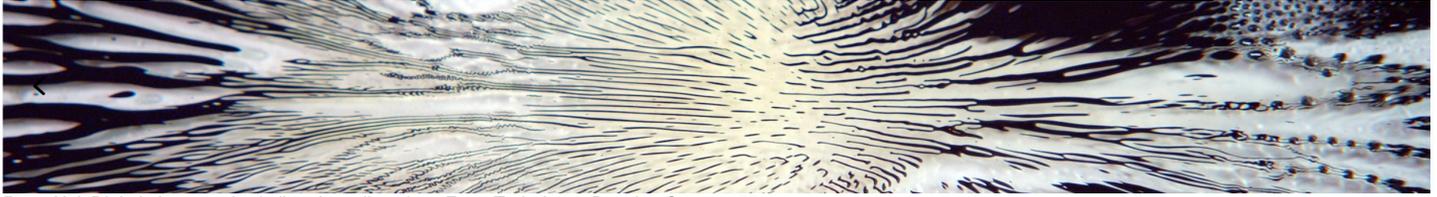


Arch 7101 Ellinger



Perry Hal. Digital photograph of oil and acrylic paints. From Turbulence Drawing System, 2014.

Multivariate Design

Background

At the turn of the 20th century the discipline of architecture was in a state of flux with intense disagreements about the future of design. At play were those promoting precedent driven neo-classical design logics and/or one coming from building technology (primarily advances in steel and glass). Against these trajectories were those searching for a new design theory that would be born out of affordances of the new technologies. What emerged was the rejection of precedent driven design and building technology for what would become the core of modernist approach. However, this design logic built upon *pure essences* and *the ideal* led to a rejection of difference, giving rise to the modernist's functionalist essentialism. Architects and theorists at the time relied on prominent discourse from philosophy and the sciences where essence of being, scientific classification and a reduction to type were the driving principles towards finding an ideal – systems built upon the rejection of difference as the means of determining the uniqueness of something.

At the turn of the 21st century, theories of these same disciplines have by-in-large rejected the notion of essence as defining the unique. Instead they have turned to an understanding of how *difference* is incorporated as to what constitutes the unique. Biologists are rejecting essentialism (type) as a means of classification and philosophers are presenting ideas like 'assemblage theory' that reject essence in favor of multiplicities.

At the same time there is a lack of *design* direction in the field of Architecture. In a similar way to the turn of the 20th century, in the face of the emergence of a new technology—ubiquitous computation, there is there conflicting ideas about where the discipline is heading with some suggesting a return to previous design theories or building technology. However, contemporary lines of thought in the sciences and philosophy once again find themselves nicely aligned with the emergent technology and an embrace of affordances could lead to a design approach that respects advanced computation as a paradigm shifting technology and not 'just another tool'.

Like prior to the turn of the 20th century where individuals like Louis Sullivan were questioning design trajectoriesⁱ and proposing something against the current trends (1896), many contemporary architects and theorists have been promoting design theories that embrace advanced computation since the mid 1990's. More recently, philosopher Manuel De Landa presented a design logic that suggests rejecting pure essences and representations of the ideal to a more inclusive understanding of multiplicities and differentiationⁱⁱ. He describes this kind of design thinking as a 'material' process where multiple internal and external constraints work together to produce a resultant condition. Understanding the relationships between force and material that result in specific formal produced from the intricate differences between these

variables rather than reductive averages is the proposition in this design thought. To fully leverage these intricate differentiations, advanced computational techniques are embraced and developed to promote a design logic that is the result of a multivariate process.

Premise

The studio will focus research efforts on developing a design logic based on a computational approach can be advanced to develop novel design solutions.

Focusing on recent philosophical writings and theory from contemporary architects, the studio will self-select into research groups that focus on the following areas: **form**, **material** and **program**. A comprehensive study of how recent projects by a variety of Architects have leveraged differentiation within one of the areas will be constructed as a catalogue of techniques.

Method

Using computational design, informed by the catalogue of design techniques produced and built upon the foundations of assemblage theory (difference and multiplicity), projects will be produced that explore embracing advanced computation as a paradigm shift to produce new methods of architectural design.

*The specific project will be given at beginning of semester

ⁱ Louis H. Sullivan, *The Tall Office Building Artistically Considered* (Minneapolis 1922).

ⁱⁱ Manuel Delanda. "Philosophies of Design, The Case of Modeling Software." In *Verb* (Aktar 2000). Pg 131-142