

The Philadelphia Society

phillysoc@comcast.net www.phillysoc.org

JAMES KALB INTERVIEWS NIKOS SALINGAROS

Nikos Salingaros, the mathematician and architectural theorist, recently published a new book, *Twelve Lectures on Architecture: Algorithmic Sustainable Design* (ISI Distributed Titles, 2010). It's a somewhat expanded set of notes for a series of lectures he gave a couple of years ago on architecture and urbanism. As such, it gives a clear if rather spare presentation of ideas he's presented before.

As his readers know, his work continues Christopher Alexander's work on the nature of architectural order, with more development of specifically scientific aspects. A basic point both make is that natural, biological, and urban systems have a great deal in common. In particular, they all function in complex, varying, and adaptive ways on many different levels. For that reason, they can't be designed in any very comprehensive way but must largely be allowed to evolve through variation and selection. (The "algorithmic" and "sustainable" in the book's title refer to the reiterated procedures needed to find adaptive designs.)

Such systems have certain common characteristics. One is a generally modular and hierarchical organization. That organization is always fractal, meaning that it has a similar degree of organized complexity at all scales. If you look at the system overall, it will have a few big pieces, more medium-sized pieces, and a great many smaller pieces. That appearance will repeat itself if you look at pieces of the system, and the same for pieces of the pieces, all the way down to the smallest dimensions. Thus, biological communities are composed of species, organisms, bodily organs, tissues, and cells; cities of urban quarters, neighborhoods, streets, plazas, and buildings.

The basis of such hierarchically ordered systems is the binding of complementary units, a tendency that is strongest at the most elementary level: the particles that form an atom; the organelles that constitute a living cell; the walls, roof, and foundations that make a building. Those elementary unities then link up to form ever more extensive systems that work in a way that preserves their nature as systems and also furthers the functioning of their components. A system that did otherwise would disappear, and something that works better would take its place.

The account is persuasive, but it's very much at odds with post-1920s architecture and urban planning, which tend to eliminate detail and emphasize the dominance of simple concepts and images, and which are experienced as inhuman and alienating rather than living. So why do people stay with the current approach when it's so much at odds with natural tendencies and no

one likes the results? The answer, Salingeros tells us, is that we've boxed ourselves into a prison of images.

It seems that the door is nonetheless open if we want to leave, and with that in mind we talked with him recently to find out more about the problems and what to do about them.

JK. Your theories mostly seem to tell us things, like the necessity of small-scale ornament, that everyone took for granted a hundred years ago. Why is that needed?

NS. Because our worldview and our conception of the universe have changed drastically since then. People's perception of natural phenomena, obtained directly from nature via our senses and documented in our traditions, was replaced by artificial images driven by ideology. This is a paradox, considering the tremendous scientific advances of the past century, which one would think should have reinforced our understanding of nature. But they didn't, because technology was commandeered to sell products, often harmful ones. Today, people cannot see or experience with their minds and bodies, but interpret their world falsely according to what they have been indoctrinated to see. They live by abstract images. And even though a century ago there were many dominant ideologies, none had succeeded in replacing our perception of the real world to the extent that the current media has.

JK. So the need to explain the obvious shows there are deeper problems?

NS. I assume that you mean that the disaster with contemporary art and architecture points to a fundamental failure of our society, and of civilization in general. Yes. Humankind has lost its way, at least that portion of it that engages in global consumerism driven by overwhelming media influence. By detaching people from the real world, and especially from the traditional spiritual world where morality and a higher sense of order reside, contemporary society has been turned into mindless consumer robots. That was precisely the intention of those who were pushing an industrial modernism.

JK. You speak of consumerism, but also point out that the fascists pioneered architectural modernism, and certain aspects of the movement are prominent in Nazi and Soviet architecture. So are all these part of something more general?

