

Assignment 4: Domain-Oriented Design Environments and Critiquing

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The article emphasizes the importance of critics for the designing process. It says critics can help with the formulation of the problem, can help a designer to revisit the subject from different views and can help him/her to learn knowledge from the larger space. The system also presents a model how a designer collaborates with the clients, who will input specific and interpretive information.

I am a little familiar with some notions this paper talks about, such as critics, expert system and case-based reasoning (CBR) etc. It shares some similarities with a project I knew from my Symbolic Product and Process Modeling class (<http://www.stanford.edu/~kunz/irtmm.html>), which is about plant maintenance but it also performs diagnosis and CBR. I saw a PhD student's work was related to critics – she applied critiquing in sketches of hospitals. We had a group project using Bentley Microstation (we could access its java source code) to analyze user-defined spatial relationships (distance, adjacency, accessibility and so on) between spaces, zones, etc. And we could also add comments to those objects and then generate reports online.

When I am reading the paper, I kind of imagine the situation that I would really use the system in my work. Whenever I feel unsatisfied, I would think from the computational point of view and try to find what the problem is. The system described in the paper provides a designer with appropriate feedbacks during the design process as well as background information. I don't have any problem with the general framework. What is also interesting to me is that the authors are keen to the possible problems, such as:

- Say the right thing at the right time
- Information overload

I cannot say the second problem is easy, but the first problem is more complicated because it is composed of several issues. First we need to know what is the right thing for a designer. It is very nice for this paper to use a simple kitchen design as an example to illustrate the main idea clearly. But it doesn't say what design phase it is. If I am working on the initial arrangement of equipment (configuration), and the system reports to me about height or distance problems in numbers, I would consider it not so smart.

It is the first time I heard "DODEs" and lunar habitat design so I would like to know more about them. And I would like to see the demo of the system. It is a little interesting too. I thought I was really bad at understanding

papers until some day we invited Fred Martin (who designed handy board) to our lab to give a talk. After we talked about the project called "Topobo" (<http://web.media.mit.edu/~hayes/topobo/>), we watched the "Topobo" movie online. Then he said "Without seeing the movie, it is really hard to know what they mean in their paper". So that was a happy day for me – at least I know two people need to see some "real" stuff.

It is possible to carry on a comparison research between the embedded critiquing system and some traditional method to design a new product. The current system can be extended for multiple designers, which is in fact more common. I would prefer the system having graphical indication and partial automation. As to graphical indication, I mean we could replace text messages with display of shapes. I regard drawings are the first language for an architect. About partial automation, for example, the layout of a kitchen could be decided after several "movements", then we don't need to continue designing manually.