

BIOMIMETIC WORKSHOP

Bio-mimetic agenda

Rather than falling back upon well rehearsed spatio-kinetic systems, like striated or folding surfaces, a whole new range of physical systems should be generated on the basis of biological analogies. The world of organic life might be scanned on many scales, from large organisms or even biotops to individual microbes, in search for models and principles. In particular the following types of systems should be investigated:

1. envelope/boundary systems
2. structural systems
3. kinetic systems
4. systems of aggregation/organization

We are going to use the bio-mimetic approach to expand the repertoire of architecture along these 4 dimensions. Each of these systems might be taken from one and the same organism or each of these systems might be taken from a different organism. The elaboration of the biological model might proceed in three steps:

1. The selective, but truthful, modelling of the organism's system.
2. The proposition of technological, artificial equivalents - quasi-prosthesis.
3. The transference of the models and principles extracted into the construction of a new architectural systems that might eventually function in the context of the project scenario.

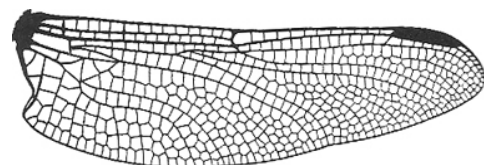
This analogical method relies on a precise initial investigation of the respective models and principles. Quick metaphorical applications should be avoided.

Results expected:

At the end of the term the two investigations have to be presented: First, the bio-mimetic models have to be presented as physical and digital responsive systems.

Finally, a sketch design has to be presented: the first attempt to synthesise the bio-mimetic systems into a tectonic model – to be executed as STL model.

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Theory of Organisation

classical notion of organism

eternal, definite type – “idea”, “ideal form”
temporary

fixed number of parts in determinate, fixed relations

complete: do not add, do not subtract

each part has clear purpose, function

whole is final cause of each part
upon

order /cosmos=
everything in its place and a place for everything

well-proportioned

assemblage

no a priori form, contingent,

loosely coupled network of elements

may gain or lose elements

parts take on temporary,
unexpected functions, “detournment”

unity of assemblage is contingent
adopted system reference

unpredictable self-organisation

monstrous

One side of a machinic assemblage faces the strata, which doubtless make it a kind of organism, or signifying totality, ... it also has a side facing a body without organs, which is continually dismantling the organism, causing asynsignifying particles or pure intensities ... *A Thousand Plateaus*, p.4

“The ant’s path is irregular, complex and hard to describe. But its complexity is really a complexity in the surface of the beach, not a complexity in the ant. ... A man as a behaving system, is quite simple. The apparent complexity of his behavior over time is largely a reflection of the complexity of the environment in which he finds himself.” Herbert Simon
“Sciences of the Artificial”

“ a profound alteration in the structure and function of the vital organs, an alteration such that it constitutes a new way of life for the organism, new behavior which prudent therapy must take into account” (p.84) “understanding the sense and value of the pathological act for the possibilities of existence of the modified organism ...” (p.86 Georges Canguilhem, *The Normal and the Pathological*)

End.

