

RULES: DO THEY RESTRICT OR RELEASE CREATIVITY?

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Research aim is to explore the relation between creativity and rules considering the latter as the source of creativity rather than the limits for it. Due to huge variety of the activities in our life requiring creativity, the scope of the paper is narrowed, and the focus is put only on the processes of creating visual arts and architecture.

Keywords: art, creativity, imagination, rules, shape computation, shape grammar, transformations

Research tasks and methods. Theory of shape grammar (Stiny & Gips, 1971; Stiny, 2006) is chosen as a starting point. Shapes are ambiguous in shape grammar, and this ambiguity serves Stiny right for a creative design process as shape rules can be applied to shapes to achieve unique results or even to generate pieces of art. How shape rules and artists' rules coincide is an interesting task to tackle. Thus, the relevance of the rules for the abstract art is examined more in detail in the second section of the paper. Even more intriguing question is a possibility to apply the shape grammar rules for the realistic drawings. Therefore, the third section of the paper is focused on creativity in such fields as the concept art, creative illustrations or character design. The key principles of drawing with imagination (Dodson, 2007 (Figure 1)) will be compared with Stiny's rules of shape grammar. This comparison tests the initial hypothesis, if rules limit creativity or, in fact, they can enhance and release it.

Results. The concepts of rule vary in literature depending on the level of strictness and obligation to obey them. The concept, adapted here, defines rule as an optional principle governing certain actions. Shape grammar suggests the formalism of rules which can be applied both for analytical and generative purposes. The analysed examples of abstract art proved that shape grammar is very suitable and relevant in order to create unique pieces of art. The phenomenon of increased creativity when the rules or restrictions occur can be explained based on the human psychology. People are not good at completely open-ended choices. Firstly, because with total freedom people tend to repeat the known actions. Secondly, responsibility comes with freedom and the fear to do a mistake again pushes to repeat what is already tested. Furthermore, comparison of Stiny's developed ideas with B. Dodson provided principles of creative drawing revealed a lot of similarities between them that confirmed the possibility to adapt shape grammar rules for even more realistic design. Creativity is a result, reached by doing action, which follows certain rules. In other words, creativity and rules are linked together through the action.

Practical significance. Application of rules of shape grammar to education process seems to have yet fully undiscovered potential as existing attempts to do that seem to be very promising. That leads to the notion that rules are not obstacles for creativity rather they are tools or guidelines which can make creative process easier.




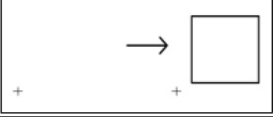
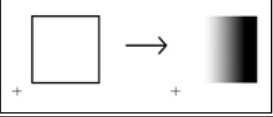
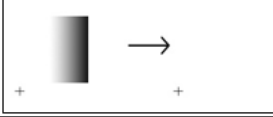
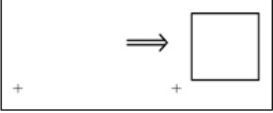
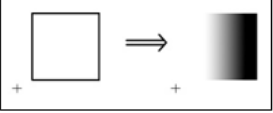
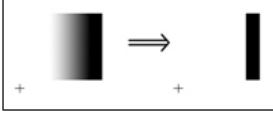
Illustrations from Dodson's book (2007)				
Phase (by Dodson)	Generating	Transformation	Transformation	
Algebra (by Stiny)	$U_{00} \rightarrow U_{12}$	$U_{12} \rightarrow W_{22}$	$W_{22} \rightarrow U_{22}$	
Schema (by Stiny)	$\rightarrow x$	$b(x) \rightarrow x$	$x \rightarrow$	
Analogue of shape grammar rule				
Example of calculation				

Figure 1. Dodson's illustrations defined in terms of shape grammar. Interpretation by Ingrida Povilaitienė, 2021