

Out of the Lab, Into the Jungle II

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Have you ever heard of the Bowerbird?

This bird, known to animal cognition experts but not so much to architects, is intriguing because it appears to exist at the edge of consciousness, driven by both bottom-up instinct as well as what appears to be taste. In order to attract female mates, male birds build an audacious 'mating-stage', characterized by ornate thatch-work, berry-juice paint, and colorful collections of organic and synthetic objects. This is not a nest, but a girl-magnet, and while it is evidence of the male's prowess and ability to procure resources, its primary expression is of the male's aesthetic sensibility in construction. Females are highly discerning-- they look for formal coherency, color composition, and construction innovation in these stages. According to James and Carol Gould, authors of *The Animal Architect*, the male's "constant fussing to try new variants...implies an element of something like personal style," noting that the birds "must receive some kind of pleasure from the sight of such things."¹ What is so interesting about the Bowerbird is that they have such a highly-refined sensibility for excess, something we usually only attribute to the human animal. How we love to short-change non-human animals! But then, there is the Bowerbird, seemingly operating based on motor programs, environmental cues, and necessity, but also (gasp!) its appreciation for architectural affect!

Architecture has been obsessed with science for the past 20 years, in terms of the digital simulations and form finding, generative design, and seductive discoveries in the natural sciences relating to complexity and systems theory. This obsession also reflects a conscious effort of the neo avante garde to move beyond the critical project of the 1970's and 80's towards a materialist paradigm. In 2009, it appears that many practitioners, especially in academia, have lost interest in, or sight of, disciplinary issues specific to architecture. As Jeff Kipnis has said, in order for something to be a discipline, it must have its own, independent form of knowledge, otherwise it ceases to be a discipline at all.² Architecture loves to borrow from other disciplines; it is a kind of tradition since the schizm of design and construction during the Renaissance. The danger is, when we begin to promote the wholesale transfer of scientific knowledge and values into architecture, we begin to lose the richness and true complexity architecture can have. I am myself a science-minded architect, and I am beginning to feel uneasy with what I can best describe as the tendency to promote process over effects, or in another way, thinking over feeling. The best architecture is robust enough to operate in multiple ontological realms.³

The Problem with 'Swarm Architecture'

Consider the explosion of new rationale for design all around us, including so-called parametric design, swarm architecture, parametric urbanism, and so on, all of which appear to be apologies or justifications for design. The fact that these are often used interchangeably is telling, since we are in fact dealing with contradictory terms. 'Parametric design', for instance, is as top-down as puppetry, but it is often promoted as a bottom-up process. In parametrics,

the outputs always resemble the inputs, which is impossible in generative systems. While parametric techniques are undoubtedly good for rationalizing geometry and maintaining associations between components, they always reaffirm zero-sum logic rather than excess.

‘Swarm architecture’ is a contradiction in itself, insofar as architecture in the world does not arise spontaneously based on simple rules, but instead emerges as a complex political, economic, material, technological, and cultural activity. People have been working for nearly two decades on swarm logics as they might pertain to architecture. They have succeeded in producing the most beautiful particle tracery and agent-based animations a la Craig Reynolds’ flocking algorithms from 1986, but these appear to exist somewhere between pseudo-science and visual art, not architecture. A virtual agent is just not the same as a brick. And when you force the relation, you end up with something anemic and weak, without any of the traits of a complex adaptive system like, for instance, a swarm.

The problem is that scientific rationale in design-- related to process and thinking-- has begun to overpower the actual effects of the built thing in the world, in particular its affect and contribution to culture. Processes have often become the end in themselves rather than a means to an end. And if the architect is not interested in producing particular effects through architecture then they are interlopers.

Into the Jungle

In our office we are bolting out of the laboratory and into the jungle, Jurassic Park style. In the lab, we would have to be doing ‘research’ which of course becomes problematic when you compare scientific research with architectural research. For research to be research, it requires two things, one, that it be reproducible, and two, that it be productive even in failure.⁴ Architectural research cannot hold up to that. Also, if we were in the lab, we would be invested in a quest for absolute truth rather than resonance (relevance mixed with affect), which architecture should probably not be doing. In the jungle, we can instead concentrate on the production of vivid features and behaviors, color gradients, variability, wild ornament, and atmospherics. When you’re in the jungle, it is affect first, process second. This is not to say that issues of utility or evolution can be excised from the discussion, but that it’s simply a relief to admit that architecture is not a science, and that architectural effects can be created in myriad, messy ways rather than according to scientific method.

Our design process is messy. It leaves loose ends. It allows for some things to be slightly out of control (generative) and others to be unapologetically authored. The use of computation becomes sporadic and strategic rather than all-encompassing. Scripting turns out to be very valuable for this kind of guerilla approach. Although it is certainly a subset of algorithmic design, it does not have the same implications of having scientific validity or magical properties. Scripting assumes no scale or end-use, nor does it confuse architecture with natural phenomena. It is a tool in need of an author to direct its use. Scripting, my colleague Peter Testa likes to say, “is like sketching”.⁵ But sketching with a computational sensibility, and sketching in populations of versions, rather than laboring away at a single expression. Scripting simply automates, iterates, and delivers sets of geometry which, depending on available features, can become structural patterns, metabolic networks, enclosure systems, or ornament. Scripting does not imply value in itself; it is a means to an end. A script can never create real complexity on its own.

Our office has found scripting to be most productive when it is used in early phases of a project in an abstract way, with no pre-determination of scale or target applications, but framed within a known architectural territory such as structure, mechanical systems, apertures, or surface character. Iteratively, features begin to appear which appeal to either performative or aesthetic sensibilities, and eventually, both. These features never arise fully-formed, rather only by teasing them out, and by constantly feeding specific principles and desires back into the mix. Eventually, proto-architectural species emerge. These species have begun to accumulate in our collection of geometry we refer to as 'The Menagerie'. Buildings are designed either by using several species in various hierarchies or scales, or a single species across its full range of behavior. Nevertheless, features or behaviors of species never appear all the time, from massing, to organization, to detail. You would never find that kind of relentless consistency in the jungle.

Working this way with scripting produces a multiplicity of 'found' objects with open-ended potentials; nature, not coincidentally, always works from found objects as well. There is no such thing as a tabula rasa in the natural world. There are no beginnings and no ends, just sets of features and behaviors which are incrementally evolved, sometimes in baby steps through optimization, and other times in massive leaps through mutation. This process leaves a messy trail of excess, redundancy, obfuscated function, and non-optimal features. In any case, the complexity and distinctiveness of a species cannot be fully understood merely by examining its evolutionary history, but rather by engaging it in its vital state, in all of its visual and behavioral beauty. What matters in buildings, in the same way, is not the sum of their history of production, but rather the real-time effects they generate.

- 1 Gould, James and Carol, [Animal Architects](#), Basic Books, New York (2007) p. 246
- 2 Kipnis, Jeff, [AADRL Documents 2: A Design Research Compendium](#), 'Jeff Kipnis in Conversation', Architectural Association Press, London (2009) P. 51-52
- 3 Kipnis, Jeff, SCI-Arc Lecture, January, 2008.
- 4 Kipnis, Jeff, *ibid.*
- 5 Testa, Peter. From informal discussions in our SCI-Arc Digital Design Studio, 2006-9.