kessler and W. Scott Clark. *Harvard Architecture Review.* p. 1.

> When the issue of autonomy re-emerged in the 70s, architecture was in the peculiar situation of being eroded from within by having become a service industry completely determined by the building technology and programmatic demands of the time. On the other hand, it had been challenged from outside the discipline by behaviorism, sociology, pseudo – positivist history and pseudo – scientific discourses that tried to explain architecture away in terms of how people behaved, or what response they checked off on a questionnaire. Formal issues had given way to these statical and operational analyses. Architecture found itself without cultural or disciplinary specificity…It had to therefore, re–territorialize itself by rediscovering, reasserting or reinventing its codes.[68]

Hays' clarification of the architectural scene in the 70s is seminal in terms of defining the critical "formal" inclination of autonomy. Hays, continues with mentioning seminal names in the theory of autonomy. Among these names Peter Eisenman, Also Rossi, Diana Agrest and Mario Gandelsonas are mentioned as the most important attempts.[69] Peter Eisenman's theory of autonomy is going to be dealt with in detail within the scope of this thesis. But before that, other theories on the issue of autonomy will be summarized to provide for a generic framework to the autonomous approach flourished in the 70s and 80s.

3.1.1 The Theory of Autonomy in Architecture in the 70s and 80s

At first it may be looked into the Harvard Architecture Review that had a certain position towards the idea of autonomy, defining an autonomous architecture as a "failure to enter the political sphere."[70] Accordingly, it is stated by the editors - Anker, Andrew, Mark Kessler and W. Scott Clark that;

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[68] Hays, K. Michael and Kogod, Lauren. "Twenty Projects at the Boundaries of the Discipline Examined in Relation to the Historical and Contemporary Debates over Autonomy." *Perspecta*. Vol. 33, 2002. p. 55.

[69] Ibid.

[70] Anker, Andrew, Mark Kessler and W. Scott Clark. *Harvard Architecture Review.* p.6

> Autonomous architecture continues the concern of the modern movement for an architecture of essence, one that transcends style and personal taste.[71]

Though standing as the outcome of a personal critical outlook, it is important to note that a degree of transcendentalization is attributed to the concept of autonomy in architecture through this statement. This transcendentalization undergone through the formal canon within the autonomous tradition shall be explained in detail within the final course of this chapter after the detection of all other key theories on the autonomous architecture. Especially of Peter Eisenman's where the utmost degree of de–contextualization and transcendentalization of the "formal" is observed.

The editors of Harvard Architecture Review volume 3, (Anker, Andrew, Mark Kessler and W. Scott Clark) also mentioned that the concept of autonomy in architecture is defined to achieve a point only through its kinship with the past;

> Autonomous architecture provides such a definition, successfully synthesizing aspects of both traditions; classical as thesis, modern as antithesis.[72]

The attribution of the "classical" here should not be understood as a return to the classical forms, which would be at odds with the ultimate goal of autonomy in architecture to be freed from any historical context. As explained by editors of Harvard architecture review, the significance of the recalling of classical tradition for the ideal of an autonomous architecture lies in its accomplishing a certain typology, a superior ruling system that relies on the virtues of geometrics whilst holding for an idealized view of nature. The position that Aldo Rossi had cited should be mentioned through this referring to the classical type for the autonomy of architecture. Rossi by revealing the superior – formal – logic within the structure of the city searches the

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[71] Ibid. p.5

[72] Ibid. p.3

interior dynamics of architecture.[73] Yet, before focusing on the methodology of Rossi, that the general framework of autonomy in architecture augmented in 70s architectural agenda is worth mentioning.

The position of Perspecta is different from the Harvard Architecture review. Two major volumes on the issue of autonomy of architecture have been published. First one is the Perspecta 21 which has been published in 1984 at the time the autonomy debate of the 70s had been intensively persisting. The subsequent one is the Perspecta 33 titled "Mining Autonomy" published in 2002 both in accordance with the previous debate in the 70s and related with the revitalization of the issue of autonomy in 2000s due to the technological transformations undergone both within the urban structure and the discipline. K. Michael Hays and his seminal essay "Critical Architecture: Between Culture and Form"[74] that was published in the former issue of Perspecta in 1984, provides for a theory of autonomy in architecture by introducing the polarities involved in the attempts at autonomy. Accordingly, Hays challenges these polarities by asserting an in-between position for autonomy where architecture is assessed as an active entity with its own dynamics yet concerned with cultural themes. The in-between position denoted by Hays is pre - stressed by Stanford Anderson who may be reckoned also as a contributor to the theory of the autonomous architecture. Anderson's seminal essay "Problem – Solving and Problem-Worrying"[75] dated 1966, has been published in Perspecta 33 in 2002 to show how the theory is still relevant in the context of 21st century where the dichotomies of the autonomous theory were under question.

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[73] Ibid.

[74] Hays, K. Michael. "Critical Architecture: Between Culture and Form." *Perspecta.* Vol. 21, 1984. pp 14 – 29.

[75] Anderson, Stanford. "Quasi- Autonomy in Architecture: The Search for an In Between." *Perspecta.* Vol. 33, 2002. pp. 30-37.

Hays provides definitions for both approaches to the issue of autonomy in architecture before citing his in–between position. He clearly brings forth a definition of architecture as an autonomous form of thought stating that;

> The temporal convention of interpretation here is that of an ideal moment in a purely conceptual space; architectural operations are imagined to be spontaneous, internalized – that is, outside circumstantial reality – and assimilable as pure idea.[76]

The concept of a circumstantial reality that is to be externalized is an important notion for this thesis which tries to define the present position with respect to context. On the other hand, Hays defines the rather socially and culturally dependent attempts as such;

> On this view architecture is essentially an epiphenomenon, dependent on socio – economic, political, and technological processes for its various states and transformations.[77]

Hays criticizes both positions where one overlooks culture for form, and the other form for culture, which he thinks are two inseparable approaches of a critical architecture. He proposes that a critical architecture should continually define and re–define the cultural meaning that the formal entity relies on. He especially condemns the effort in the autonomous approach to end with the representational character of architecture which he thinks is significant. This character is representative of the social context which Hays notes is inevitable for architectural design. From that point of view, it may be understood that Hays poses architecture a representational character which is far distant to the autonomous approach. Yet, his remarks of autonomy are significant for he entails a de-transcendentalization of either views, despite seemingly being closer to one. Moreover, Hays depicts this situation as a dilemmatic situation for architecture. Accordingly, he asserts that;

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[76] Hays, K. Michael. "Critical Architecture: Between Culture and Form." p 15.

[77] Ibid. p 15.

> The two positions sketched above are symptomatic of a pervasive dichotomy in architectural theory and criticism. One side describes artifacts as instruments of the self-justifying, self-perpetuating hegemony of culture; the other side treats architectural objects in their most disinfected, pristine state, as containers of a privileged principle of internal coherence.[78]

This concept of disinfection introduced by Hays is influential to introduce the topical debates on the degrees of formalism claimed within the recent computational approaches and shall be returned to within the scope of computational approaches to be mentioned in the following chapter.

> In the 1970s, the reemergence and redefinition of the notion of architectural autonomy at the Institute for Architecture and Urban Studies and in the pages of Oppositions became a way for architects to define their practice against technocracy while maintaining for architecture a critical social role.[79]

Hays contributes to the issue of autonomy in architecture also by going for and citing the theories that formulate the debate of autonomy that is situated in diverse volumes of the Journal *Oppositions*. The essays that are selected from the volumes published between 1973 and 1984 may be positioned as theories that contribute to the growth of the issue of architectural autonomy within a contextualism discourse. Among the theories that Hays highlights, Diana Agrest's "Design versus Non-Design" and Anthony Vidler's "Third Typology" shall be referred to for tracing the theory of autonomy in the 70s, where oblique attributions to the issue of autonomy within the more generic framework of contextualism in architecture can also be found.

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[78] Ibid.

[79] Editor's Statement. *Perspecta.*

Diana Agrest states according to the positions developed in relation to the architecture's kinship with the social dimension that; [80]

> Practicing architects and critics of architecture have repeatedly emphasized the need to relate architecture to its social or cultural context. ...I wish to explore here these "external" or cultural relations of architecture – that is, between architecture and its social context – by means of a theoretical model that posits two distinct forms of cultural or symbolic production.[81]

Agrest conceives of the relationship between architecture and culture as the transaction of codes between architectural logic and cultural systems. Rather she dreams of an architectural code system that acquires its cultural acquisitions from the relationship it established with other disciplines, that is in mutual relation with the formation of culture. Agrest points out to the significance and absence of a transferring medium for architecture – a coding system that receives the outcomes of culture and other cultural systems. Accordingly she states that;

> The relationship between design and culture may, then, be stated as the mode by which design is articulated (as one cultural system) in relation to other cultural systems (at the level of codes).[82]

Agrest mentions of *design*, that is, architectural design that is at practice within the functionalist doctrine of the 1960s where there is a direct embracing of all forms of society and culture. On the other hand, she mentions of *non-design*, inherently related to the cultural events and other cultural systems such as literature, music, film, etc. There is offered a procedure for an architecture of *non-design*; an architecture of non-institutionalized terms that may be summarized through three

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[80] Agrest, Diana. "Design versus Non-Design." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984*. Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998. pp. 331 -355.

[81] Ibid. p 333

[82] Ibid. p 335.

basic steps: At first; "specifity" to maintain the disciplinary boundaries, [83] then the "Metaphoric Operations" to provide a filter whilst the inevitable relationship between culture and architecture takes place, [84] and finally there is the process of "Productive Reading" for the transformation of the cultural codes that traverse from the metaphoric filter to a spatial approach. [85]

Despite the absence of a direct attribution to the theory of autonomy, it is obvious that Agrest's dichotomy of design versus non – design is parallel to Hays' argument on cultural product versus form, where the main axis of the problematic is the issue of autonomy in architecture. Yet, again parallel to Hays' non - polarized attitude and similar to the quasi-autonomous approach of Stanford Anderson, Agrest recognizes the contextual infiltration to the architectonic thought to the extent that the nature of architectural codes are inherited.[86] Agrest stresses that in non – design approach, both instrumentalization and institutionalization are rejected; Agrest believes both to be in service of a traditional definition of architecture as a mere projector of socio-cultural milieu. What is specific to Diana Agrest is that she deals with the issue of autonomy through a divergent point of view, where the architectural syntax and its symbolic configuration are practiced for an engagement of cultural codes and the logic of architectural form.

Anthony Vidler and his seminal theory on the typology of architecture – "The Third Typology" – is yet another questionnaire that is opened up in relation to the critical edge between the inherent qualities of architecture and its functioning as a moderator

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[83] Ibid.

[84] Ibid. p 337.

[85] Ibid. p 352.

[86] Ibid. p 340.

in the city.[87] Vidler does not essentially formulate, neither does he reject the methods and doctrines for the possibility of an autonomous architecture that has been freed from any contextual reference and regained its disciplinary qualifications. Rather, he proposes that there has already flourished a third typology in architecture where no cultural validation exists for the architectural production. Vidler focuses on architectural types and their evolution through the city. Though he mentions the possibility of a third typology through an architecture focused on its own nature, he also states that such an interior formal canon has the locus of its concern in the structure of the city.[88] Vidler's may be defined as the utmost effort to draw the boundaries of autonomous approaches within the continuity of a typological framework. He mentions of the first and second typologies that find legitimization through another nature outside architecture, whether it be the pure natural analogy or production process. He focuses on the works of new Rationalists such as Aldo Rossi where through metaphoric opposition, the decomposition and subsequent re - composition of fragmental features of the city take place. Vidler defines this position as a radical "ontology of the city", where the city with its physical artifacts is accepted as a source of formal transformation. Related to this ontological treatment of the city, Vidler states that:

> It denies all the social utopian and progressively positivist definitions of architecture for the last two hundred years. No longer is architecture a realm that has to relate to a hypothesized society in order to be conceived and understood; no longer does architecture write history in the sense of particularizing a specific social condition in a specific time or place. The need to speak of function, of social mores, of anything, that is, beyond the nature of architectural form itself – is removed.[89]

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[87] Vidler, Anthony. "The Third Typology." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984.* Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998.

[88] Ibid. p 13.

[89] Ibid. p 14.

Vidler's declaration on the possible and legitimized existence of a third typology that may also be mentioned as an alternative notion to autonomy in architecture has been quite influential within a contextualism interrogation in architecture. His theory is interesting in terms of embodying an externalization of concerns other than form, yet within the acceptance of the physicality of the historical city as an epistemic background. As Vidler also suggests, the theory of the third typology may best be explained with reference to the works of Aldo Rossi.

3.1.2 Aldo Rossi – Autonomy of the Architecture of the City

Through the interpretation of Anthony Vidler, Aldo Rossi' seminal work "The Architecture of the City" is worth being mentioned to the extent that its relationship with debates on autonomy and contextualism in architecture is further emphasized. Rossi's influential work on the relationship between type and architecture shall be dealt with, even though it is hard to infer a direct reference from his theory to the discourses of contextualism and autonomy. However, Rossi's work is remarkable in terms of its comprehension and evaluation of the issue of contextualism in architecture. Hence, it may be clearly stated that Rossi had accomplished seminal contributions to the historicism of architecture especially with his reading of the essentials of the 18th century city. Aldo Rossi, in terms of his involvement with the historical and cultural entities through the theory and practice of architecture, may well be mentioned in the previous chapter of this thesis, where the researches and projects have been processed in accordance with their collaboration with social, historical and cultural conditions through architectural advance. Once this inquiry to inthe historical feedback is mentioned, it is hard to cite Rossi's position within the ideology of autonomy that is frequently dealt as an approach that externalizes historical deposit, as mentioned in the previous part. Yet, Rossi's seminal researches on architectural typology and collective memory should be studied as more a critical reading of the physicality of the architecture of the city than a mere historical contextualism. Peter Eisenman and Anthony Vidler both detect a certain degree of autonomy in Rossi's interpretation of the city as a physical artifact. Eisenman states in his introduction to the American Edition of the book "L'architettura della Citta" that;

> This twofold idea of the city as ultimate data – an archeological artifact – and of the city as autonomous structure not only characterizes the new city as an object, but more importantly, and perhaps inadvertently, redefines its subject – the architect himself.[90]

Eisenman notes that while transforming the essential formal structure of the 18th century city, Rossi unearths the skeleton of the urban structure through the measuring apparatus of typology.[91] As also noted by Eisenman, the degree of scientism and logic applied by Rossi in the process of reading the city protects him from a nostalgic approach to history:

> History comes to be known through the relationship between a collective memory of events, the singularity of place (locus solus), and the sign of the place as expressed in form.[92]

As clarified by Rossi, whilst focusing on the individual and collective memory of the city, his specific dealing with the time of the city has led him to the concept of analogy.[93] As further explained by Eisenman, the time mentioned by Rossi is of memory, and replaces history.[94] The individual artifacts in the city are dealt more in relation to their ordering in the typologic apparatus than the time or place of their erection. Rossi then isolates the architectural artifacts of the city from the context they belong to for a further investigation of their distinctive status in collective memory. In relation to this particular de–contextualization operated through the methodology of Rossi, Eisenman states that;

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[90] Eisenman, Peter. *The Architecture of the City*. Ed. Peter Eisenman and Aldo Rossi. Trans. Diane Ghirardo and Joan Ockman. MIT Press, 1992. p. 4.

[91] Ibid. p 5.

[92] Ibid. p 7.

[93] Rossi, Aldo. *The Architecture of the City*. p 18.

[94] Eisenman Peter. *The Architecture of the City*. p 7.

> These preserved or pathological permanences, mummified presences in the city, often tend to owe their permanent character to their location within a specific context. In this sense, the quasi naturalist urbanism of the contemporary contextualists is dialectically opposed in Rossi's view, to the concept of evolutionary time.[95]

Thus, it may be asserted that for the analog design process of Rossi, both place and time are significant elements, yet their role in this procedure is much bound to a departure from their traditional comprehension and utilization as contextual input to design. Another concept that is seen to diverge from its usual connotation is the typology that is often linked with mere functional grouping. In Rossi's typological approach, the functional agenda of modernism is criticized in many ways. Rossi focuses on the urban artifact in accordance with its formal structure and the relationship it established with other urban artifacts through this formal attribution. In relation to that, he states that;

> So conceived, function, physiological in nature, can be likened to a bodily organ whose function justifies its formation and development and whose alterations of function imply an alteration of form. In this light, functionalism and organicism, the two principal currents which have pervaded modern architecture, reveal their common roots and the reason for their weakness and fundamental ambiguity. Through them form is divested of its most complex derivations: type is reduced to a simple scheme of organization, a diagram of circulation routes and architecture is seen as possessing no autonomous value. Thus the aesthetic intentionality and necessity that characterize urban artifacts and establish their complex ties cannot be further analyzed.[96]

Rossi carries out this critique of functionalism to the urban scale, where urban morphology is understood and reduced to a mere study of functions. He criticizes the established classification of cities in commercial, cultural, industrial and military terms. The initial concern is put on the formal being of an artifact or a city in the actual – present – time, one that inherits a certain function, but does not acquire its

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[95] Eisenman, Peter. *The Architecture of the City*. p 6.

[96] Rossi, Aldo. *The Architecture of the City*. p 46.

meaning essentially from that. Rossi asserts that the constitutive elements of the city – the monuments - are crucial in their aesthetic typology, yet not in their functional or historical meaning. He recalls attention to the fallacy of the recent urban scene which evaluates urban artifacts in relation to their social or cultural function. Accordingly, Rossi states that;

> In reality, we frequently continue to appreciate elements whose function has been lost over time; the value of these artifacts often resides solely in their form, which is integral to the general form of the city; it is, so to speak, an invariant of it.[97]

This tribute that Rossi places upon the formal criteria does not necessarily assure an autonomous position for him. However, Rossi literally states that his utmost effort for analyzing the complex formation of urban morphology aims at the possibility of creating an autonomous skeleton for understanding and further constructing the city. Among the theories on architecture's autonomy, "L'architettura della Citta" appears to be unique and significant in terms of its interpretation of the formation of the city as an architectural artifact. It is unique in the sense that Rossi claims the autonomy of architecture while territorializing its basis in the history of the architectural formation. It is often the case in debates on autonomy to avoid historical references. Yet, it is obvious that Rossi speaks of an architectural language – a superior ruling system for forms that is accomplished only through such deep reading of the city as an artifact with its own formal logic.

