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Title	Book Review: Unified architectural theory: Form, language, complexity, Nikos A. Salingaros
Type	Article
URL	<a href="https://clock.uclan.ac.uk/id/eprint/20859/">https://clock.uclan.ac.uk/id/eprint/20859/</a>
DOI	10.26687/archnet-ijar.v11i3.1394
Date	2017
Citation	Pour-Rahimian, Farzad (2017) Book Review: Unified architectural theory: Form, language, complexity, Nikos A. Salingaros. International Journal of Architectural Research: ArchNet-IJAR, 11 (3). p. 231. ISSN 1938-7806
Creators	Pour-Rahimian, Farzad

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10.26687/archnet-ijar.v11i3.1394

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Archnet-IJAR: International Journal of Architectural Research  
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## BOOK REVIEW: UNIFIED ARCHITECTURAL THEORY: FORM, LANGUAGE, COMPLEXITY, NIKOS A. SALINGAROS

DOI: <http://dx.doi.org/10.26687/archnet-ijar.v11i3.1394>

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### Keywords

architectural language;  
biological form; geometry;  
evidence-based design;  
organised complexity

ArchNet-IJAR is indexed and listed in several databases, including:

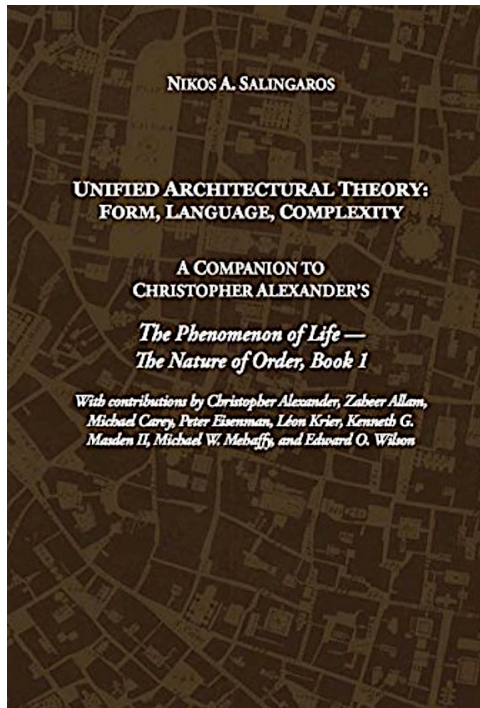
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### Abstract

*Unified Architectural Theory: Form, Language, Complexity is a compendium of scientific knowledge and practical insight into architectural theory and how it is taught to students. In this guide, Nikos Salingaros, Professor of Mathematics at the University of Texas, offers a succinct summary of his extensive course focusing on how to intelligently approach architectural design by aid of scientific evidence. Unified Architectural Theory seeks to establish a clear articulation of the perdurable framework behind "all of architecture" through centuries that is based on hard scientific facts rather than personal sentiments. The book contains 44 sections and is organised in two parts that respectively give an overview of the course lectures and assignments. The concise format of the sections as well as the comprehensible writing tailored to meet students' needs make it a great companion for anyone who wants to learn.*

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## INTRODUCTION

Unified Architectural Theory: Form, Language, Complexity is a theoretical body of knowledge that engages both amateurs and connoisseurs in its straightforward and comprehensible format. It provides architecture students, academics, and practitioners with invaluable tools and conventions that are general and original as conveyors of salient truths, yet directly applicable to contemporary design. Salingaros' main objective is to guide students on a journey that develops their thinking faculties and enables them to distinguish between genuinely good buildings designed to accommodate human needs, and fashionable architectural statements that temporarily steal the spotlight. An important part of that process lies in the ability to detect profound, yet commonly overlooked, flaws in design concepts that, at a first glance, might appear extremely sophisticated because of image-based professional preconditioning, yet bear no scientific grounds or real justification.

At its onset, this educational voyage seeks to establish a clear understanding of the language of architectural form, which is a key prerequisite for documenting and detecting it that then allows mindful further implementation. Salingaros and his collaborators then move on to explain notions such as architectural vocabulary, biological origin, geometrical complexity, evidence-based design and regional adaptation to direct students and practitioners to methods that would allow them to draw parallels between different disciplines and search for deeper connections, thus learning to be sensible in architectural and urban design. Having established the theoretical groundwork, the guide then concludes with the assignments that put to practice the newly developed abilities to document, classify, and evaluate design complexity.

## LANGUAGE AND VOCABULARY

Salingaros' theoretical framework uses quantitative methods that teach how to leverage the adaptive advantages of architectural language in real life practice and decide whether certain vocabulary is appropriate for a building typology or not. Students, or even qualified architects, can often find themselves faced with an uncanny awareness of the presence of flaws in a building, yet still not be able to articulate that defect and put it into words or writing because they lack objective criteria to judge against. In laying out clear objective measurements, this book contributes to the critical awareness of the difference between being allured to something because it is attractive on the surface, and experiencing true unison with the architectural form of our surroundings. The evaluation of structures is performed on the basis of human-oriented criteria that aims to eradicate misguided practice through establishing considerate objectives. Above all, the goal is to create a connection on a humane level and appeal to the innate human emotions with due respect instead of idolising simple bare forms that are the epitome of cold, formal, intellectual verses. In this course, Salingaros puts forward a critical way of looking at buildings and extracting the essence of their conceptual meaning through documentation and analysis so as to lay a

foundation that practitioners would be able to build upon in their further work. The author urges students to analyse buildings not only to detect their language pattern but to also be aware of what it signifies - how well it responds to the environment and how it connects to things greater than the building itself. The book shows empirically how to extract and document a language in a manner that allows students to implement it, considering regional factors such as climate, geography, local materials and culture. As a facilitator of the first assignment, Salingaros offers a checklist, which students can use to identify architectural styles.