NS. Actually, all revolutionary movements following World War I wanted a break with the past, and especially with the LOOK of the past, so they embraced buildings that looked sleek, white, and metallic like the machines of the time. They implemented the world revolution that would rebuild humanity through industrialization. This is the link to consumerism, since industry can only produce if the population consumes. Marxism and capitalist consumerism are antithetical, but the socialist state like the capitalist state was fixated upon massive industrial output. And the modernist architectural pioneers were willing agents of industry, making up wild

explanations for why the “new” materials were superior, practically and ethically. They sold an industrial product and were rewarded with commissions, fame, and academic positions. Coincidentally, they put traditional construction techniques and a vast network of local building and craft traditions out of business. States, both on the left and on the right, just loved this depersonalized approach to building, where the individual no longer matters and everything is sacrificed to an imposed utopian vision. So you lose the human checks and balances and the industrial system takes over.

JK. You oppose your views as scientific to others you call unscientific. But modernism reflects an attempt to subject the world to human will through technology. Isn't that attempt related to modern natural science?

NS. Our educated world remains ignorant about the distinction between science and technology, unfortunately. Science helps us understand the universe and ourselves. Technology applies scientific results to master processes that we can manipulate so as to better our lives. It is also applied to kill people directly, destroy nature, and threaten our own survival. Or to save us from our stupidity. Tools can be used for either good or evil. Modernism in my view was a massive but unscientific application of technology to shape the world into an industrial dream image. It was unscientific because no thought was ever given to discovering how human beings interact with their environment, or whether we need certain specific geometrical features just like we need nourishment and air, or to understanding how human beings interact with each other to create a city. Modernist architects just drew forms on paper that looked like machines and those in power built them. Again, to show the total lack of science here, when the first projects proved to be dehumanizing disasters, nobody was allowed to say that. And even if someone did, there was no revising those failed building and urban typologies because they were a central part of the ideology of industrial modernism. We still have them with us today. You dare not criticize them. This is not science!

JK. If you have to explain music or a joke to someone he's probably not going to be much of a musician or comedian. Does something like that apply to your explanations of architecture?

NS. Actually, with ordinary people we just have to give a brief introduction, then they naturally tune into living structure. They get it instantly because their sensory system is giving them the information, and their internal circuits are working fine: they were just blocked temporarily by all the media conditioning. But the real problem is with architects and anyone who has been exposed to architectural images. They have been taught to block their own sensory apparatus so as to support approved products of modernity. That's necessary because preferring cold, sterile, or absurd forms goes against our need to experience biophilic structures in our immediate environment. Architects have to learn to suppress their own physiological signals.

JK. The picture you present is alarming. Would a little more discussion lead to a calmer

perspective?

NS. I'm sorry but further discussion only generates more alarm! This is a serious problem and again it is ignored because a population of consumers of industrial products serves the interests of the global economic system. Architecture schools train students NOT to see the world, NOT to trust their own sensory apparatus, NOT to question the approved images of fashionable architecture. This portion of education in the West is as effective in promoting ignorance as the fanatical indoctrination seen in other parts of the world, about which everyone here complains endlessly.

JK. Didn't Christopher Alexander find some way of deconditioning Radcliffe students?

NS. This was a fascinating experiment. What Christopher Alexander and Bill Huggins discovered was that people in modern society lose their ability to perceive coherence in a design. Young children and indigenous peoples do perfectly well, but many college students have already lost their ability to see coherence because they are focusing on sequential analysis of patterns, just like reading along a line. So Christopher came up with the technique of flashing many similar patterns together on a screen for a second, and having a subject find one particular pattern, something that cannot be done by sequential searching. It turns out that our brain is perfectly capable of doing that, because it is forced to go into a global perceptive mode that computes pattern coherence. After such exercises, college students recovered their lost ability to see coherence. We really have so many cognitive capabilities that are either left to atrophy, or which are even unsuspected. All of this wonderful richness and incredible information processing abilities is negated by the modernist approach to treating a human being as a machine devoid of emotions.