3.1.3 Critique of Modernism in the Autonomy Debate

The theories developed on the autonomy of architecture in the 70s – referring to essays in Oppositions and Perspecta on the autonomy of architecture - seem to display balanced attitudes between contextual reliance and formal concern. Oppositions and Perspecta may be regarded in favor of an idea of autonomy as long

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[97] Ibid. p 60.

as this brings forth the unnoticed features of a potential in architectural discipline. Likewise, Aldo Rossi – the autonomous researcher in the words of Peter Eisenman - as mentioned above deliberately searches for architecture's autonomy through the historical structure of the city. On the other hand, certain counter arguments are also constituted, for instance in the case of the Harvard Architecture Review. As previously mentioned Alexandre Tzonis and Liane Lefaivre focused on the theory of Critical Regionalism and in many ways appreciated its social responsibility on the sustainability of the cultural values. Not surprisingly in their 1984 essay "The Question of Autonomy" there is observed an ultimate critique to the autonomous approaches. (It should also be reminded that this was also the position of Harvard Architecture Review comprising theories that attack the idea of autonomy in architecture.) They even charge the supporters of the concept of autonomy in architecture with the guilt of being *non-socially relevant and servant to capitalism which causes a privatization of the discipline*.[98] Accordingly, Tzonis and Lefaivre assert that;

> The privatization and erotization of the use and acquisition of buildings displaces the consciousness of the social dimension of design objects.[99]

In Tzonis and Lefaivre's discourse, what is meant by privatization is that the pleasure of the viewer by the formal product is so much cared for that not only the social function but also the programmatic functioning fails. Continuing to define the limits of autonomy from the critical discourse of Tzonis and Lefaivre, it may be scrutinized that the idea of autonomy is clearly linked to the graphic means at that time.

The idea of autonomy cannot be thought as a novel approach in architecture (1984), as Lefaivre and Tzonis focus in the concepts introduced by Vitrivius and Alberti where one may trace the lines of an autonomous architecture. Yet, these former

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[98] Lefaivre, Liane and Tzonis, Alexander. "The Question of Autonomy in Architecture." pp. 25-42.

[99] Ibid. p. 32.

attempts are not observed as "problematic" as the ideal of an autonomous architecture has only been attained after modernism. It may be observed both from the lines of Tzonis and Lefaivre and the further theories introduced in the Harvard Architectural Review that Modernism is under question through the critique of autonomy in architecture in the mid 80s:

> "In light of the modern movement's failure to fulfill its social program, it is indeed not surprising that architects today refrain from making grandiose promises and from assuming the responsibility for the fate of the world."[100]

This statement of the editors of the Harvard Architecture Review (Anker, Andrew, Mark Kessler and W. Scott Clark) on autonomy clarifies the critical interface that occurred between the socio–cultural subsistence and architectural production within the Modernist Project. Another seminal position that should be mentioned within this critical issue of contextual relevance in modernism is the Bauhaus Architecture relying on the logical positivist doctrine. Meyer explains how, "instead of sentiment, historicity, or nationality, the basic elements of housing design were to be fixed empirically".[101]

Despite the decontextualized position is clearly stated through the agenda of Bauhaus Modernism, processed within the epistemological feedback of Logical Positivism, the thesis specifically focuses on the debates of autonomy and contextualism in the 70s architectural agenda. Therefore, the relationship between Logical Positivism and Bauhaus Modernism is the subject of yet another dissertation and shall be looked in during the further ramifications of this thesis.

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[100] Anker, Andrew, Mark Kessler and W. Scott Clark. *Harvard Architecture Review*. p. 5.

[101] Meyer, Hannes. "Building." *Bauhaus.* No. 4. reprinted in Wingler, Bauhaus, 1928 pp. 153,154.

3.2 Peter Eisenman's Position on the Autonomy of the (Architectural) Object

As mentioned before, few names could have been traced behind the theory of autonomy in the 70s that process autonomy as a novel approach in the spatial realm and suggesting affirmative notions to architectural theory and practice. As mentioned above, Aldo Rossi is one of them whose effect and reflection on further theories seems vital. Among them, Peter Eisenman may be mentioned, yet to deal with this task of autonomy from a very subjective point of view. Eisenman presented the virtues of an autonomous position for architecture, hitherto formulating his own way of searching into the disciplines' interior qualities. The externalization of the cultural reference seems to endure in Eisenman's attitude which stands as the peak point of an autonomous proposal for architecture, in which a total erasure of the foundations of the discipline is recommended.

The relationship between disciplinary autonomy and the autonomy of the architectural object that has been further clarified by K. Michael Hays seems significant in order to understand Eisenman's specific position on the autonomy of architecture. On this point, Hays states that;

> So, there's a distinction: the autonomy of the object required a degree of disciplinary autonomy, and the disciplinary autonomy had the expectation of generating autonomous objects. Let me be clear that I don't think architecture can ever really be autonomous. What interests me is that at one point in its history it very much desired to be.[102]

On the same paragraph in his essay in Perspecta 33, Hays asserts the Houses of Eisenman as purely autonomous objects. It may be inferred through the lines of Hays that by accomplishing the autonomy of his objects, Eisenman attempted to appeal to disciplinary autonomy. To a certain extent, it is also possible to understand Hays

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[102] Hays, K. Michael and Kogod, Lauren. "*Twenty Projects at the Boundaries of the Discipline Examined in Relation to the Historical and Contemporary Debates over Autonomy*." p 56.

statement so that Eisenman created autonomous objects off the architectural discipline. In both circumstances, the case is that Eisenman places the accent less upon the disciplinary autonomy than the autonomy of the architectural object he isolated from the external context.

Through the degree of autonomy of his objects, Eisenman was a leading figure on this issue to convey the concept of "autonomy" to architecture to further challenge the discipline's inherent existence. He further proposed the concept of "Presentness" to criticize the intrusion of the concepts of sign through historical deposit, thus, put a question mark on the historical contextualism in architecture to subsist, for instance in the case of Critical Regionalism. Regarding this issue, Eisenman, states in his letter to Derrida;

> Presentness is the possibility of another aura in architecture, one not in the sign or inbeing, but a third condition of betweeness. Neither nostalgic for meaning or presence nor dependent on them, this third, non-dialectical condition of space exists only in an excess that is more, or less, then the traditional, hierarchical.[103]

In order to portray the specific position Eisenman developed for architecture's autonomous existence, it may be useful to refer some attributions to Eisenman's approach. Eisenman has been usually mentioned within the framework of neo–rationalism during the late 70s and early 80s. It may be looked at Mario Gandelsonas' definition for this neo–rationalist ideology with its antagonist neo–realism. Gandelsonas states that;

> Neo-rationalism and neo-realism: these two terms describe more or less exactly the two antagonistic ideologies that share the present architectural scene…Neo-rationalism depends on the idea of an architecture that is autonomous, that is, on an architecture which, in the eyes of the most radical architects within this tendency, transcends history and culture; an

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[103] Eisenman, Peter. "A Reply to Jacques Derrida." *Critical Architecture and Contemporary Culture.* Oxford Uni. Press, 1994. p. 41.

> architecture which is a force in itself, a language that speaks about itself and which does not communicate ideas other than its own. Neo-realism, in contrast, is historical and cultural; it cares for the present, for the other aspects and practices of culture.[104]

These two opposite ideologies forged by Gandelsonas are also significant for the thesis to note contradictions and transcendentalizations observed within the issue of historical and cultural contextualism. Yet, within the scope of this thesis, the concept of neo-rationalism is ultimately related to Eisenman's concept of autonomy. Gandelsonas suggests the positions of Eisenman, Aldo Rossi and John Hejduk as neo-rationalist, while citing Robert Venturi at the core of a neo-realist attitude. Gandelsonas opposes these two ideologies and their forerunners in many approaches they developed with respect to the concepts of history and culture. So far, he also asserts both attitudes as essentially anti–functionalist. In terms of their regressive position with respect to the functional aspect of architecture for the sake of a return to the discipline, Gandelsonas even attributed a Manichean position to the neo–rationalists, that is to say to autonomous approaches. The position offered by Gandelsonas against this dialectical contradiction of both anti–functionalist approaches is Neo–Functionalism. His position may be inserted within the framework of non–polarized attitudes in the course of context/autonomy, such as Stanford Anderson, K. Michael Hays and Diana Agrest. Yet, rather than the position that Gandelsonas developed, the response of Eisenman to Gandelsonas' initial declaration on anti–functionalism shall be investigated to further outline Eisenman's position.

In his essay Post Functionalism, Eisenman clarifies two basic forms of thought in architecture.[105] He introduces the concept of modern dialectic in opposition to the old

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[104] Gandelsonas, Mario. "Neo-Functionalism." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture,1973-1984*. Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998. p 7.

[105] Eisenman, Peter. "Post-Functionalism." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984.* Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998.

humanistic tendencies in architectural discourse.[106] He criticizes Gandelsonas' inclination on the functionalist doctrine where the opposite is defined as formalist. Eisenman's specific position may best be detected during his approach towards the form-function opposition reminded by Gandelsonas. On this issue, Eisenman states that;

> This proposition continues to refuse to recognize that the form/function opposition is not necessarily inherent to any architectural theory and so fails to recognize the crucial difference between modernism and humanism.[107]

Thus, Eisenman unquestionably eliminates a theory of functionalism that is drawn by cultural dictation. He rejects the aspect of function as a universally accepted element of architectural design. Therefore, once this elimination occurs and the old humanistic tendencies are advanced to meet the demands of an industrialized modern world, Eisenman suggests that an "evolution of form itself may occur."[108] Form in this sense is certainly the architectural object freed from the functional aspect, defined as that which compels the discipline to respond both to programmatic and socio-cultural demands. Regarding this issue of functionalism, Eisenman suggests that; "the theoretical assumptions of functionalism are in fact cultural rather than universal."[109]

Gandelsonas conceives of Eisenman's attempts for creating a unique language for architecture as a reaction to the limitations of functionalism.[110] He thinks that to

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[106] Ibid. p 12.

[107] Ibid.

[108] Ibid.

[109] Ibid.

[110] Gandelsonas, Mario. "From Structure to Subject: The Formation of an Architectural Language." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984.* Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998. p 202.

overcome these limitations Eisenman introduces an architectural syntax as a basis for formal conception rather than a mere abuse of linguistic analogy between architecture and literature. As also stated by Gandelsonas in a linguistic structuralism of architecture, Eisenman criticizes the attributions made in terms of "meaning" in architecture. In this way Eisenman eliminates the relation between form and meaning, to look into the form where the semantics of use are denied. Accordingly Gandelsonas states that;

> Considering form in its syntactic capacity, Eisenman sees it to be ordered according to specific laws internal to architecture and not derived from notions outside itself.[111]

Gandelsonas mentions Eisenman's series of Houses as a concretization of this syntactic system where the elements acquire meaning not within a functional logic but through their relationship with other elements and the rest of the structure. Gandelsonas asserts that through these experiences the traditional definition of meaning in architecture is challenged by Eisenman where formal structure is related to a social or conceptual function typically. Gandelsonas clarifies that Eisenman thus unearths intrinsic architectonic notions of shapes that do not necessarily carry functional (in terms of cultural and social) aspects. Eisenman's distinguished notion of autonomy may best be explained by his use of linguistics in processing a superior ruling syntax – not semantics - between forms. Yet, there still remains the question of the relationship between these forms and their reception by the user/interpreter. Gandelsonas explains this interface between the perceiver and the architect stating that;

> In his work, the form is supposed to establish a linear communicational relation with the interpreter-user, that is, to address his capacity to read visual configuration, to be clearly recognized and understood.[112]

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[111] Ibid. p 203.

Eisenman on the other hand asserts that especially House II is not the issue of a single interpretation and may also be the act of a real house operation.[113] On further explaining his series of Houses, Eisenman reveals that each object – House - questions our long-lasting assimilations of architecture.[114] For instance; he asserts that the traditional understanding of hierarchy in architecture is challenged through House III, where both the divisions, columns, walls and openings had been given equal concentration. He cites this challenge of hierarchy (through House III), materiality (through House IV) and further grounded notions of architecture as a condition of architecture's interiority.[115]

Figure 2: House II in Vermont by Peter Eisenman.

Eisenman Architects, http://www.eisenmanarchitects.com
Last accessed in December 2006.

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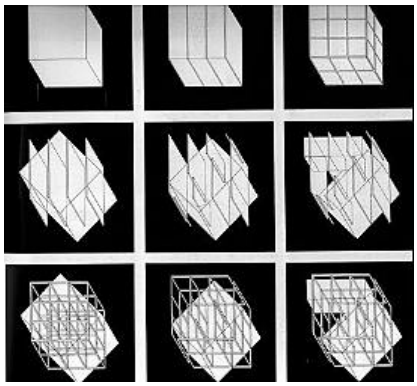
[112] Gandelsonas, Mario. "From Structure to Subject: The Formation of an Architectural Language." p. 215.

[113] Eisenman, Peter. "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." *Diagram Diaries*. London: Thames & Hudson, 1999. pp. 66-67.

[114] Ibid.

[115] Ibid. pp. 68-72.



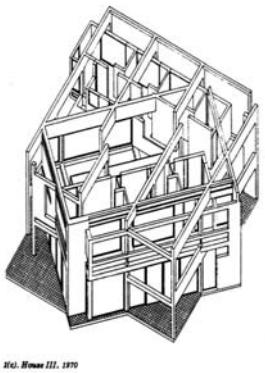


Figure 3 (left) : House III - transformations by Peter Eisenman.

Architecture and CAAD, Zurich,
http://caad.arch.ethz.ch/teaching/nds/ws98/script/object/st-object3.html.
Last Accessed in December 2006.

Figure 4 (right) : House III – axonometric model by Peter Eisenman.

Collisions and Interactions: A Philosophical Perspective on CATAC 98. David Kolb,
http://www.dkolb.org/arch.urb/catac-dk.html
Last Accessed in December 2006.

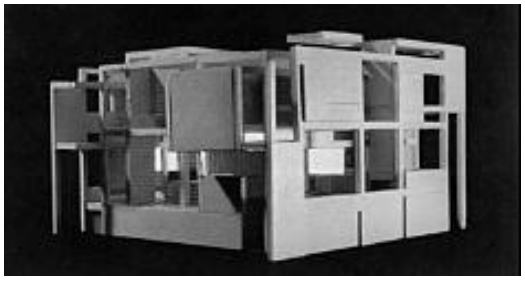
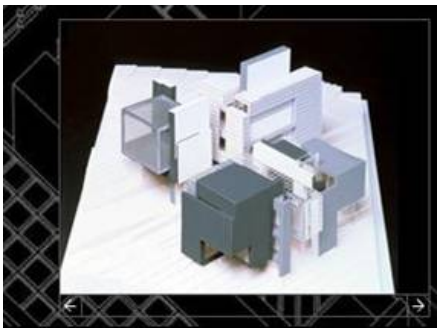


Figure 5: House IV by Peter Eisenman

Architecture and CAAD, Zurich,
http://caad.arch.ethz.ch/teaching/nds/ws98/script/object/st-object3.html.
Last Accessed in December 2006.



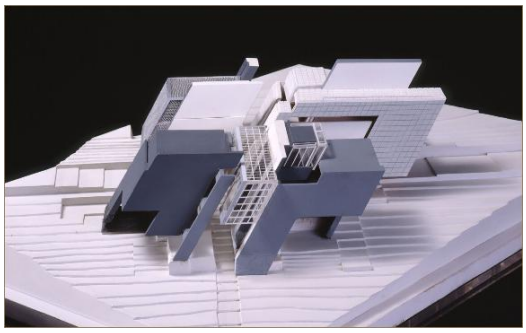


Figure 6 (left): House X by Peter Eisenman

Figure 7 (right): House X by Peter Eisenman

Eisenman Architects, http://www.eisenmanarchitects.com
Last accessed in December 2006.

Among the influential experiences of Eisenman on the autonomy of forms, House X has a significant position in terms of the evolution of the architectural language he proposed. House X comes as a critique of the former objects. By decomposition as opposed to the former ones and their ending up into an enclosed unity, Eisenman poses a post–humanist critique to the traditional attribution of functions to forms[116] – forms that are compulsorily "composed" to create a meaningful unity to serve for a certain cultural function. Not forms themselves but their unity, centrality, symmetry is decomposed through House X, where the *death of rationalism and humanism*[117] is signified through fragments of houses set together.

Actually, some of these experimental projects have been built where highly metaphorical even allegorical aspects are assigned to architectural methodology to challenge it in terms of graphic means, architectural historiography, typology and architectural production. The expected de–contextualization has received reactionary citations in architectural platforms. It is worth mentioning one of the critiques that is

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[116] Gandelsonas, Mario. "From Structure to Subject: The Formation of an Architectural Language." p. 206.

[117] Gandelsonas, Mario. "From Structure to Subject: The Formation of an Architectural Language." p 218.

attributed to Eisenman in terms of this metaphorical challenge externalizing the contextual input. Kenneth Frampton criticizes Eisenman's rather larger scope projects than his series of houses, as the interface between the context and the project is much more felt. Accordingly he states in reference to his Berlin Friedrichstrasse housing (1982 – 86) and his Wexner Center for the Visual Arts at Columbus, Ohio (1983 – 89) that;

> With this singularly apocalyptic work Eisenman introduced the quasi – Dadaist modus operandi with which he has been occupied ever since – namely, the derivation of form from more or less arbitrary overlays of different grids, axes, scales and contours, irrespective of whether these happen to have any connection with the real context.[118]

Figure 8 (left): Wexner Center for the Visual Arts at Columbus, Ohio by Peter Eisenman

Figure 9 (right): Wexner Center for the Visual Arts at Columbus, Ohio by Peter Eisenman

Eisenman Architects, http://www.eisenmanarchitects.com
Last accessed in December 2006.

