

Notes Toward an Updated Critical Theory of Modernism

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[auf Deutsch](#)

Ideas and opinions from some of our supporters

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Preface

Among practitioners of a revived traditional architecture today, there is evident dissent and uncertainty about how best to respond to the challenges of a persistent modernism in architecture and urbanism. My colleagues and I have written extensively about the intriguing new scientific evidence for the superior patterns and processes of traditional method (see e.g. the forthcoming issue of [Katarxis](#) webzine, due to appear 1 May of this year). But the question of the historical place of modernism - its legacy, its weaknesses in the face of the new evidence of science, and its proper critical analysis for our efforts - has not been fully resolved. Hence there is a limit to the ability of traditional practitioners to respond cogently to renewed criticisms by modernist practitioners.

Most egregious is the charge that traditional practice is in essence a reactionary movement, and not 'of our own time'. This question has recently been the subject of much discussion on the University of Miami's [TradArch listserv](#). The following piece was posted on that listserv, and has since been edited for clarity and format. This is in no way intended as a full exposition of the topic, but a contribution of a series of notes toward an update of a critical theory in light of recent developments.

Introduction

It is impossible to imagine the historical development of the modernist movement in architecture apart from the radical transformation of society effected by the science and technology of the early twentieth century. As an architecture that sought to be of its own time, modernism both responded to and accelerated the industrial trends of that era. Moreover, modernists were energized by the self-confident scientific world view of the day, the 'spirit of the age' that anticipated the near-total conquest of disease, poverty, and human irrationality. That inspired the bold confidence, not to say hubris, to jettison centuries of time-tested pattern in favor of radically minimalist geometries of the 'machine aesthetic,' believed to be more appropriate expressions of the human condition in such an advanced and rational era.

As we are aware, even today many leading architects hold unquestioned faith in the superiority of an architecture founded upon and rooted in technological abstractions, as against traditional design methodologies and geometries.

But in the intervening century - and in particular in recent years - science has changed in fundamental and formerly unimaginable ways. The fields of biology, astronomy, and physics, to take but three notable examples, are profoundly different today, with new ideas of organized complexity that flatly contradict the old mechanistic model. Moreover, the new science offers remarkable new insights into the evolutionary adaptation of traditional

processes, functioning as a sophisticated kind of collective intelligence. Yet the practice of modernist architecture and its progeny goes on, with playful new variations on the same old mechanist geometries - dabbling here and there with the imagery of the new science, but not fundamentally different in process, in the sculptural expressions of mechanist abstraction. To be sure, the old self-confidence is gone, along with much of the idealism, replaced by a rather self-pitying nihilism. But underneath, the actors continue to recite many of the same old lines.

What follows is a brief review of this state of affairs and how it came to be, followed by a brief examination of the impact today's new sciences might yet have on the world view and the methodologies of architecture.

In such an endeavor, we must be mindful of what it is we are discussing when we discuss science.

Let us remember that science is not merely the set of institutions concerned with the discovery of technological innovations. It is, broadly speaking, the human process of discovery of truths about nature, and the human condition within it. Thus architecture can never be far away from the subject of science in this broader sense.

For those who fear in such a discussion a reductionist loss of meaning, we should note that the metaphysical realm of meaning cannot be excluded from the nature of things in this process - except perhaps in the self-contradictory logic of positivism. (For "there is no metaphysics" is perhaps the most metaphysical assertion one can make). Indeed, there is nothing inconsistent with metaphysics in this process of discovery. After all, if we believe that we are discovering truth, and we believe that there is a metaphysical aspect to reality, then we should expect that our discoveries will help to elucidate for greater appreciation its wondrous and unfathomable nature. We can expect that science, in other words, explains the details, but cannot explain the totality. It is the mystery forever at the center of things - only deepened, and properly so, by our scientific revelations.

The Challenge at Hand

There is an emerging movement in architecture today that seeks to revive aspects of traditional architecture, as an antidote to modernism. Indeed, as I shall describe, there are indications in the new sciences that offer support for the great sophistication and adaptive power of traditional processes.

But the traditionalists have fallen into a political trap: they have been branded as backward and 'reactionary' in contrast to the modernists, who hold themselves out as the forward-looking alternative. This has been seen in a number of recent high-profile events such as the World Trade Center reconstruction design competition in New York City.

