

Science, Voodoo Science, and Architecture

Brian Hanson

The ways in which Post-Modernists have relativised scientific knowledge, along with other kinds of knowledge, are now well-known, and the backlash begun eight years ago by the physicist Alan Sokal [\[i\]](#) is gaining momentum. Sokal and Jean Bricmont – who in 1998 co-authored *Intellectual Impostures: Post-Modern philosophers' abuse of science*

[\[ii\]](#)

– have more recently summarised the Post-Modern attitude to scientific truth as follows: “all facts are ‘socially constructed,’ scientific theories are mere ‘myths’ or ‘narrations,’ scientific debates are resolved by ‘rhetoric’ and ‘enlisting allies,’ and truth is simply intersubjective agreement”

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. These words were directed at a certain school of sociology, but what has not been so well understood is that, since the 1970s, architectural debate has been as culpable in this process of relativisation as more obvious varieties of sociological discourse.

If modernist architects of the first quarter of the twentieth century were prone to exaggerate how *much* scientists knew about the world, in order to justify their own claims to functionalist positivism, in the last quarter they were content to follow Derrida, and other post-structuralist French *philosophes*, in regarding science as primarily of *social* significance: important more for the *world view* it promotes and sustains, than for any real truths it might reveal about the world we all live in, and in which, as architects, they lay special claim to intervening. Just like the sociologists confronted by Sokal and Bricmont, they have instead determined the truth by “intersubjective agreement”, before foisting it on the rest of us. This is why the latest book by the arch-Post-Modernist, Charles Jencks, offers not “A New Paradigm”, but “

The

New Paradigm”

[\[iv\]](#)

. For all his defence of pluralism – and his ceaseless attacks on the “totalitarianism” of others – he and his Post-Modernist, deconstructivist, colleagues have determined among themselves that there is no legitimate way of doing architecture other than the ones they present us with. His narratives (accompanied by those bewildering maps of Modern Movement

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) may include more

dramatis personae

than those of modernist historians, but they are no less deterministic. Every architectural thought, every architectural act, is given its Jencksian nomenclature, and its place on one of his family trees. By thus applying the techniques of history to the unfolding present he ensures that those committed, for example, to the serious recovery of traditional principles of building, find themselves classified as “Post-Modern Classicists”, or along with the “Vernacular”, their

buildings accorded no more significance than the peeling walls of a BEST supermarket.

The fact that in this new book – the 7th edition of his hugely influential *The Language of Post-Modern Architecture*

– Jencks has chosen, for the first time, to relegate the term “Post-Modern” to a subtitle, does not mean that the science he has now promoted to his main theme is not still deeply coloured by a Post-Modern attitude. And if Post-Modern architecture was built upon the misapplication of a philosophy itself reliant on “Intellectual Impostures”, then it stands at a double remove from the truth! It is little wonder, then, that architectural teaching and practice have come to diverge so markedly from the science which writers like Jencks call in aid to validate it. Architects and their apologists have been content to view science as yet another source of

metaphors

for their art: they have ceased to value scientific method as a way of better understanding the world in which they build. The New Sciences of chaos and complexity that have fascinated Jencks since the 1980s, and which he first developed into a full-blown “polemic” in his 1995 book on

The Architecture of the Jumping Universe

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, are enlisted by him, now that Post-Modernism has come under suspicion, to create a new cultural context – a “new world view” – within which his aesthetic preferences can continue to appear sound. These preferences are now, incidentally, for curiously-shaped, angular or “blobby”, or multi-layered buildings, dripping with “cosmic” significance. These are very different from the pluralist, or “radically eclectic”, or “Post-Modern Classical”, buildings which have variously been used to illustrate the Post-Modern “paradigm” since the book’s first edition a quarter of a century ago – older preferences of which the book still carries vestiges, as the genome bears its manifold redundancies – but then consistency was never the point of this exercise. If all architectural “truth” is a social construct, then we must accept at all times what Jencks and his peers deem – through their “intersubjective agreement” – to be truth. In recent years Jencks has shown a distinctly non-Post-Modern readiness to accept that truth (along with beauty and morality) may have an objective reality. But, in this latest incarnation of his argument, science is emptied of its factual content, so that it too can give spurious weight to what are mere formal prejudices.