[118] Frampton, Kenneth. *Modern Architecture: A Critical History.* London: Thames and Hudson Ltd, 1992. p. 312.

3.3 Mutual Exploration to the Debates of Autonomy and Critical Regionalism

It is important to note that the contextual reference rejected in autonomous architecture and the one welcomed in regionalist attitudes are considerably distinct. It may be asserted that especially the level of context dealt within the scope of regionalism is much more local and assigns directly to the local cultural formation. Yet, the suggested cultural penetration that is rejected in the autonomous approach may be said to comprise also the socio-political dimension which is obviously diverging from a mere counter-regionalism. Moreover, though in some discourses on autonomy and critical regionalism can be observed to contradict each other, as in the case of Tzonis and Lefaivre, it is hard to cite these attitudes as two opposite sides of a certain discourse in the architectural theory. On the contrary, it may be said that these two approaches that may be contradictory in several essential points, are constituted on separate critical theoretical standpoints on architecture.

It can not be argued that the Critical Regionalists focused on the cultural reflection to the extent that they overlooked the formal aspects of architecture. They even chose formal methods to concretize that historical and cultural tendency, though that was not the purpose. Yet, it is a fact that the cultural reflection set as the ultimate aim of Critical Regionalists has been rejected in the autonomous approaches in architecture.

Thus, this thesis' purpose is not to oppose two attitudes in their approach to contextual reference or to cite a dichotomy between the two, but to illustrate the binary oppositions that flourished in the separate discourses of both attitudes. Still, the critical interface between regionalism and autonomy in architecture is worth mentioning through varying outcomes of both discourses. Kenneth Frampton as one of the leading theoreticians of the movement called Critical Regionalism poses critiques to the idea of autonomy in architecture. With respect to the externalization of the historical realm through disciplinary autonomy, Frampton states in his essay "On Reading Heidegger" that;

> The present tendency to polarize the quintessence of built form as though it were of necessity one single thing appears to my mind to be nothing other than an ideological refusal to confront historical reality.[119]

On the other hand, Frampton tends to deal with the idea of autonomy in arts in a constructive way, where the notion of aesthetics is dealt in a critically distinct approach than in architecture. Frampton clearly draws a line between artistic production and the art of construction:

> Autonomous artistic production certainly has many provinces but the task of place creation, in its broadest sense, is not necessarily one of them. The compensatory drive of autonomous art tends to remove it from the concrete realization of man in the world and to the extent that architecture seeks to preempt all culture it consciously divorces itself from both building and the realm of historical reality.[120]

At that point Gadamer's previously referred viewpoint may be reminded, in which he deals with the act of building as the art of architecture and addresses both the environmental and formal aspects inherent to an art of architecture.[121]

It is also important to notice that other theories than the debate of autonomy and critical regionalism could have been mentioned in a context dissertation. There are for instance sub–theories of critical regionalism that flourished in relation to the essential agenda. Critical Tropicalism is one of them worth mentioning, by the works of Paul Rudolph and Richard Neutra, intensified within the boundaries of Brazil and Sri Lanka.[122] More to the point, Frederic Jameson and his influential theory on the

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[119] Kenneth Frampton. "On Reading Heidegger." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984.* Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998. p. 6.

[120] Ibid.

[121] Gadamer, Hans-Georg, "The Ontological Foundation of The Occasional And The Decorative." pp. 127-142.

[122] Tzonis, Alexandre. "*Critical Regionalism: Architecture and Identity in a Globalized World.*" p. 6.

relationship between politics and space may also be further interrogated that has recalled attention on the issue of dependence of architecture on politics.[123] Space Syntax[124] is yet another inquiry on the relationship between the spatial formation and social milieu that has its focus especially on the city structures and their independence from the social formation.

The reason for focusing on these two approaches – Critical Regionalist and Autonomous - is that both influenced the architectural discourse to a great extent with their positions on contextual assessment. It is also important as stressed previously that the idea of context and its reflection on architectural theory and practice show variations according to the content and the weight of the concept of context. Within these two approaches observed in detail, there may also be experienced certain levels of differentiations in the definition and treatment of context through its content and reference system. Therefore, the reason for an explication of these two approaches lies not essentially in their fundamentally opposed positions with respect to contextualism, where one would resist to and the other assimilate the notion of context. On the contrary, the diversity observed within the critical discussion of context is worth mentioning for a mutual exploration of these two approaches. The case could have been made through a dialectical opposition of Neo–Rationalist and the Neo–Realist Ideologies, exemplified respectively by Aldo Rossi and Peter Eisenman as opposed to Robert Venturi and Colin Rowe. The architectural Agenda of the 70s and 80s would have been sufficient to introduce the degree of contextualization and de–contextualization undergone through both facets, with approximately a one to one correspondence. Or Stuart Cohen's synthetic approach to the binary opposition Physical Context versus Cultural Context could have been adequate to introduce the course of contextualism

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[123] Jameson, Frederic. "Is space political?" *Anyplace*. Ed. Cynthia Davidson. Cambridge: MIT Press, 1995. pp.192-205.

[124] B. Hillier, A. Leaman, P. Stansall, M. Bedford. "Space Syntax." *Environment and Planning B.* Volume 3, 1976. pp 147-185.

in architecture where inclusivism and exclusivism are at work.[125] Yet, by a mutual interpretation of Critical Regionalism and Autonomy in Architecture, the possibility of a multi–layered apprehension of the concept of context in architecture has been expected here to appear.

The reflections of these approaches are still apparent in the recent architectural agenda. In a period where globalization is at practice to the full extent by the aid of technological developments that reinforce the interchange of ideas, concepts and methodologies through world wide communication systems, there is observed an utmost interest in cultural identity within the critical discourses. Therefore, the discipline of architecture is also undergoing such validation of culture, where a critical discourse is settled referring to former debates on the issue of contextualism in architecture. This association of the recent advancements in architectural methodology and the issue of autonomy shall be dealt in the following section with reference to the Perspecta volume 33 and a revitalization of Eisenman's concept of autonomy through computational advances in architecture.

3.4 Reflections of the Autonomy Debate in Architecture at the end of the 20th century

Perspecta 33, 2002 – Mining Autonomy, at first sight, may be regarded as foreign to the aura of the 70s, as an attempt to revitalize the concept of autonomy through the framework of recent transformations undergone within architectural methodologies. These transformations comprise both the visualization techniques that trigger the drawing process, such as CAD programming and the design methodologies that interrogate the authority of the architect to process interdisciplinary interactions. Yet, despite being stressed by the editors, these developments and their effects on architectural production and its relation with the issue of autonomy have been barely

[125] Cohen, Stuart. "Physical Context/Cultural Context: Including it All." *Oppositions Reader: Selected Readings from a Journal of Ideas and Criticism in Architecture, 1973-1984.* Ed. K. Michael Hays. New York: Princeton Architectural Press, 1998. pp. 65-86.

introduced. The issue 33 of Perspecta can be assessed rather as a flashback into the debate on autonomy in the 70s, 80s and barely in the 90s. Though the essays selected are not dated that early, the dichotomies and binary oppositions formed through the debate that had taken place in the 70s seem to be perpetuating, such as context and project, culture and form, universal and particular.

The essays in Perspecta 33 – Mining Autonomy that revitalize the issue of autonomy shall be explored to the extent that they pose alternative notions to the previous debate in the 70s and 80s, and furthermore clarify the reason behind this revival of the autonomous position in relation to the present theories on spatial transformation through novel technologies.

Anthony Vidler's essay "The Ledoux Effect: Emil Kaufmann and the Claims of Kantian Autonomy"[126] may be referred to for an origination of the idea of autonomy. Though it is aimed in this thesis to stay within the limited agenda of the 70s autonomy debate and its further reflections on the recent scene of architecture, it is important to note that Vidler summarizes the initiation of the idea of autonomy in architecture that is also essential to the 70s agenda. Vidler mentions of Le Corbusier, Adolf Loos and Mies van Der Rohe as the first architects who practiced the possibility of autonomy in architecture. As an epistemological positioning of the debate of autonomy, Vidler further explores the efforts of Emil Kaufmann who dared to transform the Kantian concept of the "Autonomy of the Will", to process it through the architectural discipline.[127]

On the other hand, Diane Ghirardo, links this will for autonomy with the ignorance of the socio–cultural problems that pushes the domain of architecture to a decentered, a-historical and autonomous position. Accordingly she states that;

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[126] Vidler, Anthony. "The Ledoux Effect: Emil Kaufmann and the Claims of Kantian Autonomy." *Perspecta*. Vol. 33, 2002. pp. 16-28.

[127] Ibid.

> It is much easier to play games with cardboard, titanium, or computer graphics than it is to struggle with nearly intractable problems of affordable housing or urban sprawl, energy crises, or any of a series of major problems which we confront today in the built environment.[128]

This critical remark that is aimed at criticizing the autonomous agenda of 70s, and especially Peter Eisenman – whom she defines as a legend for his indifference to political, economical and functional consideration - also poses a critique the recent advancements in architecture with the introduction of computerized systems. Through Ghirardo, one may easily detect the attribution of autonomy to these recent studies in the computational domain that shall be dealt extensively in the subsequent part in their concern for the problems confronted in architectural production.

Robert Somol and Sarah Whiting, in their essay "Notes around the Doppler Effect and Other moods of Modernity" on the contrary, consider the idea of autonomy as a non–stop intensifying procedure for architecture.[129] Autonomous process of design is apprehended as a transformation of the representational character of architecture to a projective one that does not necessarily ignore the social aspect for the sake of formal aspect. Their theory seems seminal in introducing the recent diagrammatic positions as a positive notion engendered through the interiority of architecture replacing the indexical sign of architecture to a more dynamic one.[130] Likewise, they reformulate the polarities grown in the course of Modernism (culture and form; kitsch and avant-garde; literal and phenomenal, objecthood and art or capitalist development and design[131]) on the issue of autonomy to recall a non–polarized attitude as in the case of betweeness advanced by K. Michael Hays. Bernard Cache's

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[128] Ghirardo, Diane. "Manfredo Tafuri and Architectural Theory in the U.S., 1970 - 2000" *Perspecta* Vol. 33, 2002. pp. 42-43.

[129] Somol, Robert and Whiting, Sarah. "Notes around the Doppler Effect and other Moods of Modernity." *Perspecta*. Vol. 33. 2002. pp. 72-77.

[130] Ibid.

[131] Ibid. p. 73.

essay on the transformations undergone within the geometry that is reflected in architectural methodology may be regarded as a further argument in favor of Somol and Writing's enthusiasm for projective geometry. Cache, while introducing projective geometry as a positive notion, warns the contemporary scene of architecture for a rapid overlooking of Euclidean Geometry for the sake of topology. Accordingly, he states that;

> Piling up topology on top of classical geometry, are we not missing the intermediary step? Are we not putting things too simply when we oppose the cube to the blob? Is there no other solution than the modernist grid and the contemporary free form? Can't we find supple regularities? To be sure, morphing software enables us to link anything with any other thing. But isn't it the path that matters? By simply rejecting polygons to promote NURBS, don't we miss a geometry for our projects, a projective geometry?[132]

The interview the editors Perspecta made with K. Michael Hays, Lauren Kogod is vital for the recent computational advances since the issue of autonomy was to be related upon the projects processed by digital processing techniques and simultaneously in search for invoking architecture's inherent or novel capabilities.[133] On the other hand, the interview seems also crucial for explaining about the reason behind this renewal of autonomy discourse by reminding the general framework of the debate in the 70s to comprise the leading names and theories. As mentioned previously, Diana Agrest and Peter Eisenman were responsible for the key definitions of autonomy and their hypothesis can be carried out to read the recent projects on the trajectory of autonomy.

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[132] Cache, Bernard. "Gottfried Semper: Stereotomy, Biology, and Geometry." *Perspecta.* Vol. 33. 2002. p. 86.

[133] Hays, K. Michael and Kogod, Lauren. "Twenty Projects at the Boundaries of the Discipline Examined in Relation to the Historical and Contemporary Debates over Autonomy," p. 71.

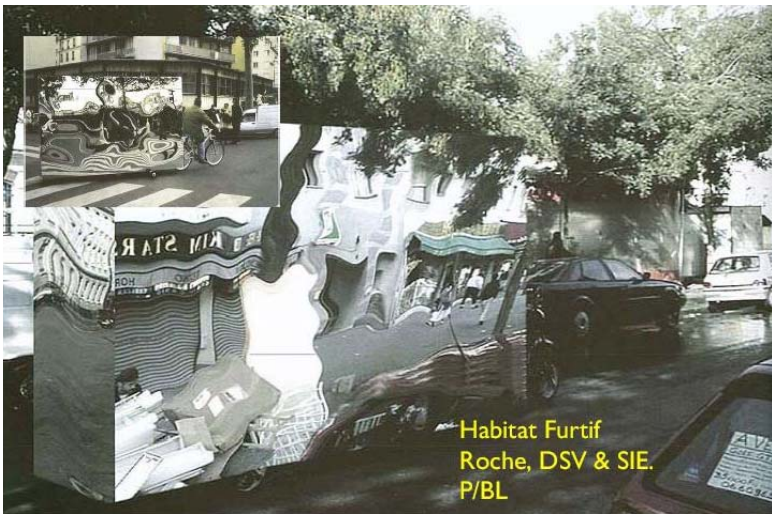

Figure 10: Habitat Fortif by Roche, DSV & Sie.

New Territories. R&Sie...www.new-territories.com/roche%201998ter.htm.
Last accessed in December 2006.

For instance the Habitat Fortif by Roche, DSV & Sie is considered by Hays as forging new relationships between architecture and its physical context by the potentials of digital mutations that remind this issue of autonomy in oblique relations to the general discourse structured within the context and project. K. Michael Hays' assessment on the "interdisciplinarity" processed through the advancement of novel technologies in architecture seems also as a crucial remark on the issue of autonomy.[134] This notion of interdisciplinarity that made possible the information exchange between architecture and other disciplines may be reminded with respect to the assertion of architecture as an isolated field of knowledge in the autonomous approaches, especially by Peter Eisenman on his introverted perception of architectural methodology. According to that kinship, Hays states that;

> Within the discipline there's also a proliferation of media and materials. It's obvious that there's going to be interaction with other discourses and

[134] Ibid.

> other disciplines. The proliferation will break down boundaries, but there's still an architectural knowledge and specifity of practice that's irreducible. There's something that can't be explained in terms of other discourses or other disciplines.[135]

This issue of interdisciplinarity has extreme significance for the scope of thesis, and shall be dealt in last place on the origination of the relationship between the recent methodologies in architecture and the drawing of disciplinary boundaries. Furthermore, the degrees of formality are questioned through various projects that are dealt within the course of latest developments on digital methodologies that relate them, then, to a discourse of autonomy. The claim for form in the issue of autonomy in the 70s had been dealt by Hays as a critique of the reduced definition of the discipline, where an autonomous approach was expected to challenge and expand the disciplinary potential with the concept of "effect"[136]. This concept of effect is then defined more as a powerful architectural tool than a mere visual satisfaction, and this transition of the concept of form to a more potential one – effect – is explained by Hays within the context of new design methods. He states on that point;

> So, we're moving away from euphoria and hedonism and ecstasy to a more calculated, swerving, adjusting, tuning, but always in a decentralized and multiple way, engaging the given, but not identifying with the given.[137]

Hays searches the deeper logic of the forms articulated by the novel methodologies that augment the essentials of form with the capability of organizing, controlling and managing the effects produced by it. Peter Latz' Landschaftpark in Duisberg-Nordin Germany is asserted to experience such effectuation of form, by Hays. Diller and Scofidio's Blur Building is also dealt with such an organizational character of its formal structure that breeds out from the engagement of novel computational

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[135] Ibid. p. 69.

[136] Ibid. p. 69.

[137] Ibid. p. 68.

medium with design. Yet, the same formal character of these recent buildings is also criticized by Hays to the extent that they are spontaneous, not authored and have their own Kunstwollen in terms of a negative notion of autonomy in architecture.[138]

Figure 11: Landschaftpark in Duisberg-Nordin, Germany by Peter Latz.

Trajekt. http://www.trajekt.org/?tid=1&id=97.
Last accessed in December 2006.

Figure 12: Blur Building by Diller and Scofidio

Diller Scofidio + Renfro, http://www.dillerscofidio.com/projects.html.
Last accessed in December 2006.

> What we are seeing in high-end digital imaging should make us suspicious because the projects all look like the software itself. The technology is overly controlling and overly determining.[139]

Hays suggests that this problematic relationship between technology and architectural form-making is suggested to be overcome by "rescaling and reframing" this visual effect to a material and spatial effect, however by the capability of the same technology that creates this problem.

To summarize, as seen above some recent projects and theories are interpreted within an autonomous approach, where the discipline's interiority is further searched

[138] Ibid. p. 61.

[139] Ibid.

through the potential unearthed by computational software and tools or on the contrary, where the disciplinary boundaries are blurred that which was once clearly drawn in the debates on autonomy. Former works and theories on the issue of autonomy are re-construed to be related to this recent re-concern for autonomy through computational transformations in architectural methodologies. Eisenman and his former experiences are significant through this re-interpretation. His former works are constantly referred to and reflected upon re–opening the inquiry of autonomy in architecture as Hays and Ghirardo do in Perspecta 33.

3.4.1 Reinterpretation of Peter Eisenman's Theory on Autonomy

Eisenman's "objects," which were initially experienced as the predecessors of the autonomous approach to design, are perceived within 30 years of their production as the initiators of a diagrammatic practice by R.E. Somol.[140] Actually Eisenman also utilizes such a terminology to describe his approach to representation in his Houses. In his essay on House VI in 1977, Eisenman states that;

> The designs for House VI are symbiotic with its reality; the house is not an object in the traditional sense – that is the end result of a process – but more accurately a record of a process. The house, like the set of diagrammatic transformations on which its design is based, is a series of film stills composed in time and space.[141]

The autonomous approach of Eisenman as a basis for the paradigm of diagram coincides with the recent innovative methodologies in architecture where the authority of the computational medium in architecture has begun to flourish. Right after Eisenman observed the significance of the diagrammatic practice in contemporary architecture, he re–names his houses or objects as the "Diagrams of

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[140] Somol, R.E. "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." *Diagram Diaries.* London: Thames & Hudson, 1999. p. 10.