Those who believe in the validity and even the vital necessity of a contemporary revival of tradition can take a lesson from these events: they must learn to be more persuasive in an environment in which the modernists and their progeny still dominate the architectural debate. This state of affairs is clear enough at the WTC, where only one of seven proposals was in any sense traditional, and didn't make the first cut; and in Charleston, South Carolina - of all places - where a traditional design has recently been rejected by the City's Board of Architectural Review on the claim that it is not "of its time."

I suggest that this issue is more than one of opinion - of, say, asserting that we happen to like old traditional buildings, while others like new modernist ones. This is the fashion of the day, of emphasizing personal choice and difference, as opposed to commonality and shared experiences of value. So be it. However, I believe something more is needed to constitute a persuasive movement - a movement based on beliefs about objective truths, that certain things are harmful to human beings as a general proposition, and certain things are beneficial - on the level that car exhaust is harmful, for example, and clean air is beneficial. And I believe that in a movement, one is in the business of correcting the defects of society to better reflect that objective truth. This is the basis of progress.

It is true that such beliefs are by nature philosophical; but that is not to say that they are merely personal. It does not mean that they do not have objective aspects, open to scientific verification or dispute. If we believe that truth is objective (though perhaps our knowledge of it is always incomplete), then we believe that these matters are discussable, debatable, and consensus is possible. What else could be the basis for progress? I would go so far as to ask, what else could be the basis for civilization?

By its nature this involves us in the larger scientific process.

Note that if we do not believe these things, then we have embraced nihilism, the utter surrender of human intelligence to fate. We have placed ourselves in the self-contradictory camp of the post-structuralists (and the family of decon-related adherents in architecture), who believe that truth is a mere social construct, imposed by whatever privileged elite happens to currently wield power. The post-structuralists have thereby denied the very objective basis for advancement, for themselves or for anyone else. For what if one simply says to them, 'well, that's just your construct, from your own position as a privileged elite; I don't accept it.'

Then we have philosophical gridlock. No consensus is possible, because there is no basis to agree on any objective truth.

This notion amounts to pseudoscientific nonsense, destroying the very basis for all scientific progress and all progress of whatever sort. We must move on to the more logically consistent notion that although uncertainty is always present, truth can be identified, agreed upon, and shared - not only in "hard" technological matters, but in the realm of human feeling and value - the tacit but undeniable concern of the architecture profession.

Notice that one can appeal to science to build this case.

Toward an Updated Critical Theory of Modernism

As to the matter at hand, I do believe that it is urgent that we develop and refine an updated critical theory of modernism and its heirs, and more importantly, a credible theory as to how tradition can again take its proper and legitimate place in the contemporary world - not as a relic, not as a reactionary move against technology or against the ideals of the Enlightenment, but as a system that understands and incorporates the past, and builds upon its genius, to be truly "of its own time."

We must correct the erroneous definition of "of its time."

What gave rise to modernism as such? We have talked about the influence of the Enlightenment and many other philosophical influences. But the severe geometries, the

radical break from the past, all occurred around the time of the rapid explosion of science and industrial technology around the turn of the century.

This ought to tell us something. After all, other eras have had ample opportunity to pursue the severe geometrical minimalism that became the hallmark of modernism. It was possible long before the early twentieth century to make uniform planes, stark razor-sharp lines, stripped-down, severe geometries. Many cultures have used elements of such minimalism - Japan, for example, or Egypt, in the pyramids and in Hatshepsut's temple. But in these cultures there has always been a rich natural complexity at whatever scale that occurred at the end of the minimalist jump, a certain scalar relationship that was never exceeded - a rich fractal texture of wood, a roughness of rice paper, a sensuous undulation of stone. This was true, that is, until the advent of early twentieth century industrial methods. Then the scalar relationship was severed altogether. That became a seductive opportunity to make the total leap to forms of pure abstraction, as an artistic statement.

We can assert, then, that modernist architecture has been, in essence, a game of catch-up to this new industrial reality - one may say, uncharitably, an apology for it. It was a well-meaning effort to put lipstick on a pig.

Science and Industry in Le Corbusier and Gropius

It is clear in their writings that Le Corbusier, Gropius and other early leaders of modernism were inspired by science and industry; but more than that, they were overwhelmed by it. There is a clear feeling that they felt themselves and their profession marginalized by it, and made irrelevant. The modernist program was a desperate one of catching up, of making architecture relevant again in this new world. Their writings are full of these sentiments.

For example, in the passage from Gropius below, there is a clear recognition that this scientific beast is out of control, and we artists must figure out how to get the upper hand.

Le Corbusier, on the other hand, seems to take more pure exhilaration in the powers of science and industry, and in how they will "purify" and "rationalize" the old, dead ideas and forms.

