

ISE575c paper review (week 3)

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1. A task analysis of music composition and its application to the development of Modalyser (Richard Polfreman, 1999)

This paper was written after his Ph. D dissertation, User-interface Design for Software Based Sound Synthesis System, to present a generic task model (GTM) of music composition and the music software with improved graphic user interface design with regard to GTM. The philosophy was that if the composition process is well understood, composition software can be developed for general users. With the researched GTM in his thesis, Modalys, the sound synthesis tool developed at IRCAM, was upgraded as Modalys-er, the sound synthesis tool with GTM based graphic user interface.

The recent GTM model, Knowledge analysis tasks (KAT), was introduced in terms of task knowledge structures (TKS), which are divided into three main substructures - goal, procedural, and taxonomic hierarchies. A TKS is made on the basis of composer's interviews or questionnaires, and direct observation of composers at work. Because many composers approach their work with different orders and jumping way between procedures, GTM goals network has many different flows. Broadly speaking, design framework goals, research goals, and produce music goals are basic three categories. The author explained mainly for the first and the third goals. To achieve those goals, the detailed sub-goals and taxonomic objects were explained well.

Although GTM has some limitations to find the analysis should stop and to generate secondary goal relations, it is very helpful for the software developer to understand user's tendency and apply it to the user-interface design. With the help of GTM of music composition, the author developed Modalyser software with the developer of Modalys, IRCAM. A Modalys is specified in terms of objects, connections, controllers, and accesses algorithms. A questionnaire survey was carried out to use the specified GTM onto Modalys. Finally, the GTM structure for Modalyser was narrowed by two, Score and Instrument, and divided into four task models, so called Score, Performer, Techniques, and Instrument. Given by an example, Modalyser is easier to understand the process of generating music. However, there is still a lot to be improved. The recent Modalyser is ver. 2.2.1 and interface was mostly changed. Furthermore, the author developed Modalyser for open music(MfOM) for better automation process, and also joined making another program, called Frameworks and released the paper about it. Generally speaking, if software developers study a task analysis and apply it to their software,

more and more common users can approach those as the ones are normally do out of computer. In my opinion, if the author can transfer acoustic notions into realistic words – If someone says this sound is warm, it contains the low frequency component is dominant - , this program will earn a success from composers who have a common sense about music. As an engineer, Modalyser is a great tool to generate sound very close to the nature with good GUI features. But as a composer's mind, it is not a killer program for composing yet.

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2. Psychological analysis of musical composition, by Ron Roozendaal

The purpose of the author's research was to find a conceptual model of the musical composition process and apply it into a computer-assisted compositional tool. Beginning citations from the two great philosophers, Plato and Aristotle, this paper opened a possibility in understanding the creative process.

From models of the processes of written composition, Scardemalia and Bereiter's two descriptive models, 'knowledge-telling model' and 'knowledge transforming model', were shown. Their first model can tell the relationship between conversation and knowledge transforming after watching children. So it is highly sequential process. Whereas, the second model, for advanced people, contains knowledge telling model but it depends a goal set up in the first stage and has large scale revisions. Smith and Landsman brought in cognitive mode models from writers and Tayken introduced model of the design process. Those two models have in common terms.

Similarly, for musical composition, Slobada's model of musical composition was shown. Although many composers have different strategies, the author proposed a hypothetical model of the music composition process using some common ways of thinking and working patterns collected through models mentioned before. He categorized into four modes, processes, products, goals, and constraints. In this paper's experiment, observable processes and products were mainly considered to find an accordance of models mentioned. After hideous sessions and analyses among reluctantly participated composers, the first results fitted well in the model. However, it contained many problems, which might be solvable with the help of computer tools.

The author was guardedly optimistic for the hypothetical model of musical composition. But I believe that the number of composers was not enough to validate his work fully. His model can be supported by the previous models and philosophies and it seemingly worked. However, compared to the previous researched models, explained results were described poorly. If he can apply his proposed model into a computer-assisted composition tool and take some feedbacks from many composers, he can validate his research.