[141] Eisenman, Peter. "House VI." *Progressive Architecture.* 1977. p 59.

Interiority" [142] in the Diagram Diaries where he re-conceptualizes his former works and introduces recent works. There he tries to read his former studies on the interiority of architecture together with his recent works where the accompaniment of the computational medium is noticeable. Eisenman sees and interprets both his former and recent works in a continuum where the ultimate request for architecture's interiority is evolving. He even re-reads the concept of Presentness he developed earlier in his conversations with Derrida through this Diagrammatic approach. Accordingly he states that;

> Presentness in this context is described as nothing more than an act, an event of signing that is manifest in real space/time with no reference to the future or the past. The conditions for Presentness as a condition of architectural time, or architecture as a condition of act, are present in the diagram seen as an indexical sign.[143]

Eisenman, re-interprets the Presentness concept he developed earlier, as the third condition of the architectural object.[144] Unlike function and meaning, referred to as the two initial conditions of architecture, this third condition of Presentness inherits the element of time for design in which he utilized in House IV. He recommends the "indexical sign" inherent in the third condition to unearth the possibility of a self–referential system. R. E. Somol depicts the significance of diagrammatic practice in architecture, where time is introduced to the spatial realm as a contributor to the autonomy of architecture. Accordingly he states in his introductory essay for Diagram Diaries that;

> There is the disciplinary autonomy that relies on typology, and the alternative call associated with the neo-avant-garde that understands autonomy as a process of self-generation or self-organization, a model that allows for formal-material emergence or transformation without

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[142] Eisenman, Peter. "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." p. 44.

[143] Ibid. p. 73.

[144] Ibid.

> authorial intervention, where time is an active rather than a passive element.[145]

The popularity of the concept of topology through the computational domain in architecture is also noticed by Eisenman.[146] Eisenman re–evaluates the geometry of the House IV as the initiator of topological geometry. He re–reads the concept of decomposition applied to House IV in terms of time through this diagrammatic practice that made possible the existence of topological geometry, which he regards as the necessity of an architecture of interiority.

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[145] Somol, R.E. "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." p. 10.

[146] Ibid.

CHAPTER 4

THE COMPUTATIONAL ENVIRONMENT: A DEVIATION FROM THE TRADITIONAL ROLE OF CONTEXT IN ARCHITECTURE

In the essential agenda of late 90ths and early 21st century architecture, context and related notions of cultural and regional characteristics have begun to reshape the recent discourses in the architectural agenda. The increase in the number of publications that deal with this issue of culture and place-identity show that there is a rising attention even a state of alert in the architectural domain on the issue of culture. According to this shift, Neil Leach, in the preface of Rethinking Architecture states that,

> It (this volume of the book) attempts to situate architecture within a broader cultural context, and to consider not only how debates from cultural theory, philosophy and so on might begin to inform a discussion about architecture, but also how architecture and the built environment might offer a potentially rich field for analysis for cultural studies and other disciplines.[147]

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[147] Leach, Neil. *Rethinking Architecture: A Reader in Cultural Theory*. London & New York: Routledge, 1997 p. vi.

On the other hand, it may be clearly stated that this revaluation of cultural feedback and contextual inclination in architecture is directly related with issues of globalism and universalism observed within the spatial realm, that are being dealt with as a threat to cultural identities. This issue of globalism is linked to recent technological developments transforming the essentials of urban life. The response of the architects and theoreticians to this new paradigm shaped in relation to advanced technologies is various.

At first there is the issue of technology and architecture that is concerned in the architectural domain in terms of the transformations that occur in the spatial realm. These are further underpinned not only by critics of architecture but also the philosophers who assess this interaction as a novel epistemological interrogation. The theories developed by Paul Virilio and William Mitchell shall be inspected through this first relationship of technology and architecture.

Paul Virilio, in his seminal essay "Overexposed City" focused on the audio-visual control mechanisms – he mentions as "interfaces" - that bring with the demolition of privacies at the urban scale. Accordingly he states that;

> "In banks, in supermarkets, and on major highways where tollbooths resembled ancient city gates the rite of passage was no longer intermittent. It had become immanent. From the palisade to the screen, by way of stone ramparts, the boundary-surface has recorded innumerable perceptible and imperceptible transformations, of which the latest is probably that of the interface."[148]

Virilio, consistently notes changes brought about with the use of information and telecommunication technologies and how they decompose the city structure.[149] This transformation is rather introduced as a problem concerning the situation and the

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[148] Virilio, Paul. "The Overexposed City." *Lost Dimension*. New York: Semiotext (e), 1986. p 21.

[149] Ibid.

movement of citizens. Virilio also asserts what he calls an identity and security chaos within these transformations that dissolve the concept of the city boundary. At that point, he criticizes these extensive use of technologies to turn the city into a limitless electronic space, stating that *"the essence of urbanism is decomposed by the transfer, transmit and transmission systems"* ,[150] This affected, a crossbred milieu, he contends, as a space where man is made to reach a certain perception of the real through images virtualized by information science and robotized systems.[151] In his book "Lost Dimension," Paul Virilio goes on to emphasize an unfolding in the city where the urban life is resolved through its major elements. This is an inquiry for which Paul Virilio theorizes a critical framework focusing on the ways the innovative technologies lead to the interface problem in the society.

Another reference to this debate may be William J. Mitchell's "City of Bits," discussing how our traditional, everyday understanding of urban life has changed. Mitchell suggests a functional transformation and formal challenge with the concept of the virtual that appear via telecommunication technologies.[152]

> "Once, places were bounded by walls and horizons. Days were defined by sunrises and sunsets. But we video cyborgs see things differently. The Net has become a worldwide, time-zone- spanning optic nerve with electronic eyeballs at its endpoints."[153]

Mitchell questions the architects' responsibility for design in mutual engagement with virtual and public spaces, an architectural problem defined as the making of the real and virtual city co-habit, a task also addressed by Virilio.[154] Hence, both authors

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[150] Virilio, Paul. "The Overexposed City." p. 21.

[151] Virilio, Paul. *Virilio Live.* Ed. pp. 70-71.

[152] Mitchell, William, J. *City Of Bits.* London: MIT Press, 1995. pp. 8-34.

[153] Ibid. p 34.

[154] Virilio, Paul. *Virilio Live.* p. 80.

assert that the technological devices of communication decomposed the physical ways of communication and social gathering, disrupting the physical environments that not only house, but also trigger these activities.

Other than these transformations undergone within the urban structure, a second kinship also emerged between the spatial realm and novel technologies. It is the construction of built space. Beginning from design process, to the manufacturing stage, a transformation has occurred in the built space by way of new technologies and means of communication. This transformation is obvious in all stages of the act of building, where one may assure certain positive notions such as the accelerated drawing process, improvement of representation methods (that facilitate the communication between the architect, client and the construction team) and easiness at the stage of construction. On the other hand the transformation of the construction scenario affected the basic notions of design. For instance, the orthographic set has been transformed into the motherboard, the perception of the draft and the actual building has been changed. Thus, the computational logic used in the technologies utilized during the drawing and construction processes, also challenged the architects to use it in the design process. The use of this computational logic in the design process leads to a more complicated kinship in architecture than expected. Various software transforming the essence of architectural representation and production also affected the nature of the design methodologies to the extent that a re-definition has become inevitable.

The use of the digital technologies by various disciplines initially for rapid communication, wise programming and virtual mapping, aided architectural design to terrain unknown interfaces. At first novel formulaic approaches have been structured by the aid of this computative logic for the formation of various innovative series of formal families. Mark Burry and his theory of the paramorph, Greg Lynn and his notion of “animate form” may be mentioned within this fashion to challenge

the formal deposit born with the interface of computative logic and architecture.[155] On the other hand, computation, and more generally all kinds of information technologies, aided science and architecture to meet on the same platform. Inevitably, from this assembly of science and architecture, unpredicted and novel forms of thought bred to be reflected in design methodology.[156]

In fact, as stated by Antoine Picon in his seminal essay "Architecture, Science, Technology and the Virtual Realm," science and architecture have for centuries exchanged metaphors. Picon mentions the word "structure" from medical studies as a contribution to the architectural agenda that originally connoted the anatomical organizations of the bodies of living organisms in French.[157] It is possible to increase such linguistic interactions during the 19th and 20th century between architecture and the natural sciences – to mention physics, mathematics and biology.[158] Yet, within the extensive usage of the computational medium and of IT, a methodological exchange is asserted to have occurred between the spatial realm and scientific researches. Thus, the productivity of this exchange and gathering is much more effective than preceding interactions between architecture and other fields when compared to the recent engagement of scientific inquiry and spatial perception made possible by computational media.

This recent interaction between sciences and architecture may be said to open up brand new concepts for both fields, which in some cases, expand the disciplines'

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[155] Lynn, Greg. *Animate Form*. Princeton: Princeton Architectural Press, 1998. and Burry, Mark. "Paramorph: Anti-accident methodologies." *AD: Hypersurface Architecture II*. London, U.K: Academy Editions. 1999.

[156] Picon, Antoine. "Architecture, Sciences, Technology and the Virtual Realm." *Architecture and the Sciences: Exchanging Metaphors*. Ed. Antoine Picon and Alessandra Ponte. New York: Princeton Architectural Press, 2003. p. 294.

[157] Ibid.

[158] Ibid.

boundaries and reconstruct its innate definitions. In is study, the focus shall be on a shift in the architectural discipline and in the notion of context which is one of the key concepts of architecture. It may be said that as mentioned in previous chapters, “context” has been consistently defined on the same axis to oblige the kinship between society and architecture in a vicious circle. In some cases “context” has been transcendentalized, and in others it has been totally rejected. In both cases between context and the architectural realm only a problematic bond has been enabled. It may be asserted that by the introduction of algorithmic, morphogenetic and biogenetic researches into architecture through computational media, “context” for the first time, has been processed as a productive resource for a spatial act. Moreover, this new redefinition of context inherits its full meaning because of the processibility of the computational interface that enriches architectural principles through various scientific contaminations.

Before monitoring the redefinition of the concept of context as evoked by computational approaches, it may be looked at briefly to this novel atmosphere in architectural domain fashioned by the introduction of novel technologies and computational logic. It may be summarized as such that, two basic attitudes in the architectural domain have been formed in reaction to this new era of technology in architecture: These can be defined as the generative and the conservative approaches that both analyze advanced technologies on their effects on the fundamentals of design.

4.1 Generative Paradigm within the Techno-Scientific Innovations in Architectural Design

Among the generative approaches to the paradigm of technology in architectural design, there has been an affinity with the positive sciences and their recent challenges on computation and artificial intelligence to flourish novel and

revolutionary design methods through new technologies.[159] Along with the experimental projects appearing initially as virtual constructs, and rather visual efforts, this generative bias to technology in the spatial realm found its reflection and legitimation through various platforms comprising the academic ground. To mention, Massachusetts Institute of Technology, established a new branch on architectural design education called "Computation," for further promotion of innovative technologies in engagement with architectural discipline, to develop novel design tools, just before the foundation of "MIT Media Lab" in the School of Architecture and Planning in 1980. The foundation of the department "Computation" in MIT precedes and may be asserted to provoke the research in the area of technology and design, and their further appliance by various practices.

The so-called "computational Approach" shall denote this perspective in the recent scene of architecture, to utilize various techniques that are basically introduced as the engagement of computable software with architectural design – to mention CAD, CAM, CNC technologies, and the software MAYA. Among the generative approaches under discussion, the exploitation of computerized systems goes far beyond representation and visualization especially in the "trans-disciplinary computational approaches" in architecture. The computative capacity of these programs is rather taken as a medium to accelerate and improve the design methods. For a brief outlook to the generic framework of these novel design techniques, the inquiry of Branco Kolarevic in his book "Architecture in the Digital Age: Design and Manufacturing" may be useful. [160]

Kolarevic deals with what he calls as "digital morphogenesis," focusing on the generation of novel morphing techniques and mentions a formal inclination in these

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[159] Picon, Antoine. "Architecture, Sciences, Technology and the Virtual Real."

[160] Kolarevic, Branko. *Architecture in the Digital Age: Design and Manufacturing*, Taylor & Francis Group, 2004. pp. 13-27.

attitudes. [161] Kolarevic's discussion of digital morphogenesis relies on the keywords; Topology, Non-Euclidean geometries, Nurbs, Parametrics, Dynamics and fields of forces, Datascapes, Metamorphosis, Genetics.[162] These terms transferred from mathematics, physics and biology are concerned with as the enablers of "topological, blob, folded, hybrid, flexible, instable, transitory, evolutive, organic, haptic, liquid, and fluctuated" forms showing off in installations, exhibitions and architectural publications. For instance, topology, as the study of geometry, is a basic equation enabling a structure defined with this equation to be geometrically defined in an infinite number of forms.[163] On the other hand, the Nurbs, as a system of geometry with its inclusion of points having weight points, enable designers to create surfaces that can be altered in time through various inputs. Also, as these points are of computer language, they can be transferred to the CNC machinery, thus enabling their construction.[164] Parametrics as an algorithmic method, transform architectural form by defining a generic equation so the relationships between variables. And as the variables change, the process replaces the stable with the variable.[165] Within genetics,[166] the rules of genesis of living organisms are imitated for form generation. Yet, instead of utilizing these systems individually, the hybridization of two or more is dominant in most cases as clarified by Kolarevic.

Within some radical approaches processing on the above mentioned techniques and methodologies – to mention Greg Lynn and his works on Animation techniques[167] –

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[161] Ibid. p. 12.

[162] Ibid. pp. 13-27.

[163] Ibid. pp. 13-14.

[164] Ibid. pp. 16-17.

[165] Ibid. pp. 17-19.

[166] Ibid. p 23.

[167] Lynn, Greg. *Animate Form.*

there is an emphasize put on the formal procedures, that are put into operation without any real context. These approaches shall constitute the point of approximation of the issue of autonomy with the generative approaches where the formal aspect is overly determinant. On the other hand, this engagement with the computational medium evoked a much more contextual attitude in architecture, where above mentioned techniques are further utilized for a broader understanding of and engaging with the realm through interdisciplinary scientific construction. Before monitoring the two specific attitudes formed in relation to the possibilities flourished by the techno-scientific paradigm in detail, it may be looked at the critical attitudes reacting to the generative engagement of technological instruments with architectural practice.

4.2 Conservative Paradigm within the Techno-Scientific Innovations in Architectural Design

Conservative approaches may be defined at first for their critical stance to the engagement of architectural methodologies and especially architectural design with the novel technologies. This approach shall be dealt within its divergence from the critiques of the technological transformations and their dealing with the decomposition on the urban scale. Yet, for instance Anthony Vidler critically deals with technology pretentiously as a hazardous and ever all – transforming medium which is double processed through the utilization of new technologies in architectural design. It may be said that on uniting the critiques to technology and critiques to the use of technology on the level of design, these conservative approaches that will be below mentioned are ongoing a dilemmatic situation. Criticizing the transformation occurring on the urban scene in the course of electronic era is not the same thing as criticizing the transformation of the design methodology in architecture through technology. The two are obviously divergent debates despite relying on the tension between the same elements; spatial construction and technology.

Augmentation of the dilemma between technology and architecture to be repeated on the same axis is ineffective for today as these arguments has not been carried to a

reliable ground as explained by Mark Wigley in his essay "Resisting the City."[168] Wigley brings with the criticism of the reactions towards electronic era among the architectural domain to assert the debate has been much abused among professionals. Therefore, the more complicated kinship between architects and technological developments shall be looked at, in order to understand how this issue of technology and architecture has turned into something new and something in need of a closer look by the aid of critiques directly addressing this subsequent novel kinship.

It may be first observed that the experimentations on form among the architects that are engaged with the computative logic are criticized in terms of being unaware of the social dimension of architecture. According to that, Neil Leach states that;

> The sensory stimulation induced by these images may have narcotic effect that diminishes social and political awareness, leaving architects cosseted within their aesthetic cocoons, remote from the actual concerns of everyday life… Architectural design is reduced to the superficial play of empty, seductive forms and philosophy is appropriated as an intellectual veneer to justify forms.[169]

More to the point, Leach envisages the projects utilizing novel design techniques "confined to the utopian world of the screen" and their leading to the "exciting visual imagery" only in his latter book "Designing for a Digital World."[170] Thus, he notes the emerging digital potentiality immediately as a "critical counter-culture of tectonics in architecture".[171] Yet, it should be noted that, the so called seductive forms

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[168] Wigley, Mark. "Resisting the City." *Transurbanism.* Ed. Arjen Mulder. Rotterdam: V2_Publishing/NAI Publishers, 2002. pp. 104-120.

[169] Leach, Neil. *The Anaesthetics of Architecture*. London: The MIT Press, 1999. p. viii.

[170] Leach, Neil. *Designing for a Digital World*. London: Wiley Academy Editions, 2002. p. 9.

[171] Ibid. p. 8.

may inherit a deeper logic, what Leach calls a narration[172] or an unnoticed attribution to the functional aspect of architecture. On the other hand, it may be the case that the play of forms through the aid of new technologies would be a purposeful choice or a metaphorical attribution as it was in the autonomous architecture of the 70s.