In both cases, the reality is already there, undeniable and overwhelming. They assert that architects must now find a new art form to come to terms with this severe abstraction, this geometrical fundamentalism.

As Gropius points out, this was a reductive technology, deriving its power from atomic separation and re-assembly. By its nature we knew even then that this form of industrialism threatened the living tissues of the planet, threatened our very humanity. Gropius did what he could do at the time, from his own limited knowledge of its nature, to humanize it.

We know much more about all this now than we did one hundred years ago. Our science has seen yet another revolution - one in which atomic segregation and assembly has been supplanted by an understanding of field effects, networks, differentiation, organized complexity.

This is what I have referred to as the new science, and why I have pointed to it as a potent weapon for our cause.

Architecture has not yet caught up to the new knowledge - in fact, it is today scandalously mired in its own past no less than the bourgeois architects in the early century, perhaps even more so.

This is the urgent task before us.

A growing number of scientists, philosophers and architects are coming to the conclusion that the new science brings us back to a renewed appreciation for the collective intelligence - the unrivalled genius - of tradition. Notions of "structural attractors" and "patterns" and "differentiation" are laying a promising foundation for the re-unification of science and architecture - not as an apology for a severe industrialism, but in a way that gives new hope for an architecture again worthy of our humanity, adapted to a technological age.

It is in this sense (and perhaps this sense only) that we can consider ourselves the heirs to the original modernists. We can seek a convergence of our work with that of these "misguided" modernists, rather than shouting across an unbridgeable divide. We can be leaders.

But first, we must all agree about the nature of the early modernist project, and its relationship to science and industry.

Seminal Texts

Here is Le Corbusier, in his classic work, "Towards a New Architecture" (1924). Notice how he is exhilarated by the new epoch of science and industry. He is eager to make a virtue of this harsh new necessity:

1. A great epoch has begun.
2. There exists a new spirit.
3. Industry, overwhelming us like a flood which rolls on toward its destined ends, has furnished us with new tools adapted to this new epoch, animated by this new spirit.
4. Economic law inevitably governs our acts and our thoughts.
5. The problem of the house is a problem of the epoch. The equilibrium of society today depends upon it. Architecture has for its first duty, in this period of renewal, that of bringing about a revision of values, a revision of the constituent elements of the house.
6. Mass production is based on analysis and experiment. (MM: i.e. on science.)
7. Industry on the grand scale must occupy itself with building and establish the elements of the house on a mass-production basis.
8. We must create the mass-production spirit,
9. The spirit of constructing mass-production houses.
10. The spirit of living in mass-production houses.
11. The spirit of conceiving mass-production houses.
12. If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the "House-Machine," the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful.
13. *Beautiful also with all the animation that the artist's sensibility can add to severe and pure functioning elements.* (Italics MM)

By contrast, here is Gropius, in *Scope of Total Architecture* (1937). He is much more wary of the reductive atomic effects of science and industry, and he sees the artist as a necessary humanizing antidote:

1. CENTURY OF SCIENCE.
2. I have tried to summarize for myself what the changes are that have taken place during my own lifetime in the physical as well as in the spiritual world.

3. The mental climate which prevailed in the eighties and nineties was still more or less of a static character. It rotated around a seemingly unshakable conception of eternal truths. How rapidly has this conception been fading away, changing into that of a world of incessant transmutation, of mutually dependent phenomena. Time and space have become coefficients of one and the same cosmic force.
4. Every thinking contemporary searches his mind now trying to figure out what may be the ultimate value of our stupendous scientific progress.
5. We talk so much about the fact that the rapid development of science has cut so sharply into the familiar pattern of our existence that we are left with nothing but loose ends. In his eternal curiosity man learned to dissect his world with the scalpel of the scientist, and in the process has lost his balance and his sense of unity. Our scientific age, by going to extremes of specialization, has obviously prevented us from seeing our complicated life as an entity. As Albert Einstein once put it: "Perfection of means and confusion of aims seems to be characteristic of our age."
- 6.
7. TASK OF REUNIFICATION. But there are indications that we are slowly moving away from overspecialization and its perilous atomizing effect on the social coherence of the community. If we skim the mental horizons of our present civilization, we observe that many ideas are wholly concerned with finding again the relationship between the phenomena of the universe, which scientists had so far viewed only in isolation from neighboring fields. Medicine is building up the psychosomatic approach to treatment of diseases, acknowledging the mutual interdependence of psyche and soma, the body. The physicist has contributed new knowledge of the identity of matter and energy. The artist has learned to express visibly with inert materials a new dimension --- time and motion. Are we on the way to regain a comprehensive vision of the oneness of the world which we had taken apart? In the gigantic task of its reunification, the planner and architect will have to play a big role.
8. We have developed a Gallup Poll mentality, a mechanistic conception; we rely on quantity instead of quality, on memory instead of ideas; we yield to expediency instead of forming a new conviction. (MM: This was 1937!)
- 9.
10. ARTIST: PROTOTYPE OF "WHOLE MAN."
11. Is there an antidote to this trend? Our society has certainly recognized the essential value of the scientist for its survival. We are very little aware, however, of the vital importance of the creative artist when it comes to controlling and shaping our environment. Unfortunately the artist has become the forgotten man, almost ridiculed and thought of as a superfluous luxury member of society. *My belief is that, on the contrary, our disoriented society badly needs participation in the arts as an essential counterpart of science in order to stop its atomistic effect on us.* (Italics original. - ed.)