JK. What needs to be done so we can have a better built environment?

NS. Very simple: educate the clients to insist that the environment be constructed according to certain very precise but general rules. These generate living structure and not the shiny but dead forms preferred by the architectural media. The same applies on a grander scale with cities. Not coincidentally, the geometry of modernist cities is unsustainable, whereas living urban fabric is indeed sustainable. If we ever have the expected energy collapse predicted by many futurists, cities will naturally re-organize into living urban fabric because there will no longer be a system of enforcement acting to maintain the abstract urban geometry. We will see spontaneous growth and infill of urban fabric, abandonment of glass-and-steel skyscrapers, cannibalization of monstrous buildings for their materials, and so on. It would be far better for everyone if living fabric were in place before such a collapse.

JK. But can rules guarantee a good result? It seems that they're always incomplete. That was the lesson of Alexander's *A Pattern Language*. And rules seem to leave out the need

you have mentioned for a sense of overarching unity that goes beyond our grasp.

NS. Let's say that NOT following rules almost guarantees a deficient result. An overarching unity is the coherence of a well-adapted solution arising after many computational steps. There are always an infinite number of adaptive design results, but this infinity is far smaller than the infinite number of dysfunctional results. Rules that have been intelligently (or traditionally) derived will inject information and constraints into the search for a good result; hence they narrow down the search for good solutions, quickening the search procedure to help discover good (functional, adaptive, human-scale) designs. It's a complex process. An adaptive design uses constraints such as patterns that have evolved with humankind for millennia. A pattern language is a set of constraints that helps a computation, though the patterns are not steps in the computation itself. You need further computational rules to work with the patterns towards evolving an adaptive design. Computation requires checking complex human emotions with each step, respecting every factor that enhances human life. It is all pointing in a specific direction, and that direction respects coherence in the universe.

JK. How much progress have your theories made so far?

NS. Many students correspond with me for their research, because sadly, they have nobody to talk to in their own universities. Those young people are thinking independently. My books are translated into other languages, so there is certainly growing demand for this knowledge, and publishers in those countries surely felt out the market before translating them. And of course it's not only me: there is a group of thinkers beginning with Christopher Alexander who have put together a substantial body of work describing a living architecture and urbanism. People who find my writings immediately discover the rest of this group. I have to mention another darker side, however. The worst nihilistic starchitects apparently have read our writings and have lifted its vocabulary such as "building on the human scale", "fractal scaling", "biophilic design" and apply these terms to their own work so as to better sell it to an impressionable public. At least the vocabulary if not the theories are catching on.

JK. What actual projects, other than those Alexander has designed himself, best present your theories? How have those projects come about?

NS. Thousands of buildings are erected around the world today and in the recent past, which we never hear about. They are indigenous, vernacular, modest, many of them self-built, all expressions of human intuition about what a nutritive environment has to be. You will never see them featured in an architectural magazine. A government will not be proud of them, and may even make it a point to bulldoze them if given the chance. More formal buildings built in regional traditional styles also abound: again, you don't see them in the media because they are an embarrassment to some architects who wish to see only fashionable buildings shown (and not some "copy" of a past typology). There are quite a number of contemporary architects working with the classical form language, and many of their buildings are wonderful. Projects using this

particular form language contain something hidden that is just as important. Architects who re-learn how to design new classical buildings have freed up their intuition to perceive nutritive spaces, forms, and surfaces, and therefore their product is adaptive to human sensibilities. They have liberated themselves from the modernist obsession with industrialization and the inhumanity of industrial forms and spaces. I have designed a complex of buildings working with Hadi Simaan and José Cornelio-da-Silva: the New Town Center of Doha, Qatar, which unfortunately has yet to be built. Following the express desire of the client, it is in a classical style that alludes to the Roman-Palmyran heritage of the Arabic civilization. Aside from my project and Christopher's buildings, those others were not built by following our theories, but by following innate biological rules for adaptive architecture. Their architects have never read our theories. We tried to discover and document the innate rules for building human habitat — simple and straightforward, but apparently revolutionary.

