

# Creativity Patterns in Art Perception

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Goldenberg J., Mazursky D. and Solomon S. searched for regularities in creative ideas and creative thinking. They studied those subjects mainly in the field of marketing: advertisements and new products innovations. They found creativity templates, meaning well-defined, objectively verifiable, and generalizable abstract patterns. From those templates, creativity emerges. The templates describe the relations between the components or the attributes of a product. Creativity templates appear in most creative advertisements and new products. For instance, 89% of the award-winning advertisements contained templates. When templates guide the innovation process, the ideas created are, in all probability, creative.

Our aim was to check whether creativity templates exist and can achieve similar results in other fields. We chose the most creative and subjective field: art, and to be more specific, creativity perception in photography. What makes a photograph creative?

In this study we used 23 photographs that were regarded on the web as "the best pictures of 2003". Fifteen subjects from various countries chose the five most creative photographs from the set of photographs, and explained why, in their opinion, those pictures were creative. We were interested only in the components referred to by viewers when judging art, and not in the whole photograph or all of its objects. Thus, we searched for patterns in subjects' explanations.

In total, we had 72 explanations. Only 35 referred to the elements in the photographs. Only these 35 explanations could be translated to the formal way which is essential for detecting creativity templates. The other explanations were unclear or described the subjects' feelings while seeing the photographs. From the 35 explanations, 43% contained patterns. We found three types of patterns: Diagonal Link, Properties Tension, and Unification. We will describe briefly each pattern, and illustrate it.

Diagonal Link (DL) pattern is a transitive connection: a connection between two components generated by the connection of every one of them to intermediate component. Twenty percent of the 35 explanations contained DL. It is embedded in one frequently seen creativity template known as the Replacement Template. We will demonstrate the DL by a photograph showing a ship sailing in icy water at sunrise. One of the subjects who chose this photograph as creative explained his choice in the following sentence: "The back light is illuminating the fog in a very intense manner so that it almost appears as fire". In this explanation the back light affects the fog, the back light is red, and the transitive result is a 'fire-like' red fog.

Properties Tension (PT) appears when the main components in a photograph have contrasting properties. This pattern appeared in twenty percent of the explanations. In one of the photographs one could see the head of a black cat with yellow eyes in a golden wheat field. One subject's explanation was: "...the eyes of the cat look bad and the field of grain looks kind". The main components in this photograph (the cat's eyes and the field) had the same color, but contrasting properties (bad versus kind).

Unification pattern appears when two unrelated objects joined to form one hybrid object, which looks like the first object but functions as the second. It was found in 11.4% of the explanations. One photograph captured a child in mid air jumping onto a pile of dead leaves. One of its Unification explanations was: "A child jumps into a pile of dead leaves as if it were a swimming pool". A child jumped onto an object that looks like a pile of dead leaves but functions as a pool.

Three fixed formulations of the elements in a photograph were found to cause creativity perception. Those are primary results and our patterns need to be further validated to be called creativity templates. However, those results show that art perception is not as arbitrary as might be imagined.