Several facts stand out in these seminal passages.

First, these people meant well - a fact we must always acknowledge about our intellectual opponents if we are to most effectively challenge them. (Martin Luther King once said that he always treated the southern establishment opponents of civil rights as potential friends, partly out of his Christian beliefs, but partly too because he knew he would need them as friends after victory.) Le Corbusier, Gropius, Mies et al. were trying, in their own time and with the limited scientific knowledge of the day, to integrate the scientific and industrial reality into a humane architectural vision. They simply got many things wrong - geometry,

connected structure, accommodation of natural complexity. They got wrong that the industry of the day implied an inexorable and final end of traditional ornament and geometry. We now know that what they took for a final state of ideal industry was only a passing phase of a crude reductionist technology. We now know that adaptive manufacturing processes, one-off assembly lines, pattern systems, computer networks and many other changes in industry allow a differentiation and complexity that they could not have imagined. Now, as science and industry are transformed, we must lead the profession onward, out of its continued entanglement in a outmoded industrial past.

Ironic, no?

Second, we in our time are no less in a technological age. We cannot deny the technological and scientific grip on society. We cannot pretend that science is the enemy, and all we need do is turn our backs on this enterprise, Luddite-like. For science itself is a living tradition, an embodiment of the fundamental human need to learn about the structure of the universe, and then apply that knowledge to our own survival and betterment.

It's time to take the next step in that tradition, and in our own revived tradition.

Post-script

I received the following intriguing comment from my friend and former professor, Christopher Alexander. Below that is my reply back to him.

Dear Michael,

I thought your Science and the Modernist World very good and very helpful. However, I have one comment about emphasis.

As I read and reread your piece, I felt that somehow you may be placing too much faith in science. It is perfectly true that the new science you mention is potentially able to sort out certain issues of style, and to identify, more accurately than the traditionalists have identified it, what is important and good in architecture. The benefit of the scientific way of looking at this is enormous, because it removes the emphasis from potentially fake or even absurd things. Thus we may have a more pure understanding of what is good, and therefore what to strive for in our buildings, without relying too heavily on these messages from the past.

However, we cannot rely too heavily on science either. Unfortunately - and you know this as well as I do - even the most enlightened of the scientists working in the new fields which have opened up, are for the most part, entirely reluctant to mix in what I may call 'simple goodness of heart.' Of course, as people, they may well be good, and search for goodness in their own lives, just as we all do. Undoubtedly that is so. But when speaking as scientists, they are reluctant, because of a shared feeling pervasive to all modern science, that science cannot include goodness as one of its topics, or as its focus: thus they seek, professionally, an exaggerated neutrality, which has caused the same havoc in the world, which exaggerated modernism created in the world of architecture. This exaggerated neutrality is as lethal to science, as both modernism and exaggerated traditionalism are lethal to architecture.

So, on the one hand, or main task in our new architecture is to allow, and support, and introduce a simple goodness of heart into buildings, what they strive for, what they accomplish. Goodness of heart.

Yet our task is to find forms of expression - shapes, ways of building, visions of streets, buildings, rooms - which have this simple kind of goodness and peace of mind yet which do fit, somehow, into the new world we inhabit, so that the buildings are ordinary, without pretense, have a purity of line, yet a complexity of structure, and a deep relation to 21st century feelings and sensibilities not 18th century feelings.