JK. How can such ideas better make their way into practice?

NS. When architects and urbanists learn what my friends and I are proposing, and apply it in their own work, the result is closer to living structure. Here we face a practical issue, since implementing our ideas needs cooperation from governments, regulators, contractors, suppliers of materials, construction companies, and so on. Practitioners have to work to get around the business-as-usual attitude that now unthinkingly constructs an inhuman environment, not because of ideology, but because of inertia and a built-in way of doing things that is resistant to change.

JK. Both you and Alexander believe your theories have religious implications. Why is that?

NS. We have both learned from experiment — that is, by directly observing nature herself and the nature of humankind. Since religion says that God created the universe and is in some way responsible for the precise manner in which natural things are built and function (including human society in general), then our theories ally themselves with religion by accepting natural form. Natural geometries are curved and fractal, whereas artificial structures since the early 20C tend to be stubbornly rectangular and anti-fractal. There is something profoundly anti-natural about modernist and contemporary architecture and planning. They are going against the natural order of things, and one could imply, by extension, they are going against God. Don't be fooled by the curved new buildings and winding roads in suburban sprawl: those forms are arbitrary and don't derive from adaptation. They don't arise out of life and a respect of nature. It's a totally different geometry from the curved walls and roads in a traditional village. When an architect or planner ignores the need for adaptation and imposes his/her will, the result is an absurd form — an act of defiance towards any higher sense of natural order. There is no room for God in totalitarian design.

JK. So architectural modernism implies a sort of cosmic rebellion?

NS. Industrial images constitute a substitute religion whose credo is the opposite of all traditional religions such as the Judeo-Christian tradition, Hinduism, Islam, Buddhism, and so on. The opposite of traditional religions ignores and oppresses the human being, and instead builds up a power structure for some elite. And this elite wants to enjoy consumerism without any bounds or regard for nature and other human beings. We dare to interpret the destructive side of contemporary architecture, as well as its enormous industrial success. We see a powerful organizational structure based on self-feeding certainty, arrogance, and total lack of humility. Our theoretical work unmasks many award-winning contemporary buildings for what they truly are: visual symbols based not on compassion towards human sensibilities but on nihilism.

JK. But it is said that we live in a secular world, into which religion enters as an irrational and divisive force ...

NS. That's the whole point that we learn from contemporary architecture: there exists a basic need for religious belief, and architects tend to follow a cult of images. It arose in the early 20C from the desire to break with all elements of the past, especially inherited human culture. Ours is therefore not the secular world everyone pretends it to be, but instead a religious world (though in the sense of a pseudo-religion). Contemporary architects professing to be atheistic champions are in fact promoting an ideology with religious overtones. This ideology is detached from nature and from God, and therefore it is irrational. But that deficit doesn't make it any less effective, something it has in common with all ideologies based on irrationality but supported by an extensive power structure. Christopher and I champion human freedom to choose a nutritive built environment. Traditional religions, despite their well-documented periodic failings and fanaticisms, arose out of the evolution of human culture, and are thus far more grounded in real human needs. Most important, they celebrate humans as rich and complex beings, with capabilities far beyond those of a machine. This makes religions more rational, and less divisive than pseudo-religions based on irrationality.

JK. Your theories are supposed to apply to a variety of complex adaptive systems. Do they apply to the other arts?

NS. Of course, all arts, music, dance, are expressions of human creativity and an extension of human biology. Those have all been fairly annihilated by the search for novelty at any cost. A nihilistic philosophy can't give birth to anything living because its very precepts forbid that. That tiny portion of nutritive art created in the past several decades does reflect our generative rules, however.

JK. Has anyone in the other arts picked up on your and Alexander's theories, or just computer programmers?