Continuing with the critiques to digital technologies in engagement with architectural methodologies, Alicia Imperiale may be mentioned, who actually deals with this engagement as a proliferating notion for architectural design and looks into the works flourished within this engagement as a New-Flatness where the traditional understanding of surface in architecture is challenged.[173] Yet, she also sees a critical surface between digital technologies and their effect on design, stating that;

> "The ever present danger here is in a euphoric embrace of technology, which privileges the virtual as liberating, free and yet presents the material itself as incapable of expressing these virtualities. The product of an architect is by necessity virtual-drawings and maquettes. The built reality, on the other hand, is mediated by the forces of society and culture and media and capital as well."[174]

On the other hand, all these movements that Charles Jencks has exemplified as Organi-tech, enigmatic signifiers, datascapes, blob-architecture and fashion for waves and landforms on folding, and cosmogenesis are seized as wind blows.[175] Yet, Jencks finds something worth noting that unites all these strands which is the

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[172] Context as historical and cultural deposit of a spatial realm is redefined by Neil Leach as narration based characteristic of architecture presented as a virtue opposed to the formal and aesthetic capabilities of architecture in "Belonging; Towards a Theory of Identification with Place." *Perspecta*. Vol. 33, 2002. p. 127-133.

[173] Imperiale, Alicia. *New Flatness-Surface Tension in Digital Architecture.* Berlin: Birkhauser. 2000.

[174] Ibid. pp. 78-79.

[175] Jencks, Charles. *The New Paradigm in Architecture: The Language of Postmodernism*. Yale University Press, 2002. p. 77.

sciences of complexity as much as the evolutions in computer science.[176] Accordingly he states that:

> "A change of heart, a new vision for architecture? If there really is a new paradigm in architecture then it will reflect changes in science, religion and politics..." [177]

Figure 13: Imperial War Museum of the North in Manchester by Daniel Libeskind

Arcspace. Image Gallery. http://www.arcspace.com/sales/previews/libeskind_imw_pre.html. Last accessed in December 2006.

Accusing the global culture without a shared value system, Jencks asserts that this responsibility of reflecting the changes is suppressed in a *temptation to hide behind technical requirements.*[178] He only favors Daniel Libeskind in this new paradigm as he concerns the public symbolism to reflect the very recent fragmentation caused by technological effects.[179] Jencks emphasizes that, invoking the *cultural plane of*

[176] Ibid.

[177] Ibid. p.72.

[178] Ibid. p. 76.

[179] Ibid.

expression as a duty for architect[180] is only rehearsed in Libeskind's Imperial War Museum of the North, Manchester; recently among the designers he criticizes as being silent on this responsibility. Despite seeming vital for his opening up of multiple notions brought with technology and culture, Jencks' interpretation conflicts the technological paradigm at the urban level with the transformation of architectural design methodology due to novel techniques in engagement with science.

Brian Massumi goes more specific in criticizing the generative approaches and focuses on certain fashions grown within the techno-scientific paradigm.[181] Moreover, rather than the externalization of socio-cultural or contextual aspect to design - as is the case of former critics, Leach, Imperiale and Jencks - Massumi focuses on one of the techniques – topology – flourished within the recent novelties in architectural design and deals with its justification and legitimation. The problematic opposition between the abstractness of the digital space of topology and the spatial reality of bodies and buildings is accepted by Massumi as a widely held opinion in recent architectural discourse.[182] He criticizes the topological architecture mentioned previously in this chapter relying on a reference to Branko Kolarevic and which shall be further investigated within the scope of more contextualist attitudes within the computational paradigm. With respect to that criticism of topology as an aspect that is highlighted in the digital paradigm, Massumi states that;

> It (topological architecture) can't connect to the body as we experience it. Besides, you can animate architectural design practice as much as you like, but you still end up with a building that isn't going anywhere. It's all a sham.[183]

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[180] Ibid.

[181] Massumi, Brian. "Strange Horizon" *Architectural Design.* Vol 69: Hypersurface Architecture II, Ed. Maggie Toy and Stephen Perella. John Wiley and Sons Ltd., 1999. pp. 12-19.

[182] Ibid. p. 12.

[183] Ibid.

The critique developed by Massumi that is addressed to the researches on dynamics and animation shall be re-opened further in this study within the context of references to Greg Lynn where animation is claimed as an enabler of topology.[184]

On the other hand, these reactions cited against the engagement of the novel medium and technologies to techno–scientific improvements have been counter-argued by the theoreticians of the generative paradigm, for instance by Antoine Picon, who appreciates novel technological interface triggering the kinship between architecture and sciences.[185] His response develops in relation to the general atmosphere created more or less by Neil Leach and Alicia Imperiale and Charles Jencks;

> To the various critics who tend to play down the impact of computer on architecture, there is the response: the computer is only the tip of the iceberg. It is not that the computer in itself has changed architecture; it is that because both nature and society have changed, architecture is confronted with new challenges. Its intensive use of scientific metaphors appears as a consequence of such a situation.[186]

It may be summarized as such that, critiques intensified on the lack of function and contextual input with an overemphasis of formal novelties, as it was in the critics of the autonomy discourse. Yet, as above mentioned, conservative approaches tend to totalize all the efforts grounding on techno-science for architectural design. Engagement with technology on spatial level is prejudiced with a loss of functional concern. However, there are various methodologies grown with the introduction of computational logic and techno-science to architecture that shall be inspected specifically and separately. Among them, it is possible to survey different attitudes than these so called formalist approaches. Besides, the mentioned formal approaches

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[184] Lynn, Greg. *Animate Form*. 1998.

[185] Picon, Antoine. "Architecture, Sciences, Technology and the Virtual Real."

[186] Ibid. p. 302.

should be looked in detail with a critical yet constructive treatment for the novelties offered.

Though it is hard to categorize because of the manifoldness of the operations made in spatial level, in order to understand and get a generic framework, the recent experimentations within the techno-scientific framework shall structure certain groups. In this thesis, explicit positions to techno-science are going to be classified into two main categories according to the motivating energy behind. In the first hand, there is the engagement of technologies that actually provide a dissocial, autonomous position to the designer where the formal capabilities are given further attention. On the other hand, there are the techno-scientific researches that process various possibilities of technologies and interdisciplinary positions for the sake of a critical and responsible attitude to circumscribe the realm. It shall be shown that neither relatively formal approaches nor the scientific researches focus on the formal aspect the way the critics have preconceived.

4.3 Extension of Autonomy: Formal Paradigm within Techno-Science

The critiques mentioned in the former part addressed directly to the engagement of design and novel technologies are directed at particularly noticeable formal tendencies, enthusiastic with the novel formal possibilities rather than the ongoing socio-cultural deflections. In fact, within this first group of generative approaches - mostly ignorant of these critiques – there is the concentration on the potential of these technologies at the formal level where the terms of “blob” and “blobism” are mentioned as descriptive.

In the scope of the thesis, these form driven novel computational attitudes will be defined as an extension of the autonomous tradition in architecture where certain parallelisms and contradictory points shall be outlined for structuring the more general framework of “blob architecture.” By this link established with a much early dated discourse, it shall be shown that the reductive reading of these formal experiments as “blobs” would be insufficient. There may have emerged more

complicated and even productive kinships in a closer yet critical look to these recent formal tendencies with a flashback to the history of architecture.

In this so called formal tendency in the computational era of architecture, the autonomy claims of the 70s may be reminded in terms of an ignorance of social, political and discursive positions of the discipline with respect to formal novelties. It may be asserted that the autonomy of the 70s has been experienced but radicalized through technology, this time with the introduction of the interdisciplinary approach. The dissolution of the authorship that is experienced in the case of Eisenman is also processed in the case of recent approaches where the logic of computerized systems is highlighted at the expense of the author. What is expressed through the series of forms is the principle of programming engaged with architectural design. The tendency towards the formation of the object observed within these recent approaches may be regarded as a formalism. Yet through the decline of the authority of the architect and the augmentation of the algorithmic codes lying beneath the formula of the object, it may be redefined as mathematical formalism.[187]

4.3.1 Blob Formalism

Zeynep Mennan locates the general framework of this formal enthusiasm[188] within the context of a growing process of virtualization and formalization with reference to Lyotard's book The Inhuman[189], and argues that "deploying new technologies,

[187] 18.03.04 Arch 527: Advanced Topics in Digital Constructivism, METU, Dept. of Architecture, course lecture notes on techno-scientific development and the debate on formalism.

[188] Ibid.

[189] Lyotard, J-F. *The Inhuman: Reflections on Time.* Trans. Geoffrey Bennington and Rachel Bowlby. Stanford, California: Stanford University Press, 1991.

digital architectures connect themselves to the techno-scientific research for guarantee of survival in environments other than the terrestrial".[190]

On the other hand, Zeynep Mennan also uses the term digital constructivism as a challenge to the self-expressive and formal tradition in architecture in her essay "Of non-standard forms: A 'Gestalt Switch'"[191]. The dependence of the formal structure – object - on the preferences of the designer has been demolished by the bounding principle, formula and logic. These researches on the logic of forms provide further parametric equations that enable functional characteristic of forms. Forms are dependent not on the choice of designer yet on the formula that once generated enacts multiple variations. Mennan defines the general framework of such non standard forms as a way for hyper-rationalism. Accordingly she states that;

> As form gets hyper-rationalized with an augmentation of accuracy in the control of parameters augmenting also predictive capabilities, it refuses its self-determination, self-prediction.[192]

For a detailed look into these novel capabilities of form and formalism within the computational researches in architecture, Greg Lynn and his theory - Animate Form[193] - shall be inspected in detail. His studies on the issue of animation in architecture are mostly mentioned in architectural platforms as the formal paradigm born with the novel design technologies, though it is not the case repeatedly stressed by Lynn.

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[190] Mennan, Zeynep. "The Great Virtual Library: Notes towards a Theory of Junk Economy." *CongressCATH 2005: The Ethics and Politics of Virtuality and Indexicality*, Leeds-Bradford, 30 June - 3 July 2005. See also Mennan, Zeynep. "Kültürel belleğin sanal saklama sistemlerinde zaman mekan ve anlam," *Mimarlık ve Felsefe: Zaman.Mekan, Mekan.Zaman*. Ed. A. Şentürer. Istanbul: Yapı Endüstri Merkezi Yayınları, 2007.

[191] Mennan, Zeynep. "Des Formes Non Standard: Un 'Gestalt Switch'." *Architectures Non Standard.* Ed. Migayrou, Fréderic and Zeynep Mennan. Paris: Editions du Centre Pompidou, 2003. pp.34-41.

[192] Ibid. p. 6.

[193] Lynn, Greg. *Animate Form*.

Lynn's theory of animate form initiates with a critique of stability in architecture that hinders the architectural realm to interact with the surrounding realm.[194] Then, he asserts that for warranty of permanence, verticality and typological fixity, earlier attempts in architecture that deal with issues of force, motion and movement failed to see anything other than gravity as a force that should be added to design criteria.[195]

With the introduction of computer-aided visualization Lynn assumes a rupture in architecture that exploration of calculus based forms have enabled, where time and movement actually engage with design procedure.[196] Organizational principles of these calculus based forms are further experienced by Greg Lynn in his projects, such as Embryological House and Port Authority Gateway Competition Project in NY, USA, 1995. Topology, time and parameter are defined[197] by Lynn as the three essential elements of these organizations that provide the dynamic character to them.

On the curvilinear appearance of these forms in sequence, Lynn asserts that the organizational system of these elements – topology, time and parameter – expectedly shows variation from the fixed forms of simple geometry as they are calculated through the play of differentials.[198] He is also critical to the labeling of these forms as organic in a stylistic and typologic manner. This transformation of formal vocabulary, he asserts is due to the contemporary mathematics and should be searched within the dynamics of non-Euclidean geometry.[199] On the further origination of non-Euclidean geometry and the kinship it established with architecture it may be looked at the Architectural Exhibition – Non Standard

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[194] Ibid. pp 10-11.

[195] Ibid.

[196] Ibid. pp 16-18.

[197] Ibid. p.20.

[198] Ibid. pp 19-20.

[199] Ibid. p. 23.

Architectures held at the Centre Pompidou in 2003[200] where experiments of Greg Lynn on form and animation are also included. According to this issue of form and movement that is one of the topical notions of the exhibition, Zeynep Mennan states in her catalogue essay that; [201]

> The challenge that these alternative non-Euclidean geometries represented was the possibility of surfaces or spaces with variable curvature, on which a figure could not be moved without being affected by changes in its own shape and properties, thus invalidating the Euclidean assumption of indeformability of figures in movement, that is, positing of an absolute unchanging form.[202]

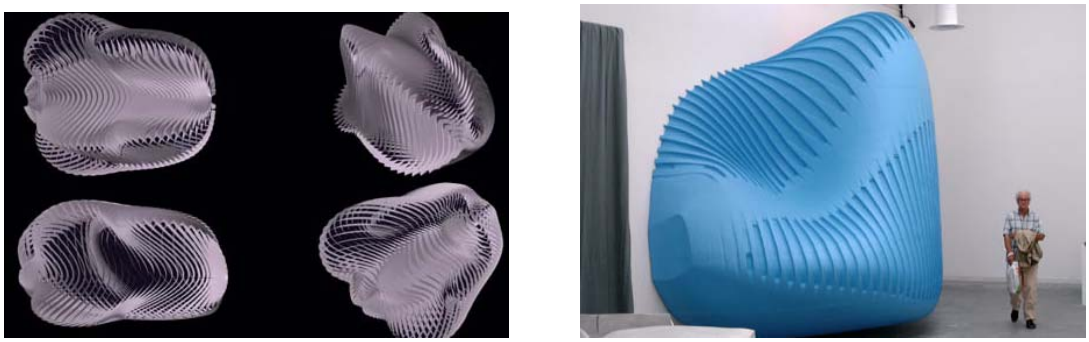

Figure 14: Embryological Spaces by Greg Lynn.

Greg Lynn. Form. http://www.glform.com/projects. Last Accessed in December 2006.

[200] *Architectures non standard*. Centre Georges Pompidou, 10/12/2003-01/03/2004. Curators: F. Migayrou, Z. Mennan.

[201] Mennan, Zeynep. "Des Formes Non Standard: Un 'Gestalt Switch'." p. 6.

[202] Ibid. pp. 5-6.

Greg Lynn's theory of Animate Form and Embryologic Space is based on these above explained possibilities of non-Euclidean geometry transferred to the architectural methodology by the aid of computer systems. Lynn's Embryologic House project is initially suggested as a domestic set of units composed in a 2048 paneled surface.[203] The network established between the panels of the surface is the essential aspect of design where endless positions are possible with consistent relationship to neighboring panels. As one movement occurs in one phase, it is reflected to others as opposed to the traditional neighboring relations. Brian Massumi's critique on the designers that deal with movement as a critical element of design may be reminded here, where in respect to the images of these houses we observe only certain phases of the movement of forms once animation is stopped. He states according to this dilemmatic situation confronting Lynn that;

> Design techniques based on continuity and movement rather than static form betray themselves in the fixity of their final product. If you are so stuck on continuity, where's the continuity between your process and its product? It's all very pretty, but why should we, your public – livers-in and passers-by – of your buildings – why should we care?[204]

It may be asserted that this embryological space is designed within the context and more importantly for the scope of the virtual realm that is set by the computational medium Lynn processes. However, the ultimate aim set by Lynn in interrogating the possibilities of non-Euclidean geometry and novel technologies of visualization in architectural form is reflecting and inheriting the characteristics of a dynamic context form would be situated in.[205] In this sense, Lynn may be affirmed within a contextualist approach to architectural design. Actually, in his theory – Animate

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[203] Also, novel techniques of construction – such as robotic computer controlled milling and high pressure water jet cutting machinery - are anticipated for the manufacture of units where the volumes owe their apertures to the torn, shredded and louvered panels that also respond to this soft, flexible, curvilinear organization. Migayrou, Frederic. and Brayer, Marie-Ange. *Archilab: Radial Experiments in Global Architecture*. London: Thames&Hudson, 2003. p. 262.

[204] Massumi, Brian. "Strange Horizon." p. 12.

[205] Lynn, Greg. *Animate Form*. p. 10.

Form – he claims the necessity of dynamism of form in relation to the dynamics of the contemporary city, built environment, surrounding topography and circulation of the inhabitants.[206] Besides, he prefers the term "technique" for the various media he utilizes within the advent of computational possibilities that he thinks more as expressive of cultural, social and political relations than as "technology" as an essential power.[207] Accordingly he states that;

> Form can be shaped by the collaboration between an envelope and the active context in which it is situated.[208]

He even asserts that the transformation of architectural methodology from a static status to an animate one that is related to the evolution of form would imply a shift "from autonomous purity to contextual specifity" [209]. By "contextual specifity", he denotes the dynamics of urban life that are arrested by the aid of architecture. Though Greg Lynn demands the movement to interfere with architectural design to adapt to the flow of the contemporary city,[210] how this animation offered in the virtual environment contrives in the stability of the built environment is a dilemma as explained by Michael Speaks in his essay "It's out there…The Formal Limits of the American Avant-Garde."[211] Accordingly Michael Speaks suggests that;

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[206] Ibid. pp. 28-34.

[207] Ibid. p 40.

[208] Ibid. p 10.

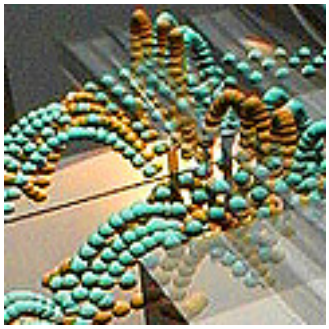
[209] Ibid. p 11.

[210] Lynn, Greg, "Form and Field." *Anywise.* New York, 1996. pp. 92-99.

[211] Speaks, Michael. "It's out there…The Formal Limits of the American Avant-Garde." *Surroundings Surrounded: Essays on Space and Science.* Ed. Peter Weibel. ZKM Kalsruhe Publication, 2001. pp. 572-586.

> He tries to make form animate, he tries to take form out to meet its urban exteriority, but in the end, he is only able to devise more and more animate techniques to design what are ultimately static forms.[212]

It may be assumed that the embryological houses have simply been an experimentation of various novel techniques to be utilized on further architectural ventures that have an actual setting and context, and that the virtual environment the forms are floating in is just a space model. Then, it should be looked at his related projects where a shift in the relationship established with the surrounding realm is expected to reflect its dynamics by the methodology of "animate form".