Due to the lack of objective criteria, students and professionals often encounter unnecessary design predicaments stemming from the diatribe of different philosophical theories that fight for validity in the architectural world. In this course, the author examines the appropriate level of philosophical involvement that has to be used in the field of architectural design. Along with his fellow writers, Salingaros contemplates what are the philosophical categories that can best guide practitioners in an honest way to meaningful design decisions, rather than mislead them into intellectual whims in favour of current fashion trends.

Commonly, architecture is taught through an image-based educational practice without sufficient critical evaluation: this methodology imposes a risk that a market image might supersede the very object it refers to and skew students' perception. Additionally, architectural style reflected in images is a by-product of a mass movement that uses fixed aesthetic features as amplifiers with the sole purpose of promoting the styles typical of certain architectural elite. Salingaros attempts to remedy the effects of this enforced malpractice in clearly demarking the boundaries between political ideology and scientific theory in teaching to prevent the preconditioning of students to only recognise as valid market-driven architectural languages.

The author emphasises that students are vulnerable to confusion as not all architectural teaching members have background as architectural theorists. Educators might assume that the editors of certain books have already carefully chosen the content, but they might not be able to judge it themselves. Ultimately, there is no guarantee that the materials included carry no hidden political agendas; hence Salingaros' course seeks to lay out the groundwork of architectural theory as a mechanism for prevention against the subjectivism of personal opinion that might be swayed in one direction or another depending on the cultural and political winds of the current time.

The eloquence of modern architectural rhetoric and the evangelical fervour it is often propagated with a capacity to derail the objectives of contemporary architects. Poetic architectural expression in writing often takes advantage of human perception of patterns and its ability to create associations, imagine things and endorse them with ungrounded meaning. As a counterpoise to those literary incantations that seize human perception of abstract concepts, Salingaros proposes an empirical mechanism to distinguish between true and false theory, sense and non-sense. The course introduces students to Christopher Alexander's theory of human-made order that dictates buildings should be designed for the people who work and live in them rather than for the simplicity and clarity of a concept that an architect would like to achieve purely for aesthetic reasons that are only evident to a certain intellectual elite. The ability to interpret the actions of other architects is also important as a pre-emptive measure against involuntary mistakes resulting from coercive mass culture practices. The clear criteria to measure design informs it and provides it with predictive value. Science then helps in providing a vehicle to understand mechanical systems and extract their principles that can be applied elsewhere.



## BIOLOGY AND NEUROSCIENCE

Through notions such as ecophobia and biophilia, supported by neuroscience and different biological studies, Salingaros and his fellow academics explain the empirical difference between naturally and artificially generated forms and how they are perceived by human consciousness. The ability to ask critical questions and interrogate form is crucial for a deeper understanding of the interconnectedness of everything in the Universe. Recognising the biological origins of urbanism, and by extension architecture, requires more than simply analysing the resemblances of structure; it necessitates a more complex study of the wiring of the human brain and how it discerns form and space. It is equally important to recognise buildings as “living” entities and thus acknowledge their need for repair and restoration. In the author’s view, a unified architectural theory is the starting point to creating a system with its own means of self-correction and maintenance.

A failure to recognise the true significance of naturally generated forms may result in creating a poor imitation of natural morphology when attempting to implement it in design. Anthropologically triggered ecological disasters and resource depletion are a function of the detachment from nature without critical evaluation of the technologies we employ and the appropriate level to do so. Connectivity to the surrounding world yields natural order while detachment and unnecessary abstraction lead to isolation. Replacing natural information with its intellectual abstraction often leads to a loss of innate intuitive knowledge that has been accumulated through centuries.

The cognitive ability of the human mind to perceive space and the objects in it should also be taken into consideration when we try and apply natural order and mathematical hierarchy to architecture. It is important that architects as well as theorists ask themselves whether they understand natural order well enough to be able to use and adapt its principles without corrupting them. The risk of implementing natural principles in a sense that is too general is that they are diluted and robbed of their value. Synthesis is an important tool, yet it might come with unavoidable reduction. Salingaros warns its readers to be cautious and mindful of what materials they choose to study, as reduction is easier than synthesis, so it often predominates in literature.

