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**Psychological Analysis of Musical Composition** by Ron Roozendall

In this paper Roozendall provides a conceptual model for musical composition process, constructed by the techniques of psychology and knowledge engineering. The model was built on the basis of research from other three design domains: writing, architectural design, and industrial design. Composition process was analyzed by observing and recording composers performing the task. The results of human experiments, which are conducted to evaluate the model's capability, are presented as well.

In the beginning of the paper, Roozendall described two opposite views of creating music: the divine verse craftsman. He took the later point of view in this paper to analyze the creative process of music composition. He started by examining the research on writing composition. Two different writing tasks were introduced and compared: knowledge telling and knowledge transforming. Knowledge telling is a simpler task because it just involves information retrieval from memory in a sequential order without large scale revisions. In contrast, knowledge transforming requires problem analysis and translation. It is performed structurally with no fixed starting point and may have large scale changes in the future. Roozendall also mentioned the cognitive model from Smith and Landsman, who categorized the main concepts in writing into four components: processes, products, goals, and constraints, and listed corresponding activities at each stage of writing composition. A cognitive model for architectural and industrial design, resembling the cognitive modes provided by Smith and Landsman, is also shown in a table.

The first musical composition model mentioned is Sloboda's model, which classifies thinking into conscious creation (theme writing for example) and unconscious judgment. Many of other researches also indicated that composing is a cognitive process, requiring active listening and compositional grammar checking/altering. Roozendall then proposed a hypothetical model of music composition, combining the global assumption of Sloboda's model and the detailed definitions of Smith and Landsman's cognition model. To test the model, Roozendall conducted several composition experiments. Composers (subjects) were trained to talk aloud of their thoughts to reveal their thinking process. Many different composition tasks were created in the experiments, including a modulation task and a completion task. The results were consistent with the model and showed a number of cognitive problems, which might be alleviated by the use of a computer-assisted composition tool.

It is a psychological paper that is new to me. It describes many systematically model for analyzing human creative activities. I am amazed by how those researchers can carefully and clearly describe human's thinking. The experiments Roozendall conducted are very interesting, especially those different scenarios he designed. It is a pity that he did not say much about the experiment results. I believe that the results may be too complicated to analyze, or the details may not be related to the purpose of his research. But I wonder if the strategy of a composer will change under those different and "extra" constraints.