NS. I'm not current on all the visual arts and music, but I believe the situation is pretty bleak. There are the occasional dissidents who try to exist outside the system, but so far they are being ignored. But maybe they can learn from the sciences, where experiment and verification protect you from dogma. In programming, where one cares for function and not ideology, Christopher's ideas are recognized as profound and have sparked a revolution.

JK. Do your theories have implications for social life in general?

NS. A good observation. Of course, conditions in which a living creative spirit can act require a society that is in communion with nature and with the living order of things. That quality is absent from today's consumerist society. If we are optimistic that a new society can wake up and put itself in closer contact with its basic humanity, then that will automatically solve the problem of inhuman architecture. Until then, however, the same techniques used to sell absurd architecture through massive media campaigns will also keep society fragmented and disconnected.

JK. So where do your and Alexander's theories point from a social and political standpoint?

NS. It might be dangerous to apply structural rules developed for form and processes directly to human society and political systems. In general terms, however, we see that evolved societal complexity needs to be respected. Politically, our ideas point to traditional social values and the individual freedom to choose, and away from the globalized consumerist system. That means favoring traditional societal structures that have proven their lasting value over generations. This result is antithetical to the insistence on erasing tradition and creating a brave new society based on industrialized principles and untested utopian ideas. On the other hand, we support the call for ending top-down authority in disciplines where experimental verification is possible. Thus, we can safely dismiss many of the so-called expert critics of art and architecture. People should judge art and architecture based upon their own personal experience of comfort, feeling at ease, and positive emotional feedback. A building or presumed work of art that makes you feel sick is clearly a fraud. New ideas are welcome, but they have to be tested as rigorously as new drugs before being prescribed to patients, and withdrawn at the slightest sign of problems.

JK. People believe that an attack on architectural modernism is politically reactionary. Are they right?

NS. No. Architectural modernism resembles a totalitarian system uniting immense financial and industrial interests with a pseudo-religious fanaticism. Any concerned person who attacks this monolithic power structure is a liberator of humanity. Human-scale architecture and urbanism happens to resemble that of the past, and for very good reasons, since traditional forms were evolved over millennia to be comfortable. That does not mean that a return to the human

scale would be a return to the past. A reactionary is someone who insists on returning to the past for ideological reasons. None of my friends is driven by such a motive. We are using the latest scientific knowledge to advance human civilization forward toward a better future. That's not reactionary; it is progressive in the best scientific sense. Architects who live by ideology falsely interpret our efforts in terms of their own way of holding onto power. This accusation of us being reactionary is just another political ploy.

JK. You speak of the current system and its power. Can you say something more about the nature of that system, the source of its power, and the way it will likely end?

NS. You have governments and corporations who wish to flaunt their power through monstrous and arrogant building schemes, industries that produce very expensive high-tech materials, developers who want to make their money work but who have no moral constraints, and starchitects who are willing to do ANYTHING to obtain a commission. An agenda of enormous raw power is driven by vast sums of money. Fanaticized architects and academics become useful pawns in this power game. Sadly, politicians get pulled into supporting the ideology by the chance to gain some media coverage and campaign contributions. And then there is the gullible public that naively believes all it reads in the conformist media, about those highly publicized architecture prizes, the new buildings that are architectural "masterpieces" (but which make you sick to be in), all the wonderful stories about "genius" starchitects who care so much for people and progress. The public is fed this propaganda about our enlightened times and its progress in design. It's all a deception, a power play to maintain a cult of images. I have no idea how it will likely end. Maybe with societal collapse when we run out of cheap energy? Perhaps the developing world will realize the deception and denounce this rotten game before we do in the Western nations? Already the West is hated through its architectural expressions: you cannot fool traditionally religious people into believing that monstrous buildings hostile to human sensibilities are good. People who have not been indoctrinated can FEEL those forms to be anti-human, anti-God. But so far the media deftly turns this reaction around to blame critics as being jealous of our technological and economic superiority, so their insight is buried.

August 2011.