It seems that **Thomas Kuhn**, with his talk of “**paradigm shifts**” [\[vi\]](#), has a lot to answer for – or, at least, those critics do who have taken Kuhn’s idea of new paradigms to mean that all scientific knowledge, because it is underdetermined, is relative: nothing more than a story well, or badly, told. Scientists themselves interpret Kuhn differently from this, believing that what they are doing is uncovering concrete facts about the world, resorting to “new paradigms” only when there is clearly more to that world than the old paradigms will allow. It is rare indeed to find an architect who can truly be called a scientist, and who approaches the world in this way.

Christopher Alexander

– trained at Cambridge in mathematics and physics before turning to architecture – is one of

them. We find him more cautious than his admirers in talking of “

New Paradigms

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, if this means merely replacing one set of scientific analogies with architecture with another set. After half a century of thinking about, and practicing, architecture, he remains unfashionably concerned with scientific truth. Indeed, at times he can sound much more like a Bauhaus modernist than a Jencksian Post-Modernist – albeit one who has long ago gone beyond the narrow certainties and limited horizons of the Bauhaus project. But the arena in which he seeks truth is a far more complex one than the laboratory, and in seeking to explore and explain the science of the living world, in which buildings play a crucial part, he has been led – particularly in his latest work,

The Nature of Order

– to adopt a language which many would presume, at first, is unscientific, verging on the metaphysical – a charge he would firmly reject.

What has encouraged Alexander, and has encouraged the editors in this present enterprise, is the realisation that natural scientists who have shared his ambition to explain the complexity of the living world, have often been led into the same grey area of a scientific method and nomenclature which do not, at first, seem entirely reasonable by current scientific norms: one thinks of physicist David Bohm, mathematician Stephen Wolfram, and biologist Brian Goodwin – and one might add to these the complexity scientists Stewart Kaufmann and Ian Stewart [\[viii\]](#) . And it is not because of the

analogies

their work provides with the work of the architect

[\[ix\]](#)

, nor for any new

zeitgeist

their collective efforts might adumbrate, that we see fit to mention such figures, but because they each point the way to new, rigorous, scientific methods for unravelling living complexity. Their work, and the work of those very few scientist-architects, like Christopher Alexander, now makes rational the pursuit of rich and complex qualities in the things we put into the world – the very things which earlier observers would have been forced to conclude could

only

be metaphysical.

The New Sciences offer a way of talking *rationally* about Quality, as mathematician Ian Stewart has pointed out:

One of the most significant developments is that mathematics in general has become more

geometric. Not the rigid geometry of Euclid: the visual geometry of the mind's eye. One important consequence is that qualitative reasoning has been put on a formal basis and turned into a precise tool [\[x\]](#)

Bill Hillier's pioneering "**Space Syntax**" – an attempt to use mathematics and computing to evaluate scientifically the civic complexities long ago applauded by

Jane Jacobs

– has already been employed to provide a logical defence of the non-linear street patterns characteristic of New Urbanism

[\[xi\]](#)

. More generally, the New Sciences allow us to explore and understand (if not yet fully to create) more subtle forms of "order" than are possible using the conventional geometrical tools beloved of architects. This subtle order is the same as that found in complex traditional environments. It is

not

often present in the modernist set piece, where the order might be severe, but never very deep. And I think they provide models to help counter the never-ending complaints (

pace

Foucault, and acolytes of his like Richard Sennett) that traditional – particularly classical – forms of organisation must needs be sustained by an elaborate structure of elite power. These complaints grossly misrepresent traditional and classical architecture, and overlook the fact that modernism has required far more elite power for

its

continuation than traditional architecture ever did

[\[xii\]](#)

, but only now are we close to having a scientific basis for demonstrating this. It begins to appear possible that the stability and formal precision of traditional environments could well be explicable in terms of "emergent phenomena" – self-generating, spontaneous kinds of order.

But for any of this to make sense, architecture needs to be understood, not as the sole preserve of the design professions, but as the product of a seamless "Culture of Building", from which the design function cannot cleanly be separated. We can see this shift paralleled in genetic science's renewed emphasis (in the wake of the first draft of the Human Genome) on the wider *context*

in which the organism develops and grows. As

Evelyn Fox Keller

concluded in her survey of

The Century of the Gene

:

The stability of gene structure ... appears not as a starting point but as an end-product – as the result of a highly orchestrated dynamic process ...

