Designing by Analogy and Evolutionary Models

Considerations on the Development of Evolutionary Design Tools for Architects in Practice

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Abstract

My last article for GA2003, "Breaking the Type", discussed conceptual differences and similarities in the analogy between biological evolutionary theory and evolutionary design models. The objective of that earlier paper was to shed light on the similarities and differences between the models (in particular concerning the notion of purpose and species), in order to avoid misrepresentation of the design processes. With the notion of purpose and species, we aimed to question how architects "break" types and create innovative designs by recombining their parts.

Here we keep the same approach, i.e. to give some insights into design processes and the use of the evolutionary analogy for modeling. We choose "analogy in design" as the main theme for this paper because, in order to acquire new material, architects over the centuries have often been using analogies. Thus, the present article discusses the use of analogy by architects in practice and the possibility of modeling it for future recollection, use and adaptation. We argue that the analogous object is a particular kind of design precedent that is modified over the years and often contributes to the creation of innovative designs. However, some kinds of analogy used by architects seem to be less suitable for modeling than others, therefore, we will provide some material for discussion in this topic. The ultimate objective of this article (as well as of the latest) is to provide ideas for the improvement of evolutionary design models for architecture.

Keywords:

Analogy; evolutionary model; design precedent; innovative design, architecture.

Curriculum Vitae

In 1985, Karina Moraes Zarzar obtained her Bachelor's degree in Architecture at the UFPE University, Brazil. Between 1989 and 1991 she followed the OPB post-graduate course at Delft and Eindhoven Universities of Technology in The Netherlands and obtained the title Master of Technological Design (MTD). On June 11th 2003 she received her doctoral degree at the Delft University of Technology. She is currently lecturing and at the same university and is also engaged in design research.