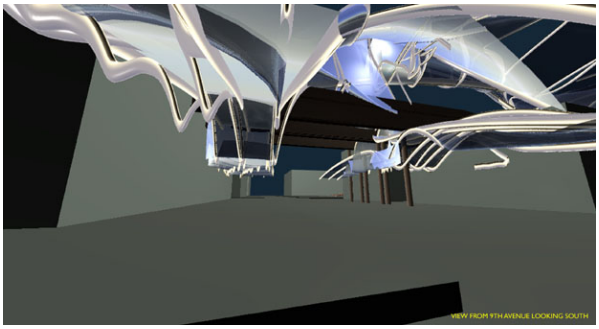


Figure 15 (left): Port Authority Gateway by Greg Lynn, diagram of exterior movement and forces
Figure 16 (right): Port Authority Gateway by Greg Lynn, South View
Greg Lynn. Form. http://www.glform.com/ Last Accessed in December 2006.

Port Authority Gateway is one of the projects where Lynn displayed his utmost interest in the dynamics of the movement and flow on the urban scale.[213] Offered as a projective roof and a ramp relating to the Port Authority Bus Terminal in New York, the tubular frames were the outcome of the speeds and movement along the Terminal.[214] Lynn introduces geometric particles to represent the forces of these

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[212] Ibid. p. 583

[213] Migayrou, Frederic. and Brayer, Marie-Ange. *Archilab: Radial Experiments in Global Architecture*. London: Thames&Hudson, 2003. p. 260.

[214] Ibid.

movements that he would later on transform into the frames to be built. These geometric particles, however, represent only certain phases captured from the movement flows. Thus, it is questionable whether he actually reflects the dynamics of the context or utilizes the mathematical graphs he gathered from the dynamics of this context for further formal experience. In accordance with this dilemma, ongoing to Lynn's attitude, Michael Speaks asserts that;

> Despite being pulled out into the exterior of architecture by his stated interest in urbanism, and by theoretical models such as those of Bateson, Lynn is more powerfully drawn back into contemporary American architecture's most powerful interiority: form. And strange as it may seem, he is lured there (like Assemblage) by his search for the new.[215]

The situation that Speaks suggested in the case of Greg Lynn may be extended to comprise further formal experiments within the introduction of computational techniques to architecture. The case may be doubled through the works of UN Studio where a diagrammatic approach is processed with new digital techniques as it is the case with the dynamics of Lynn. It may be thought that if the aim had been set by these approaches as searching for new formal vocabularies, the critical agenda mentioned previously might have been structured, diversely. In other words, if Lynn had not declared his interest in the urban conditions simultaneously with his enthusiasm on novel formal logic of computation, he wouldn't be mentioned and criticized that much within his claim of a contextual approach to novel technologies in architecture. Yet, again this time, he would have been criticized for overly focusing on novel technologies within a loss of contextual concern. The result in all these circumstances orients one to further comprehend the nature of these techniques, before scrutinizing these increasing number of formal experimentations and critiques incessantly meeting them.

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[215] Speaks, Michael. "It's out there…The Formal Limits of the American Avant-Garde." p. 577.

It shall be first noted that the pragmatic nature of computation should be kept in mind whilst interrogating these formal experiments. It introduces different levels of isolation from social concerns, through design where the formal logic of operations is increasingly cut from subjective interpretation.[216] Thus, cultural expression that is evoked in the subject is withdrawn depending upon the formation of the computative equation and the authorization of the architect upon the operation. The level and degree of consciousness in this isolation may also be regarded to be contained within the agenda of digital computation and the assemblage into which the designer articulates the parameters and the inputs of the operation. Designer - rather than a 'mediator' between the spatial realm and the cultural sphere - may be said to set himself as the 'articulator' of an internal generative logic, as in the case of Greg Lynn, which then itself produces a range of formal propositions for further development. Therefore, it wouldn't be wrong to detect in computational projects, a certain "ambition towards formal stages" rather than functional program, and an unintentional underestimation of the impacts of the socio-cultural structure of society.

The critics to the autonomous approach in the 70s may be redirected to the architects of the computational age. Vice versa, the critiques to these formal approaches within computative logic may be told as the continuation of the critical agenda of the autonomous tradition. For instance; Anthony Vidler is obviously critical to this enhancement of form as superior to the socio-cultural character of architecture when he states that;

> It is not surprising that the question arises once more in the context of a digitized fin de siècle, which seems to have substituted surface for

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[216] See Walter Benjamin's theory on the transformation of the subject, under the impact of mechanical reproduction. "The Work of Art in the Age of Mechanical Reproduction." *Illuminations*. Schocken, 1969. For another argument on the continuing possibility of subjective interpretation within the hermeneutical/computational interface, see Mennan, Zeynep. "From Number to Meaning: Prospects for a Quantitative Hermeneutics at Istiklal." *Architecture in Turkey around 2000: Issues in Discourse and Practice.* Ed. Korkmaz, Tansel. Ankara: Chamber of Architects of Turkey, 2005. pp. 121-132.

> structure, arbitrary form for function, technological hubris for social values.[217]

The de-contextualization - accompanying Lynn and others introducing novel formal vocabularies - does not come as a direct rejection of the cultural or site-specific context as in the case of logical positivists or Eisenman's autonomy. Obviously, there is a degree of rejection in such computational approaches as they do not take the cultural sphere or the local conditions as a first hand reference for design, and focus firstly on the technical side of the process that will breed the form. There is also the utmost endeavor to structure a syntax system, a unique language within architecture that is common in autonomous and computational approaches. For instance, the experimental projects proposing alternative structures flourishing directly from the formula created by the software, to constitute various formal populations, have been seen as the visual products of a de-contextualized and dissocialized self-referential computational logic, as pictured by Antoine Picon in his seminal essay "Architecture, Sciences, Technology and the Virtual Realm." [218] According to this formalist worry, he states;

> Digital Architecture is often accused of being based only on formal manipulations. The very notion of manipulation, however, goes hand in hand with experimentation. [219]

These formal experimentations could well be claimed to be de-contextualized and asocial. Greg Lynn, Mark Burry and some other professionals processing on animation technologies and the transformation of the stability of form for continuous reformation through series of software programs may be regarded as operating

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[217] Vidler, Anthony. "Any Mores." *Surroundings Surrounded: Essays on Space and Science.* Ed. Peter Weibel. ZKM Kalsruhe Publication Program, 2001. p. 630.

[218] Picon, Antoine. "Architecture, Sciences, Technology and the Virtual Realm." pp. 292-313.

[219] Ibid. p. 311.

autonomous approaches to set aside the contextual input fed by either geographical, or cultural and political condition of any given setting.

Yet, the degree of autonomy in this approach is diverging from the preceding periods when architects intentionally requested for the inherent directories of the discipline. In many of these formal approaches in the computational domain, it is hard to observe a subject – context dichotomy as was created throughout the contextualism debates in the 70s and 80s (the critical Regionalist and autonomous attitudes summarized in the first section) in architecture. Obviously, the syntax systems in the computational domain launch diverse organizations, from the rather autonomous attitudes. Computational approaches seem to emphasize, (but not transcendentalize) the utilization of the information technologies for the revealing of their formulation.

Along with that, the basic distinction that computation entails for architecture comes from the fact that the computational approach processes simultaneously one or more scientific methodology, thus developing an interdisciplinary position while the concept of autonomy unquestionably rejects any contribution from other disciplines, self-defined in a state of total closure and inward looking into architecture. Whereas in computational approaches there is the ultimate engagement with other disciplines and all sort of external informative notions though the cultural, social or political are set aside in some cases. This multi-disciplinarity – that stands as one of the essential characteristics of architecture[220] - averts computational approaches in architecture from being autonomous and brings with the generative position to them. This interdisciplinary position is also a deviation from much contextualist approaches that overemphasize the contextual reference. On the contrary, a trans-disciplinary attitude is structured in computational approach to "simultaneously" set the referee and the architectural methodology to play. Within the agenda of so called blob architecture, where the tendency towards formalism is obvious, trans-disciplinarity is triggered to

[220] Mennan, Zeynep. "Theory on Borderlines: A Collective Experience and a Free Market." *Shifting Borders, Negociating Places: Cultural Studies and the Mutation of Value(s)*. Ed. Adkins, B., Bennato, D. et.al. Rome: Bordighera Press, 2006. pp. 65-85.

the extent that the formulaic formalism is enhanced and legitimized by an engagement with theories and methodologies borrowed from mathematics, physics and biology.

4.4 Extension of Contextualization: Environmental Approaches

This second approach dealt within the more general framework may be explored in the interest in techniques such as topology, dynamics and fields of forces, datascapes and genetics mentioned by Branco Kolarevic.[221] Through these techniques, the ubiquitous conditions of the surrounding realm have been tried to adjust to the design methodologies. In fact, novel technologies introduce such a possibility of investigating and understanding the essentials of the environment by their augmented capacity to analyze and synthesize through divergent scales.

Extension and expansion of the concept of context relies on a profound analysis of the environmental factors through the potential offered by the computational medium. This analysis may be economical, ecological, biological, statistical or based on the movement and flow of the environment. These analyses of the surrounding realm are reflected to the design through the computational medium enabling a linkage between sciences (that are used for scanning the environmental qualities) and architecture. In her essay "Of non-standard forms: A 'Gestalt Switch'"[222] Zeynep Mennan states in accordance with this interdisciplinary situation that:

> Indeed the transdisciplinarity and ubiquity of this new paradigm with a double biological and computational essence has drastic implications and consequences on architectural form.[223]

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[221] Kolarevic, Branko. *Architecture in the Digital Age: Design and Manufacturing.* pp. 13-27.

[222] Mennan, Zeynep. "Des Formes Non Standard: Un 'Gestalt Switch'."

[223] Ibid.

This biological essence transferred to the architectural methodology may be asserted as the proliferator of the most productive experimentations in the techno-scientific paradigm. Yet, the use of biology in architectural design is not limited to the scanning of contextual aspects. Though in some cases – as in the case of R&Sie… - biology is consulted for such contextual reliance, it is mostly referred for importing the operational principles of living organisms to the architectural design. It may be asserted that the tradition in architecture of imitating nature and natural principles is challenged to a broader limit by this new trans-disciplinary status. Genetics as a branch of biology has been investigated by many researchers in the computational paradigm to further utilize the organizational principles of genes in architectural design. As stated by Timothy Lenoir and Casey Alt in their essay "Flow, Process, Fold"[224], the interaction between these disciplines relies not only on architecture's relating with computational logics but also novel ramifications in biology such as bioinformatics to cause a paradigm shift. Accordingly, they state that;

> A number of architects have been similarly affected by engagement with computers, and they have looked to computational biology for metaphors to articulate the new directions in which they want to take architectural practice.[225]

Another important point that should be opened throughout these rather contextual researches is that even if the issue of context holds a major role, it is not transcendentalized. It may even be suggested that it is de-transcendentalized. The concerns on other disciplines, socio-cultural status, natural specifications, polar direction, and topological properties have been processed mutually and simultaneously with the new architectural techniques and methodologies. It may be asserted that this new contextualism is one that is epistemically experienced architecture as well as in its methodology. The discipline and practice of architecture

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[224] Lenoir, Timothy and Casey Alt. "Flow, Process, Fold." *Architecture and the Sciences: Exchanging Metaphors.* Ed. Antoine Picon and Alessandra Ponte. New York: Princeton Architectural Press, 2003. p. 326.

[225] Ibid. pp. 314-351.

is called to engage with the surrounding disciplines that effect and relate with architecture on the cultural level.

4.4.1 From Interdisciplinarity to Trans-disciplinarity

From biogenetics to geology, various disciplines that may be informative on the surrounding realm have entered into the scope of architecture. Yet, only by the quest of the information technologies, utilized by these disciplines, supportive data has been usable for spatial research. In relation to this interface, Antoine Picon asserts that;

> For this new type of connection between architecture and science, the computer, of course is central. The numerical simulation that it orchestrates represents something truly experimental.[226]

Though inter-disciplinarity does not constitute a brand new concept for architecture, as it has always relied on *polyvalent contexts* and may be defined, as *inherently syncretic* stated by Zeynep Mennan,[227] it may be suggested to be at work in its full enactment with the introduction of computational logic. Computational means may be said to enhance and further promote the dissolution of disciplinary knowledge through a common arithmetical medium to breed a novel fusion of scientific inquiry and sensory spatial construction. Thus, beyond being a justification ground or mere contextual reference, the scientific, empirical knowledge may be redefined as another axis of architectural production through the works of computational domain and especially R&Sie…who may be defined as the processor of the rather secondary attitude, which triggers a re-contextualization as architectural methodology.

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[226] Picon, Antoine and Alessandra Ponte. *Architecture and the Sciences: Exchanging Metaphors.* p. 14.

[227] Ibid.

4.4.2 Exploration of the Spatial Realm within Micro and Macro Scales

Once the transdisciplinarity is achieved and the multi-layered structure of the context is scanned by the architects through the aid of various sciences, they began to utilize this data in their design. By an awareness of the surrounding realm with its multi dimensions, contextualism has been recalled yet with a transformation in its essence.

This awareness of the surrounding realm can be better exemplified through Bohm's mentioning of electrons and their behavior with and in a superior contextual sphere:

> An electron is ordinarily a particle, but it can also behave like waves, and light which ordinarily behaves like waves can also behave like particles; their behavior depends on the context in which they are treated. That is, the quality of the thing depends on the context. This idea is utterly opposed to mechanism, because in mechanism the particle is just what it is no matter what the context. [228]

One of the important contributions made in context's redefinition is Manuel De Landa's seminal book "A Thousand Years of Non-Linear History."[229] This research may be thought as an aid to reread the surrounding realm, through a different panorama, one that simultaneously does process Bohm's above mentioned scale and all-encompassing historical setting. This panorama may be said to be far away from being social, geological or biological, yet comprising all of them, at the same time. There have been structured three essential histories in the theory of DeLanda – biological, geological and linguistic where all are required to figure multiple coexistences and interactions on their formation.[230] For instance, in the biological history, he deals with cities as parasitic entities where the acts of invasion and

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[228] Bohm, David. "Postmodern science and a postmodern world." *The Reenchantment of Science: Postmodern Proposals.* Ed. D. R Griffin. NY: State University of New York Press, 1988. pp. 63-64.

[229] De Landa, Manuel. *A Thousand Years of Non-Linear History*. Zone Books, 2000. p 20.

[230] Ibid. p 21.

commerce are paralleled with the life of parasites.[231] In the case of architectural discipline, if the surrounding spatial realm that is at the point of an architectural or urban transformation is viewed through such a panorama to involve all its multi-layered inputs (say the social, cultural, geological and biological layers), its "context" may be said to be defined in its full extent. Moreover, such a multi-layered outlook, by dealing with the micro and macro scale formations at the same time, enacts the dynamic and interactive nature of the context. After DeLanda's multi–layered view of the surrounding realm fed into the definition of context in architecture, the externalized, even underestimated conditions and elements of the surrounding realm become valuable and called for in the design process. Only in the course of such an outlook to the surrounding realm, the definition of context undergoes a transformation. This requirement has been definitive for the recent enthusiasm for scientific inquiry in the architectural realm.

As DeLanda deals with cities as parasitic organisms, the structures and growing strategies of genes have been re-read by architects to be reflected in the design methodology. Below will be mentioned some theories and projects that experience this transdisciplinarity and interrogation of the spatial realm through different scales. These constitute the secondary approach born with the introduction of computational techniques that we may define within an extension of the contextualism discourse in architecture.

4.4.3 Morpho-Genetic Researches in Architecture

In the first portion of this part, it will at first be dealt with theories that investigate the relationship between sciences and architecture that enable novelties in architectural methodology. Subsequently few projects from various architectural offices shall be

[231] Ibid. p 20.

considered within their effort to get engaged with the contextual terms triggered through transdisciplinary researches.

In "Designing Digital Space"[232] Daniela Bertol opens up how the issue of genetics, when mixed with the algorithmic structure of computerized systems, may provide for further modes of design.[233] Regarding the definition made by Bertol, Algorithm as a specific mode of doing mathematics has the capacity to produce structures which continue to emerge over time.[234] Genetics as a branch of biology has been previously engaged with algorithms, as stated by Bertol, for the sake of further investigation on the evolutionary attitudes of genes and chromosomes.[235] In their engagement with a spatial discipline like architecture – for instance in the case of Marcus Novak – it is aimed that the concepts of mutation, fitness evaluation and selection[236] enter into the scope of design for novel methodologies promoting continuous emergence and evolution. It is stressed by Bertol that this second engagement occurs on cyberspace, where there is provided a common platform for a shared code system (0-1) with architecture. More to the point she states that,

> The genetic algorithm suggests a new liason between design and construction, is an efficient generator and arbiter of architectural complexity, and provides a valid means with which to pursue inhabitable architectures of cyberspace.[237]

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[232] Bertol, Daniela with Foell, David. *Designing Digital Space*. New York: John Wiley and Sons. 1997.

[233] Ibid.

[234] Ibid. p.237.

[235] Ibid. p 238.

[236] Ibid. p 237.

[237] Ibid. p 255.

The use of genetic algorithms in design is further questioned by Manuel DeLanda in his essay "Deleuze and the Use of the Genetic Algorithm in Architecture. "[238] His effort is on engaging Deleuze' philosophy with computational technologies especially the genetic algorithm that allows software to *breed new forms of virtual genes and the virtual bodily traits that they generate*.[239] What makes De Landa to create a synthesis of the two is designing fertile search spaces with the productive use of algorithms and the exploitation of related forms of thought that the computer is unable in conceptualizing the genesis of form.[240]

In consideration of the three stages of the genesis of form - *populational, intensive and topological thinking* that Deleuze mentioned in Capitalism and Schizophrenia for topological forms – DeLanda asserts that the genetic algorithm would mean much to architectural design as it does to biology or computer programming.[241] The populational stage precedes thinking form *as a synthesis of a larger reproductive community*[242] rather than a production of just one gathering of methodologies. In this stage, DeLanda suggests the addition of points to the CAD operations where spontaneous mutations may occur by the architect conscious of the "idea" of a form in progress. Thus, the intensive thinking is received after, where we may get the "*diversity of actual forms*"[243] from the lack of divisibility of intensive thinking referring to quantities that cannot be subdivided like temperature or speed. He traces this for architects as a representation of the stresses in a virtual building by the

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[238] DeLanda, Manuel. "Deleuze and the Use of the Genetic Algorithm in Architecture." *Architectural Design*. Vol. 72, no 1, January 2002. pp. 9-12

[239] Ibid. p. 9.

