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Chapter 11 Constraints Are Friends

There is always an argument about whether constraints are good for design. Some people think that constraints play a negative role in design because people do not allow to think out of constraints. However, some people are accustomed to staying within constraints. I personally believe that including constraints makes the task of designing easier than removing constraints, because constraints can help designers know what they can follow and how they can carry out the design. When working with constraints, there are two types of constraints that need to be avoided. The first type is “obsolete constraints”. An example of this is how memory size used to be a constraint several decades ago, but now it is no longer a major constraint that needs to be considered in the design process except embedded systems. The second type is “misperceived constraints”. An interesting example of this is the puzzle game that requires people to draw a continuous line with equal or less than four straight segments through 3*3 dots. Some people would focus on drawing lines within the boundaries of the 3*3 matrix. However, it is misunderstood because no one says that these lines only can be drawn within the boundaries. Thus, design should focus on what it is being designed for instead of what design does.

Consequently, the hardest part of designing is determining precisely what to design. The more specific the purpose, the easier the design works. Constraints can help people know how to judge what excellent designing is, meaning that constraints are the guidelines to help people achieve an excellent design. Finally, the author suggests that people need to consider the user and use models first when the task seems without constraints, because this can help designers find implicit constraints.

Chapter 7 Esthetics and Style in Technical Design

In technical design, although firmness and usefulness are the main essential purposes, esthetics still plays a very important role. In technical design, logical beauty is treated as an esthetics. There are many principles to achieve logical beauty. Parsimony can be one of these principles, referring to the completion of a design with the use of few elements. Moreover, logical structures and familiar metaphors also can help achieve elegance in design. Consistency is considered a crucial principle in computer architecture, making design clean and predictable. Three concepts, orthogonality, propriety, and generality, are derived from consistency. Regarding the first two concepts, orthogonality means that orthogonal function should not influence another one in the system, and propriety proposes not to introduce what is extraneous. The third concept, generality, demonstrates that designers should not generate a function by using open-ended concepts but instead by considering about its use. Style is also a factor in technical design, which can be defined by an expression of designers’ personal and professional choices. Finally, the author suggests that people study other designers’ styles, make conscious judgements, continue practicing, check any inconsistencies, and cautiously choose designers for their products.