The most important highlight of the book is the importance of being able to differentiate between a salient discipline and ephemeral fashion where the first is based on knowledge that can be tested and verified while the latter is a result of market slogans and bold statements. Through the notion of consilience, i.e. the interconnectedness of knowledge within different disciplines, the author explains the significance of theoretical coherence. All contributors in the book strongly emphasise the necessity to refer to other disciplines when engaging in architectural design in order not to perpetuate distorted information within the field and propagate inherited underlying misconceptions. If a discipline is only self-referenced, then it lacks strong connection to the outside world and is rendered numb in its own expression. Hence, Salingaros’ strong architectural theory offers a hierarchy in its complex structure where ideas and results are organised, compared and easily tested.

## GEOMETRY AND ORNAMENTS

Written language is linear, composed of letters into words into text into compendiums that seek to deliver a message: in a similar way, architectural language is expressed in forms, volumes and combinations that try to evoke different experiences. Therefore, achieving



coherence is a crucial factor in the design process as there are infinitely more ways to arrive at incoherence than at coherence in an architectural proposal. On a number of occasions, Salingaros reiterates the significance in connecting human beings to a higher natural order in the world that aids achieving wholeness. As one example, ornamentation has a function other than physical stylisation of natural elements; it connects to the human body which has developed unconscious mechanisms to sense proportion and geometry. It has its biological wiring to recognise natural and artificial constructs which trigger specific emotions that then lead to ideas and thoughts. Hence, it is important to carefully choose a particular architectural language for a building as it, albeit adaptive, predisposes it to a certain geometry.

Modernism has never been in favour of pattern languages which inevitably led to their neglect in the teaching practice of many architecture schools. Fashionable symbols and veneer came to replace deep human values and the timeless language they were expressed in. As an alternative to that, the author presents a careful study of symmetries that aids student understanding of the principles behind repetition, alignment, reflection and translation. That then facilitates the design of a product or structure that is perceived and experienced as a holistic entity.

The Kolmogorov-Chaitin complexity is given as an example of a method for estimation which measures the complexity of a system against the complexity of its description. The presence or non-presence of pattern defines the complexity of its informational string. Therefore, a minimum level of complexity is required to transmit a meaningful message; over-simplicity carries no information. Through a simple visual check, one can recognise a pattern and estimate the relative complexity of its data string. That ability, however, might be misleading as, in an attempt to introduce innovation, architects might be tempted to use an element of randomness as an artistic shortcut, yet this random act is not an actual adaptation and thus does not communicate a meaningful message.

Salingaros defines architectural theory as an explanatory framework founded upon scientific practice. This framework explains and relates to the buildings themselves and to their meaning as without clear justification, theories cannot hold any meaningful value. There is a common, yet misleading perception among architects that only subjects such as physics and mathematics can be empirically proven, hence the author appeals that it is important to understand that architecture is experimental in itself and thus is subject to validation. The profession is responsible to society and its experience with built form, therefore, it needs to apply valid solutions in its practice.

## **POLITICS, FASHION AND INTERVIEWS**

Salingaros breaks up the structure of the book and reinforces the dynamicity of the architectural discussion through the interview format of certain chapters. In a section dedicated to urbanism, Léon Krier, renowned architect and urbanist, passionately discusses New Urbanism and its direct relation to the free market that dictates its commissions as well as their location and programme. Unfortunately, the interest of the end-users is rarely an objective in that brief. Krier adamantly argues against the culture of “wow” architecture and points out that “wow” styles only cater to “wow” occasions, not necessarily to everyday use and need, as there is little value of sculptural abstraction in residential or industrial buildings.



In the present day the market is leading and often turns architectural language in a commodity that can be marketed in certain ways so as to maximise profits and evoke “wow” responses. The exploitative objectives of fashion put a spoke in the wheel of the development of architectural theory while ignorant attempts at innovation often condemn the implementation of an architectural style simply because it is considered traditional and thus retrograde. Derived from a necessity to keep the market stimulated and with a sense of urgency in the need to sell for profit, modern architectural expression risks suppressing timeless knowledge just because it might not align with current trends.

Krier also argues that cities need principles and rules as a stable foundation that then creates conditions for a vibrant mix of typologies and uses as well as forms and volumes. If, however, there is no structure in the language of the urban form, or its grammar and syntax are ignored and distorted, then the urban realm turns into an idiosyncratic chaos. In an attempt to elevate architectural expression, architects might defeat its functional purpose.

## CONCLUSION

In his Unified Architectural Theory, Salingaros appeals for greater awareness of architectural language and its impact on our surroundings. Within the diverse sections of this compendium, Form, Language and Complexity are regarded through the prism of architectural vocabulary, biology, neuroscience, geometry and even politics and fashion. The author, as well as his fellow academics, emphasise the urgent need for intelligence-based design and adaptive architecture that respects humanity and promotes a deeper universal meaning. Unified Architectural Theory teaches considerate design for people unaware of architectural rhetoric as opposed to design for other architects and is a perfect synthesis of ideas for self-motivated students, teaching professionals or simply lovers of considerate design.

## REFERENCES

- Salingaros, N. A., et al. (2013). Unified Architectural Theory: Form, Language, Complexity: A Companion to Christopher Alexander's "The Phenomenon of Life - The Nature of Order, Book 1": Vajra Books. ISBN-10: 9937623057 - ISBN-13: 978-9937623056