[240] Ibid.

[241] Ibid.

[242] Ibid. p. 10.

[243] Ibid.

intensive measures of structural engineering in the progress of production, via the aesthetic fitness provided by the architect.[244]

The third element of Deleuze's genesis of form is introduced as "topological thinking"[245] where de Landa contrasted the forms of genetic algorithm with the forms of biological evolution. He claims that biological forms inherit a limitless diversity through the end product with the aid of the genetic algorithm. What he does further is to link this situation to the intensive qualities of embryological formations that have endless variations like the body plans. The virtual multiplicity that they inherit is called "Abstract Diagram" by Deleuze, *operating by matter, not by substance, by function, not by form, giving rise to many different physical instantiation*.[246] DeLanda suggests a kind of trace of this biological evolution inheriting *a process of divergent actualization* introduced by Abstract Diagram theory to the genetic algorithm that is recently in use widely by architects in order to lead the software *beyond breeding.* In this way, he suggests the author would owe a signature in his own topological diagram constituting series of differentiating forms through the software.[247]

Marcus Novak who structures the concept of Transarchitectures where he deals with this methodology of genetic algorithm on his various experimentations at spatial scale. His project Data Driven Form processes both this algorithmic logic and the communicational capacity of the Internet.[248] Novak extracts data from two linked pages on the Internet to assume them as sets of two points that by the aid of an

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[244] Ibid. p. 11.

[245] Ibid.

[246] Deleuze, Gilles and Guattari, Felix. *Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis/ London: University of Minnesota Press, 1987. p 141.

[247] DeLanda, Manuel. "Deleuze and the Use of the Genetic Algorithm in Architecture." p. 12.

[248] Novak, Marcus. *Archilab: Radial Experiments in Global Architecture*. London: Thames&Hudson, 2003. p. 314.

algorithm develop two surfaces. Named Departure and Destination, these two surfaces are then linked to form a three dimensional enclosure.[249] The actualization of this enclosure in material terms are explained by Novak;

> In bodyspace, an instance of the output of the algorithm becomes the form of a material architecture, in nowspace; the material architecture is animated by fluctuating and invisible latent forms that are, in turn, connected to the forms in cyberspace, completing the cycle.[250]

Though none of them are actualized and owe an original context, he offers all his projects as "artifacts of the cultural outlook of trans-modernity."[251]

So far, through these two theories and the projects of Marcus Novak, there has been observed a trans-disciplinary position in architecture, where contextualism may be mentioned only in terms of engagement with other disciplines rather than engaging to surrounding realm. Architectural methods are regarded to be engaging with other disciplines for developing further design strategies and territorializing this novel awareness of milieu gained through computation. At this instant, it will now be moved on to the projects and theories developed on such a shift in architectural methodology where a double contextualism is undergone. By this doubling, it is meant that through trans-disciplinary approaches, contextualism is redefined in the level of architectural methodology and re-practiced as engaging with the surrounding realm through design, similar to critical regionalists, yet in a more intensive way.

MVRDV as one of the most spectacular offices in the computational paradigm works as a team thwarting disciplinary categories and joining with non-architectural

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[249] Ibid.

[250] Novak, Marcus. *AD Hypersurface Architecture.*, Vol.68, no. 5/6, May-June 1998. p. 29.

[251] Ibid.

professionals and methodologies, frequently.[252] Their project DataTown returned great reflections among architectural platforms, despite standing as a metaphor of the concept of density in architecture. In the definition made by the architects, certain dimensional data and demographic preconceiving exists, yet the project is neither an utopist model nor a relational diagram. It is a city of information; without a specific topography, context or ideological basement.[253] If composed of 6 sectors, for instance, in Datacity there exist 88,687 inhabitants.

It may be asserted that this kind of push applied to the limits of architectural discipline is made possible only through the advent of novel technologies that not only enable their visualization and representation but also their imagination. In the case of Datacity, it is hard to infer, where architecture begins and where statistics ends. Indeed, it may be thought as an implicit critique of economic processes and industrial production, where both are resolved into the bits through the gigantic scale of the city proposes. In accordance with the critical position of MVRDV, it is stated by Jaime Salazar that;

> While works of Duncan Lewis look for a re-elaborated contract with nature, MVRDV's activities are oriented towards a new elaboration of the relationship between architecture and industry.[254]

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[252] Winy Maas, van Rijs, Jacob and de Vries, Nathalie. *Archilab: Radial Experiments in Global Architecture.* p. 275.

[253] Ibid.

[254] Salazar, Jaime. "Critical Visions." *10x10: 10 Critics*. Phaidon Press, 1994. p. 417.

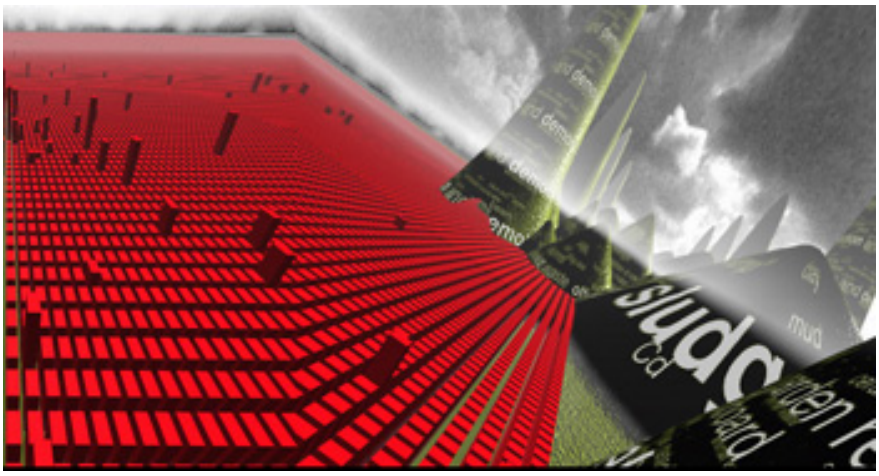

Figure 17: Datatown by MVRDV

Archined News, "A 3D-vision in urbanity by MVRDV.
"http://www.classic.archined.nl/news/9901/datatown_e.html.
Last accessed in December 2006.

FOA is interesting at first in terms of their challenge with the traditional binary oppositions in architecture. They interrogate the figure-ground opposition through the aid of computational means, where enhanced three dimensional technologies are introduced.[255] Ground is treated as a figure and the surface as a space through the approach of FOA, where enveloping of all is aimed through novel design methodologies.[256] Foreign Office Architects also retains a specific position within the computational paradigm in architecture by introducing the constructability of their Bezier spline based design Yokohama Post Terminal in Japan. The project aims at connecting the public spaces of Yokohama and cruise passenger flow in away that a seamless milieu could be created that will reflect the interaction between the urban space and terminal.[257] Their ultimate concern for the movement observed in the site is tried to be embedded to the final product through computational software that

[255] Moussavi, Farshid and Zaera-Polo, Alejandro. *Archilab: Radial Experiments in Global Architecture*. Ed. Frederic Migayrou and Marie-Ange Brayer. London: Thames&Hudson, 2003. p. 146.

[256] Ibid.

[257] Ibid.

made novel geometries possible to reflect that concern. Besides, this final product is thought as an ever-changing form where mobile and collapsible elements are introduced to adapt the needs for change through further investigations on the formation of the social structure. Accordingly, Jaime Salazar in his essay Critical Visions[258] stated that:

> Foreign Office Architects elaborate an operative form of the site that reconsiders the relations between the project and the contemporary urban landscape.[259]

More to the point, their collaboration with the engineering firm Ove Arup and structural designer Cecil Balmond[260], introduce a trans-disciplinary approach where the site is mutually designed and constructed through productive data flow between the two enabled by the computational medium shared.

Through these three approaches and more, one can observe that rather than borrowing from politics, from regional characteristics, from social discourse, there is the constitution of a common ground for economics, biology, genetics and the social realm of the so called context with architectural methodology, to dissolve the traditional concept of context. More to that point, R&Sie…practice is going to be looked in detail with their goal of dealing with the surrounding reality on diverse viewpoints simultaneously, at the spatial scale.

It is important to realize that there are various ramifications to context in architecture. Among all these divergent branches of the conception of context in architecture – context as the space-place; the transcendentalized Genius Loci, context to be defined as the rather historical preservation, context as the basic dedication to

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[258] Salazar, Jaime. "Critical Visions." p. 417.

[259] Ibid.

[260] Hays, K. Michael and Kogod, Lauren. "Twenty Projects at the Boundaries of the Discipline Examined in Relation to the Historical and Contemporary Debates over Autonomy." p 71.

the cultural realm to denote either politics, or social associations, or both of them – R&Sie… may be defined to be devotee to all of them in a more general framework. That's to say, R&Sie…, avoiding a generic reflection or transcendentalization of such concepts, looks for the rather micro-scale effects of these concepts on the physical environment to comprise even the least noticeable biological organisms.[261] And vice versa, R&Sie… brings the unexpectedly vital cross-kinship between such minor concepts and world-wide valid considerations in front of us.[262] Thus, as Roche states, the contextual base that R&Sie… has settled upon is - as it is put by them - "noaesthetic nohistoric but genetic." [263] François Roche – one of the founders of the architectural practice R&Sie…- on the interplay of science and spatial realm, states that;

> Instead of Science (fiction) remaining a domain for positivist and determinist propaganda, it should nourish the seeds of our own monstrosity – our own loss of control amid indeterminism, chaos theory[2] and biogenetics [264]

Computation here entails a vital role in the togetherness of these concepts of genetics and spatial concern. Accordingly, this *operational function of technology*[265] is emphasized in R&Sie… to reveal the decontextualization and re-construction of context in architecture. The mentioning of the context in the case of R&Sie…. may only be explained in terms of a mutually affective, tidal kinship between the macro and micro scale life forms. Here, Roche's statement on the inevitable kinship

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[261] Roche, François "(Science) Fiction & Mass CultureCrisis." *Architectures Non Standard.* Ed. Migayrou, Frederic and Mennan, Zeynep. Paris: Editions du Centre Pompidou, 2003. pp. 162-163.

[262] Mennan, Zeynep. "Delicious Decay." *Corrupted Biotopes_R§Sie…Architects.* (DD Design Document Series_05.) Seoul: DAMDI Co, Ltd., 2004. pp. 18-20.

[263] R&Sie...http://www.new-territories.com/roche%20biennal1.htm. Last accessed at December 2006.

[264] Roche, François. "(Science) Fiction & Mass CultureCrisis." p. 162.

[265] Roche, François. "morphous mutations" 2000. www.new-territories.com/ Last accessed at December 2006.

between the least noticeable actions that take place on earth and the urban scene may be reminded:

> Dust and pollution in Bangkok, mosquitoes and Nile River Virus in Trinidad, "hairs in the Snake" and "bovine heat" in Evolène, the bush scorched by sun in Soweto… these are the human and territorial raw materials that condition the local scene. Contrary to what Plato says in his Parmenides, where he doesn't bother to hide his distaste for what he considers ignoble elements, the lowest layers of being – materials like hair and dirt – are no less constitutive elements of urban economies, even if they issue from bankruptcy of city planning.[266]

Thus, it may be acclaimed that, this micro-scale elements to account on the transformation of the urban scheme, expand the content of the context and the spatial methodology to be constructive. What's more, not only in the scale of the context to be related to, but also this process of relating is also questioned and redefined in the case of R&Sie.… As it may be reminded, the context was transcendentalized in the case of Critical Regionalism for example, and the design process was constructed as the proper attachment of the project to the site. Otherwise, by the emphasis put on the interior qualities of architecture, in the autonomy of architecture, the formal result and its superiority over the external world was declared. R&Sie practices a rather equivalent tie, constructed between the context and the project, by Roche stating that;

> It is no longer a question of counterposing a project and its context, like two distinct hypotheses, but of linking them through the very process of transformation.[267]

At that point, the binary oppositions that were constructed on the concept of context are tried to be dissolved. Throughout this linkage, the redefinition occurs in the reciprocal relationship between the context and the project that are expected to affect

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[266] Roche, François "(Science) Fiction & Mass CultureCrisis."

[267] Roche, François "(Science) Fiction & Mass CultureCrisis." *Architectures Non Standard.* Ed. Migayrou, Frederic and Zeynep Mennan. Paris: Editions du Centre Pompidou, 2003. p. 162.

each other at the same degree, rather than the transcendentalization of the context in the case of the contextualists or that of the formal entity as in the case of autonomous architecture. To the attitude that R&Sie… settles upon, Zeynep Mennan states that;

> In this un-founded and non-hierarchical synergy melt down technological, aesthetic, social and political layers, to which the natural and the artificial open simultaneously.[268]

This synergy shall best be exemplified through morpho-genetic explorations focused on the biologic and genetic spheres of the human environment to propose alternative *multiple and mutant*[269] contexts for reference and to reformulate reciprocally. For instance, the Un-Plug Building that was suggested as a generic office building in Paris is a project that may be asserted as highly contextual by questioning the energy problem in Paris and even in the whole planet. There's the disconnection of the building from the urban ground and its energy network to utilize solar energy that one may assert a highly ecologic and economic side within, simultaneously un-plugging from one of the infrastructures of the contextual realm. Photoelectric cells and thermal sensors, worked throughout as the morpho-genetic organisms of the form, all that micro elements that constitute the building pose a problem on the energetic structuring of the urban realm.

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[268] Mennan, Zeynep. "Delicious Decay." pp. 18-20

[269] Mennan, Zeynep. "Le Contexte Français: l'Ouverture à l''Etranger'." ("The French Context: Welcoming the 'Foreign'") *Contextes: Pavillon Français*. 8th International Architectural Exhibition, Venice Biennale Orléans: Editions HYX, 2002. p 23.

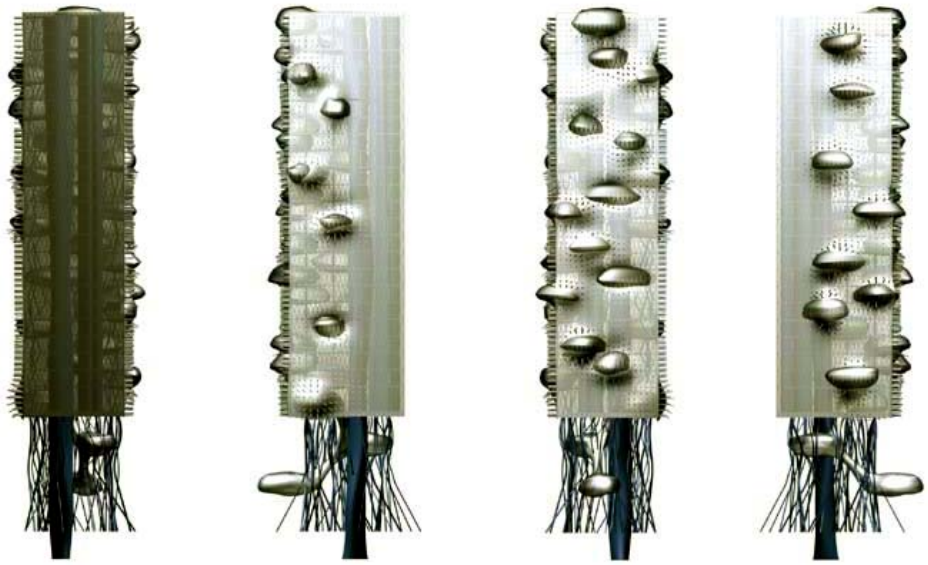

Figure 18: Unplug Building by R&Sie…

New Territories. R&Sie...www.new-territories.com/roche%201998ter.htm.
Last accessed in December 2006.

Therefore, a definitive challenge to the concept of context in architecture occurs in the approach of R&Sie… to end up with a specific novel concept of context applying *topos* to oppose the traditional definitive of context – *place.* To Roche, the context exists for an architectural approach yet no longer to remain *idealized, conceptualized or historicized*, yet exists as an *underlayer of its own transformation*.[270] One may assert throughout the physical disconnection that Un-Plug Building entails, a degree of alienation, yet one may simultaneously assert that there's an ultimate connection to the infrastructural problems of the urban realm and a strong political concern through this very act of energy concern.

[270] Roche, François. "morphous mutations." www.new-territories.com/2000.
Last accessed in December 2006. Last accessed at December 2006.

Thus, there's a diverging point in the morpho-genetic approaches of R&Sie… and the rather formalist experiments of the techno-scientific paradigm that don't mention a specific contextual reference – physically or emblematically. For instance in Greg Lynn's animation technologies there's a mere focusing on the object, in its formal formula created through computative logic. As Andreas Ruby interprets, the utmost consideration is the transformation of the specific context definition without constituting a binary opposition, rather looking for its destruction in the computation that R&Sie… enhances.[271] In comparing the rather formal approach in computation to R&Sie…'s attitude in relation to contextual transformation, Ruby asserts that;

> For R & Sie..., the primary potential of animation does not lie in the creation of a new formal vocabulary, but in the ability to map the characteristics of a place and directly apply them to its own transformation. If the architecture of Greg Lynn, due to its formalist fixation on the object, ultimately reinforces the dialectics of the building and its context, R & Sie... are using animation with the goal to precisely abolish this dialectics. [272]

It is important that Ruby mentions an *abolishment of the dialectics of building and context*, through the works of R&Sie…Indeed, these may be said to put a question mark on the whole history of the contextualism debate in architecture as a breaking free from such a strict dichotomy. It is the first time in the course of "architectural contextualism" that "context" is not mentioned as yet another nostalgic exploration or site-specific concern or as an obstacle to be ignored on the formal exploration.[273] Accordingly, as told by Ruby;

> In fact, the semantic dimension of places does play an important part in their projects; however in a way which is diametrically opposed to the contextualism of the 70's and 80's: thus a place is no longer a

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[271] Ruby, Andreas. "Transforming Continuity." www.new-territories.com/2002. Last accessed in December 2006.