That is what I have spent my life trying to do, and God knows it is hard enough. You also know this, as well as I do. But I thought this comment might lighten the feeling in your article, which (as it stands) puts a little too much faith in science as it is, and which perhaps also does not quite seem to admit that style, and shape - our new style, our new shapes - must be found by us, not because of any virtue in newness, but because our world is socially, financially, ecologically, and technically so different from the world of our forefathers, and the old shapes do not fit any more.

In order to find the unification you seek, we shall have to evolve a new kind of shape for buildings, which is kinder to the human heart. And, in order to find the unification you seek, science, too will have to bend in the direction of morality and humanity, allowing goodness to be part of science, in a way which it has only just begun to do.

I have tried to express some of this in my Katarxis 3 article answering the interviews with scientists.

With all best wishes

Chris

Dear Chris,

Of course I could not agree more with what you say: I don't know how one can conceive of an appropriate architecture for our time without a profound consideration of the value and the goodness of what is created. Nor do I think science is or should be isolated from such questions of value. We have spoken about this whole historic question of value as a subject that has been artificially excluded from the purview of science for the last 400 years or so, and is only now beginning to be re-integrated in any formal way -- uncomfortably but unavoidably, like the proverbial camel's nose. I think this is inexorable -- its investigation, its re-integration, will ultimately be seen as the only logical and scientific thing to do. (I think we are beginning to see tenuous steps in this direction by people like Goodwin.) But this is very scary stuff, and the positivist fallacy seems to offer a safe professional refuge.

This is one reason I believe it is useful to come at this question from the territory of philosophy and in particular the philosophy of science, to create a more accessible bridge to the scientists. (And it is why I think the writings of Whitehead are so useful in that regard.)

I do think we must speak the language of the day, in the more limited terms to which our audience can relate. And then I do believe that the subject of value can be slowly brought in to the discussion, with very intriguing results for all concerned, restoring science to a more integral position in a more complete world view.

I recall what you wrote recently about our project to discuss these ideas in the upcoming edition of Katarxis 3:

'All of us are committed in one way or another, to the vital importance of recognizing that a true architecture can in principle be dug, from the facts, insights, and theories, which arise in

one way or another from modern views of complexity: and from scientific insights which come from extensions of complexity theory which have arisen within architecture itself.'

I believe that we are all committed to extending those ideas further in the direction that you yourself have explored for many years, the same revolutionary direction that many scientists in diverse fields are now exploring: the realm of feeling, of value, of quality.

Nowhere is the exclusion of feeling from the purview of science more keenly felt than in architecture. Architects of course recognize that feeling is of the essence of what they do. But today they do so within a world view in which feeling is regarded as a mere psychological phenomenon - an idiosyncratic "personal preference". That view of course begs the question of how we are supposed to agree on what is a great piece of architecture, if it is all a matter of personal preference. But clearly, somehow we do. Evidently there is some objective process at work that science has not yet uncovered.

Furthermore, it is widely recognized that we seem to share more universal agreement about the great works of the past. (Indeed, even many modernist and post-modernist architects are known for choosing to live in old buildings rather than new ones.) We believe this is an interesting and significant observation - that quite apart from the particular question of age, there is a question of the geometry of these places, and the technological process that gives rise to it in different historical periods. There is a question of why certain geometries evoke certain feelings. Until now, that has been an irrational mystery, not to be touched by science. And so many leading architects feel they are left with little to do but play with their deconstructed toys, like bored and mischievous children. They are in a deep and perhaps unrecognized crisis.

Of course, the logical self-contradictions implicit in today's positivist view of feeling have been demonstrated by many philosophers, notably Bergson and Whitehead. The latter two argued for the inescapable a priori status of feeling, its ontological and even metaphysical status. What is interesting now is that a new generation of scientists is beginning to investigate similar notions, in the context of hard science. New developments in the neurosciences, in genetics, in other fields of biology, point tantalizingly in the direction of a "grand unification" of the realm of fact and the realm of feeling. Biologists like Richard Goodwin now talk openly about "a new science of qualities". E.O. Wilson talks about the revolutionary discoveries he believes may be very close in the field of aesthetics, and that the field "now awaits its Mendeleev".

I believe that you, and the others represented in Katarxis 3, and the many scientists working in diverse fields, have tapped a rich vein that may well have unimaginable consequences for the way human beings understand and organize their world - and unimaginably positive ones, as we struggle out of the unsustainable thicket of reductionist technology. I believe that the enormously productive 400-year period in which facts were given an artificial prominence over feelings, has run its course, and is nearing inevitable collapse. To prepare for the next historic phase, the work of the Mendeleevs - you, others, or whomever history shows it to be - awaits.

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