In the world of architecture and urbanism, such a dynamic process was once supplied by the diverse and interdependent activities of a host of building craftspeople. After two centuries of professionalisation, and consequent centralisation of design and planning functions, this creative dynamic has been replaced with an impoverished situation, in which stability must be *imposed*

from above rather than generated from below. Christopher Alexander's quest (at least, latterly) is best described as the quest for greater sophistication leading back to innocence: innocence in this context being the unselfconscious approach to building characteristic of traditional societies. This is not a romantic longing for a past state: Alexander confirms that new forms, materials and processes must now play their part in the way we build, but they must participate in a reformed *process*.

The convergent sciences of mathematics, physics, chemistry and biology seem to provide far greater support to such a quest, than to the Jencksian infatuation with greater confusion and obfuscation in architecture, which seems to have more to do with the freemasonic tendencies of the architectural profession than any objective reality.

Mark Lilla recently offered a chilling description of Foucault's reaction to the AIDS that would kill him: "His suspicion of the 'discourses' of disease" he wrote, "had finally rendered him insensible to any distinction between a biological factum and its social interpretation. If one believes that all 'discourse' about disease is constructed by social power, and that one can invent any 'counter-discourse' aesthetically, it is easy to convince oneself of a certain invincibility. But Foucault was not invincible" [\[xiii\]](#) . How reminiscent this is of the reaction of many architects to the ravages of modernism and Post-Modernism: a blindness to the fact that something fundamental is going wrong; and a belief that an aesthetic "counter discourse" – even that of deconstructivism – is all that is required to arrest it. As a recent editorial in *The Philosophers' Magazine*

put it, "with postmodernism finally discredited as a respectable philosophical position, we need to turn to how we move forward, taking with us the genuine insights that lay behind postmodernism's errors"

[\[xiv\]](#)

. One of Post-Modernism's insights was that the new sciences of complexity were important. Its error was to treat this science as no more than a pretext for a growing catalogue of bizarre architectural games. To move forward we need to accept that the new sciences are, in fact, telling us some significant truths about the world, which we ignore at our peril.

[i] In his famous hoax contribution to the Spring/Summer 1996 issue of *Social Text*, edited by the leading Post-Modernist Stanley Fish.

[ii] In the US it was published as *Fashionable Nonsense*.

[iii] Bricmont, Jean, and Alan Sokal, "Science and Sociology of Science: Beyond War and Peace", in Labinger, Jay A., & Harry Collins, *The One Culture? A conversation about science*, U. of Chicago Pr., 2001, p.27. The general backlash against Post-Modern relativism has gathered pace due to the mood of national solidarity following the events of September 11th, 2001.

[iv] Jencks, Charles, *The New Paradigm in Architecture: the Language of Post-Modernism*, Yale U.P., 2002.

[v] Jencks, Charles, *The Architecture of the Jumping Universe; a polemic: how complexity science is changing architecture and culture*, Academy Eds., 1995.

[vi] Kuhn, Thomas, *The Structure of Scientific Revolutions*, U. of Chicago Pr., 1962.

[vii] One admirer, Stephen Grabow, subtitled his 1983 book on Alexander *The Search for a New Paradigm in Architecture*.

[viii] Robert M. Pirsig might also be added to this list, who, in his cult classic *Zen and the Art of Motorcycle Maintenance*, commenced his quest for a rational basis for discussing Quality with a descent into irrationality, even madness.

[ix] In an interview in *Nature* in 2001 (www.nature.com/011018/011018-3.html), Ian Stewart

discussed going “beyond metaphor and into science” in his application of new scientific concepts to problems of biology.

[x] *Life's Other Secret: the new mathematics of the living world*, Penguin, 1998.

[xi] London-based classical architect John Simpson first called on Hillier in 1989 to provide justification for the winding streets of his plan for Upper Donnington, Berkshire, illustrated in The Prince of Wales's book, *A Vision of Britain*, Transworld, 1989, p.140.

[xii] See Lucien Steil, “Tradition and modernity”, *Katarxis*.

[xiii] Mark Lilla, *The Reckless Mind: Intellectuals in Politics*, NY Review of Books Inc., 2002.

[xiv] “Postmodernism R.I.P.”, TPM Comment, *The Philosophers' Magazine*, Issue 20, Autumn 2002.

http://www.katarxis3.com/Hanson-Voodoo_Science.htm