[272] Ibid.

[273] Ibid.

> topographical archive filled with embedded traces of the past, which are only waiting to be excavated as artifacts in the present. To R & Sie…, territory and information fuse to the hybrid entity of territorially embodied information.[274]

This territorially embodied information is made only possible by the advent of IT to convene the biogenetic inquiry and spatial scan, made possible for a genuine research on the contextual terms through the works of R&Sie…It may be asserted that, without overlooking the contextual realm, R&Sie… give way to novel formal organisms; at the same time, without transcendentalizing the context, they assemble a re-contextualism that aids to the redefinition of the spatial realm.

In brief, the rather formal approaches to computation do not constitute a subject-context dichotomy, even remaining the issue untouched, other than some extreme examples of formal populations that trancendentalize the computational medium, in such case just to entail another binary opposition, as is the case of Greg Lynn. There may be reckoned morpho-genetic approaches that relatively redefine and dissolve these dichotomies created through the environmental, social and architectural realm. Especially in the case of R&Sie….the binary opposition of context and project may be said to melt through the fusion of the subject and context in spatial scale, within a scientific approach to information technologies. This fusion of the binary opposition comes with the introduction of a concern for the invisible constructs of the inhabitants of a society[275] observed through biogenetics and the related technologies that micro and macro scope them.

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[274] Ibid.

[275] Mennan, Zeynep. "Delicious Decay." pp. 18-20.

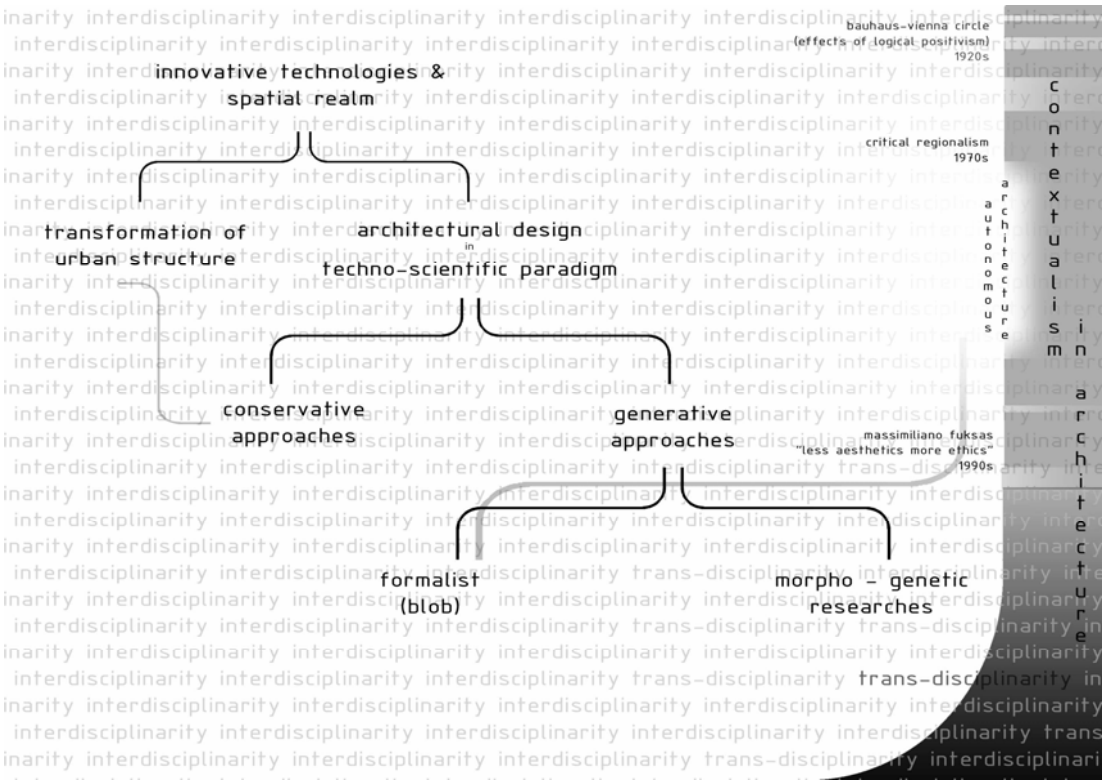

Figure 19: Diagram illustrating the paradigm shift in Contextualism.

CHAPTER 5

CONCLUSION

Aaron Betsky touches upon the issue of the economic crisis felt nowadays in relation to its ever-decaying effects on architectural production in his essay "Ten Architects."[276] He asserts that due to this crisis and toughened conditions for architects in building industry - where stereotype projects continue to appear by accelerated drawing process - there exists little real architectural production despite few attempts. Other than these few attempts made attainable only by the sponsorship systems, Betsky interprets all above mentioned projects – in the previous chapter - as vacant exercises on new technologies.[277] Accordingly, he states that:

> The only resistance architects can devise is to invent completely other scenes, utopias, dystopias or merely floating worlds' undulating on seas of digital information. These other scenes promise liberation from the real world in which we are imprisoned by the banality of building.278

This thesis followed quite a different argument on the nature and consequences of new technologies in information, communication, construction industry and correlating drafting methods, arguing that these technologies are aiding architects to terrain unknown possibilities and design methodologies,[279] and that these inquiries

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[276] Betsky, Aaron. "Ten Architects." *10x10: 10 Critics*. Phaidon Press. 1994. p 410.

[277] Ibid.

[278] Ibid.

[279] Kolarevic, Branko. "Designing and Manufacturing Architecture in the Digital Age," Laboratorio TIPUS, http://www.tipus.uniroma3.it/Master/lezioni/AID/ Branko.html.
Last accessed at December 2006.

have less to do with the restrictions undergone in the course of construction industry or a mere escape from the economic crisis then with the much broader changes in the cultural and global realm affecting all disciplines.[280] Among the design methodologies mentioned, there is constituted an "environmental approach,"[281] contradicting Betsky's point on the liberation from the real world, where an ever-increasing engagement with the earthly conditions is seen to exist. Within the scope of this study, this environmental approach has been tried to be defined as a shift in architectural methodology evoking the issue of contextualism in architecture.

To this aim, the earlier attempts in architecture that ultimately focus on the factors constituting the environment have been mentioned. The concepts of Genius Loci and Critical Regionalism have been exemplified to introduce divergent levels of contextualism in architecture. Through revivals of the Genius Loci as the origination of the local concern, the ways in which the spirit of the *topos* has been transcendentalized to constitute a dichotomy between project and its context have been studied. Another dichotomy has been introduced with a focus on Critical Regionalism, where regionalism and historicism are simultaneously at work. Though regional and historical characteristics are highlighted to bring with a culturally responsible stance in Critical Regionalism, how such an historicist concern would formulate its societal accountability is a question mark.[282] Indeed, as theorized by Frederic Jameson, critical regionalism provided discrepant notions for the definitions of context. Jameson asserts in relation to Kenneth Frampton's Critical Regionalism that:

> Indeed, the untheorized nature of its relationship to the social and political movements that might be expected to accompany its

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[280] Antoine Picon. "Architecture, Sciences, Technology and the Virtual Realm," p. 302.

[281] Kolarevic, Branko. "Designing and Manufacturing Architecture in the Digital Age,"

[282] Jameson, Frederic. "The Constraints of Postmodernism." *The Seeds of Time*. New York: Columbia University Press, 1994, pp. 189-205.

> development, to serve as a cultural context or to lend morale and support, is something of a problem here.[283]

On the other hand, the debate of autonomy has been mentioned as the opposite side of the discussion of context, where this time an overvaluation of form is observed to the extent that contextual reference is totally omitted. The autonomy debate has had a significant role in constructing the framework of this study. Hence in some cases, the whole computational paradigm has been claimed to be the reflection of an autonomous tradition in architecture because of the formalist tendencies recalled and criticized under the framework of that discourse.[284] Yet, within a focus on the former autonomy debate structured in the 70s, it has been observed that to deal with the two in similar terms fails not only chronologically but also methodologically. In some cases – as that of Greg Lynn – it is true that computational techniques enhanced architecture's disciplinary and formal potential, thus externalizing the cultural context. Yet in cases where this potential has been uncovered by the aid of technologies that are structured by and in a cultural context, the computational paradigm shift failed to be a real continuation of the autonomous tradition.

Peter Eisenman's position is significant in terms of the discussion of this study, since he is the only figure who took side in both a former version of the contextualism debate, and in its recent revitalization where the new technologies provide for architecture unnoticed ways of perceiving and reconstituting the contextual realm. The continuities and deviations in Eisenman's own discourse, affecting both the architectural agenda of the 70s and the 2000s, enhance this thesis' argument on the contribution of computational methods in triggering some disregarded aspects of contextual perception such as the morpho-genetic and the biologic. Though Eisenman stresses the use of new computational tools on developing further the formal possibilities in architecture as a permanent character of his autonomous

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[283] Ibid.

[284] *Perspecta*, "Mining Autonomy." Vol. 33, 2002.

approach,[285] his recent attempts to look into the dynamics of topography and flow of inhabitants by the aid of new methods shows the contribution of new technologies in engaging with the surrounding realm even within a formalist approach. Even though the first impression of some recent computational experiments in architecture may appear to be virtual and formal experiences, as stated by Aaron Betsky in the beginning, the logic behind these programs and tools are seen to be based on very concrete sequences taking place in the real world.[286]

The use of computation for the search of new formulations is further explained by the fact that computation in architecture relies on formal/mathematical capacities in addition to spatial context. Moreover, formal and functional properties of architecture usually experience transformations through the process of computation, and, vice versa, when computation engages in spatial training, its nature undergoes a deformation.[287] At this critical interference, a reformation occurs that has impacts on architecture's dependence upon formal processes and correlation with society. Therefore, not only architecture's inherent formal capabilities, but also the logic and the nature of technology and/or scientific methodology in use should be looked upon for the observation of the state-of the art of social/cultural issues in the realm of computational design.

The issue of interdisciplinarity constitutes another line of differentiation that the computational paradigm has brought both to the contextual (regionalist) and autonomous (formal) traditions. As previously stressed, within the issue of interdisciplinarity, the case cannot be made whether computational design methods

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[285] Eisenman, Peter. "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." *Diagram Diaries*. London: Thames & Hudson, 1999. pp. 66-67.

[286] Kolarevic, Branko. "Designing and Manufacturing Architecture in the Digital Age," Laboratorio TIPUS, http://www.tipus.uniroma3.it/Master/lezioni/AID/ Branko.html. Last accessed in December 2006.

[287] Mennan, Zeynep. 18.03.04 Arch 527: Advanced Topics in Digital Constructivism, METU, Dept. of Architecture, course lecture notes on techno-scientific development and the debate on formalism.

provided for the intrusion of other fields of knowledge into architecture. Architectural discourse has constantly exchanged with linguistics, semantics and philosophy.[288] Architectural practice is also highly dependent upon physics, geometry and mathematics.[289] Yet, the introduction of other fields and techniques into architectural design has been enabled by the new technologies that provided a common medium for all disciplines. This shared platform of computerized systems has given birth to cross-fertilizations where hybrid techniques and novel forms of thoughts could appear. Neil Leach states according to this issue of interdisciplinarity in architecture that:

> The computer, through its capacity to clone, warp, tweak, map, rotate, distort and perform other related operations, has contributed to the emergence of new formal expression… But perhaps the most exciting recent development afforded by the computer has been the introduction of the genetic algorithm into architectural design. As De Landa explains, the process involves the adaptation and the translation of computer simulations of evolutionary processes in biology into the domain of architecture.[290]

Theoreticians and architects of this new paradigm may be asserted to resolve the former dichotomies constructed between form and culture (Autonomy Debate in the 70s), and between universal and local (Critical Regionalism) within a mutual dealing of context and project. The shift that is mentioned within the computational paradigm is situated in this new relationship certain theories and practices established with history, culture and other environmental factors that are definitive for the context. Increase in the number of theories and projects that deal with the surrounding realm utilizing the methodologies borrowed from other disciplines is another axis of this

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[288] Mennan, Z. "Theory on Borderlines: A Collective Experience and a Free Market." *Shifting Borders, Negociating Places: Cultural Studies and the Mutation of Value(s).* Ed. Adkins, B., Bennato, D. et.al. Rome: Bordighera Press, 2006. pp. 65-85.

[289] Ibid.

[290] Leach, Neil. *Designing for a Digital World*. p. 9.

paradigm shift. For instance, Branko Kolarevic states in accordance with the dynamics and fields of forces that:

> Architectural form, in other words, is not only a manifestation of its internal, parameter-driven relational logics, but it also has to engage and respond to dynamic, often variable influences from its environmental and socio-economic concern.[291]

In response to that, Ali Rahim approaches the computational tools and medium with their ability to influence and transform cultural, social and political relations:[292]

> We must view the object in its context and understand it as a part of a continuous temporal organizational process of cultural proliferation.[293]

The study has mainly dealt with the theories that focus on the new technologies engaging architecture and the sciences to uncover the context-burden characteristics of architecture; however, certain architectural offices that reflect this discourse on their projects have also been introduced. In fact, among these mutual explorations, the engagement in biology, genetics and non-Euclidean geometries by pioneering architects revealed not only unnoticed formal novelties but also non-experienced interfaces with the environment. These interfaces are exemplified especially in the approach of R&Sie…, heading a re-contextualization where the context is claimed to be genetically, biologically and chemically defined as much as it is historically, culturally and geographically.[294] By their Mosquito Bottleneck and Scrambled Flat projects, R&Sie… introduced how context may be reintroduced, not necessarily

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[291] Kolarevic, Branko. *Architecture in the Digital Age: Design and Manufacturing.* p. 19.

[292] Rahim, Ali. "Potential Performative Effects," in *Architectural Design* vol 72. ed by Helen Castle London John Wiley and Sons, 2002, p. 53.

[293] Ibid. p. 57.

[294] Roche, François "(Science) Fiction & Mass Culture Crisis."Deepnot 11. and Roche, François "morphous mutations".

through the relationship man established with his cultural and built environment,[295] but possibly and generatively via observing floral and animal behavior and survival in natural and man-made settings in mutual, parasitic or symbiotic relationships with man.[296]

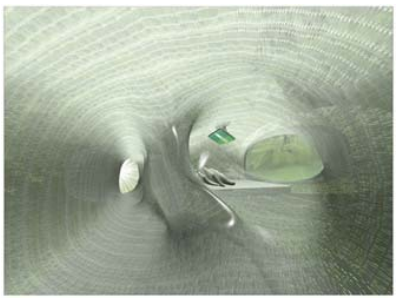

Figure 20: Scrambled Flat by R&Sie…

Figure 21: Mosquito Bottleneck by R&Sie…

New Territories. R&Sie...www.new-territories.com/roche%201998ter.htm.
Last accessed in December 2006.

Actually, this redefinition of the notion of context has been noticed and appreciated by many critics.[297] Yet, from the side of the critic, there is also the problem of actualization of these theories experienced initially in the discursive field of architecture and within the context of virtual environment. Ali Rahim argues that:

> As culture adapts to the effects produced by contemporary techniques the evolution of the cultural milieu is further influenced. Contemporary culture and contemporary techniques are developing simultaneously, with a profound effect on architectural production. Experimental architects are taking advantage of this simultaneity and the new

[295] Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology of Architecture.* p. 5.

[296] Mennan, Zeynep. "Delicious Decay." pp. 18-20.

[297] Mennan, Zeynep. "Delicious Decay." and Ruby, Andreas. "Transforming Continuity."

> techniques will eventually transform their static counterparts, currently used in the construction industry.[298]

The categorization of the digital production techniques, on the other hand, emphasizes the digitally born project's realization again through digital processes."[299] Three dimensional scanning (from physical to digital), Digital fabrication (from digital to physical), Two-dimensional fabrication, Subtractive fabrication, Additive fabrication and Formative fabrication are the mainstream techniques that Kolarevic mentioned for the assembly, surface and production strategies and the new materiality of these new forms.[300]All over, the digital production techniques are also hybridized for their realization.

Yet, before their realization processes and the expected actual relationship established with the surrounding realm, these techno-scientific approaches have already achieved to overturn prevailing dichotomies in architecture. Culture versus form; universal versus local; disciplinary versus interdisciplinary, may be asserted to have given way to a cross-platforming[301] where the advantages of each is tried to be set forth by the aid of scientific inquiry in architectural design.

On the other hand, the embrace of computational design methods should be evaluated more as a possibility of engaging with the environment and other fields of knowledge than as a chance for proliferating formal capacities and possibilities. Once new technologies are perceived and processed in this way within the architectural methodology, the socio-cultural paradigm grown in the interface of

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[298] Rahim, Ali. "Introduction," *Architectural Design* vol 72. ed by Helen Castle London John Wiley and Sons, 2002, p. 8.

[299] Kolarevic, Branko. *Architecture in the Digital Age: Design and Manufacturing*. p. 31.

[300] Ibid. p. 48.

[301] Kol/Mac Studio [Sulan Kolatan and William MacDonald]. "MUTuelle Environnementalité." ("MUTualistic Environmentality") *Architectures Non Standard.* Ed. Migayrou, Fréderic and Zeynep Mennan. Paris: Editions du Centre Pompidou, 2003. pp. 102-104.

architecture and new technologies would give birth to significant evolutions in the theory and practice of architecture, as in the case of the new morpho-genetic approach replacing previous contextualism or decontextualism dichotomy. Actually, this developing "morpho-genetic" approach is itself an instance of such an evolution, that assembles the formal and environmental aspects of architecture which once constituted the axis of a seminal debate in architecture; indeed, the strength of the contextualism-decontextualism dichotomy has been responsible for the debates' unsettled end. This thesis put the emphasis on this capacity of recent computational approaches in architectural design to provide not only for new formal and environmental experiences, but more significantly to challenge existing polarities in architecture by putting the new technologies and scientific inquiries at the core of their stimulating energy.

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