Computers cannot design today. Nevertheless, a great deal of research in AI is based on the premise that we could artificially reproduce the human design thinking. The purpose of recent scientific investigation is to have a better understanding of the human design reasoning. The articles “Design Protocol Data and Novel Design Decisions” by Omer Akin and Chengtah Lin and “On the Analysis of Intuitive Design Processes” by Charles M. Eastman relate research that consists of studying the cognitive strategies designers employ.

The experiences presented in those texts have quite a few common characteristics. Both cases consist of studying the behavior of a subject in the form of a protocol to access the design thinking. Then each subject is instructed to design something while an experimenter analyzes the produced outputs. Designers employ a variety of visual or graphical mediums of work to treat different kinds of information that is sequentially processed. In “Design Protocol Data and Novel Design Decisions,” the activities that are observed while a designer is working are the following: thinking, writing, examining, and listening. The subject was instructed to think aloud to enable the experimenter to interpret his activities. Usually, designers do not speak while working, but the speaking activity is an echo that obliges them to structure their reasoning.

However, Ch Eastman points out the limitations of the use of the think aloud method when one wants to access the designer’s mind. How could we evaluate the correspondences between what the subject expresses and what he really thinks? The way human think is a really complex phenomenon. Nevertheless, even if we do not have accurate tools today, the results of those experiences are remarkable.

Thanks to the protocol analysis, quite a few patterns of the strategies designers employ while designing were documented: Subjects began designing by clearly defining their concerns in order to define rules and constraints that they will apply for a design. Ch Eastman also pointed out what he called the “trial-and-error process,” - designers process data by sequentially drawing an idea and then, testing it. This process is comparable to the loops implemented in computers - while the idea is not satisfying, the designer try another one. Those experiences also enabled to analyze the influence of the different “design activities”. The conclusion is that designers employ quite a few means of representation to process several type of data.

As a student in architecture, I found those result very interesting. The patterns enlightened correspond to my own design strategies. At the very beginning of the design process, I usually try to have a deeper understanding of the subject by analyzing the program and the site. From my understanding of the subject, I try to define a concept that will narrow the design space. According to those studies, this strategy is usually employed by designers.