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dynamic visual formation

The point of departure for the ongoing research was the question of how to teach visual language, and what to teach, both for and in a dynamic environment. Like the inquiries on visual form carried out by Kandinsky and Klee in the beginning of the 20th century, the research searches for the most elemental constituents of visual formation in the computer environment.

The research examines theoretically and experimentally the creative process of image-making in the computer environment by:

- proposing a “system of dynamic visual formation”
- exploring the creative process of visual formation in a series of on-screen experiments

A visual form is a stable spatial structure. It is a time independent spatial whole. Because there is no change with time, it is described only by spatial parameters.

Visual formation engages the spatiality of visual form with a temporal dimension. It is time-dependent in that it changes in time, such that later parts are dependent on earlier ones in the continuous process of formation. Its dimensions of time and space cannot be isolated.

What is proposed is a “dynamic visual formation.” The term “dynamic” indicates the possibility of modifying the process already changing in time. In this sense, a visual formation is not a fixed process. Rather it is a dynamic, an ever changing spatio-temporal whole: it is always in the course of becoming, of forming and trans-forming.

basic element

Point, line and plane (and volume for 3D) are considered the basic elements of visual language —and of Geometry. This division is no longer necessary or even valid in a dynamic environment, where spatial structures are processes changing in time. In other words, each point, line and plane is now one of many states of a dynamic visual formation.

What is proposed as the basic element is a “rhythmic unit,” a variable spatio-temporal module that is created and recreated by means of a system of inter-actions. The rhythmic unit is characterized by a rhythm which is a compound of a rhythmic cycle and an interval.

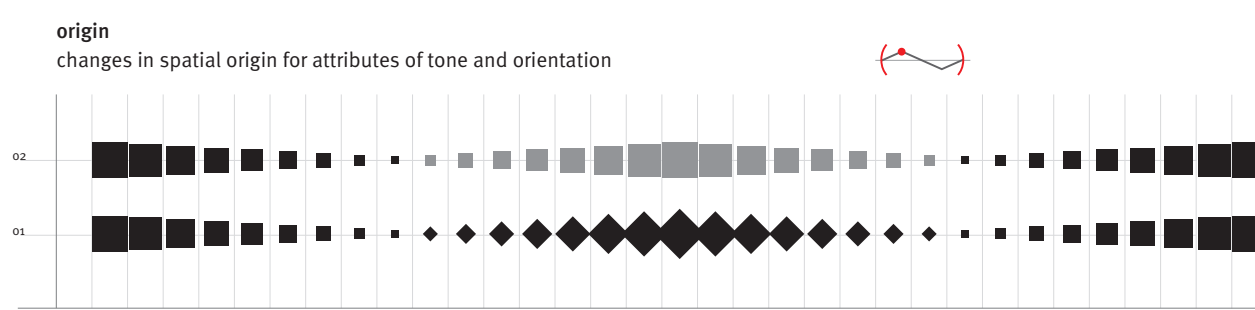
properties of visual attributes

Traditionally, a visual element is described by seven attributes: shape, scale, orientation, position, tone, color and texture. In the static visual world the attributes suffice for the creation of spatial structures and the indication of spatial and temporal relations. However, in a dynamic environment the attributes as such are not enough. The dimension of time must be incorporated in such a way that space and time can no longer be isolated.

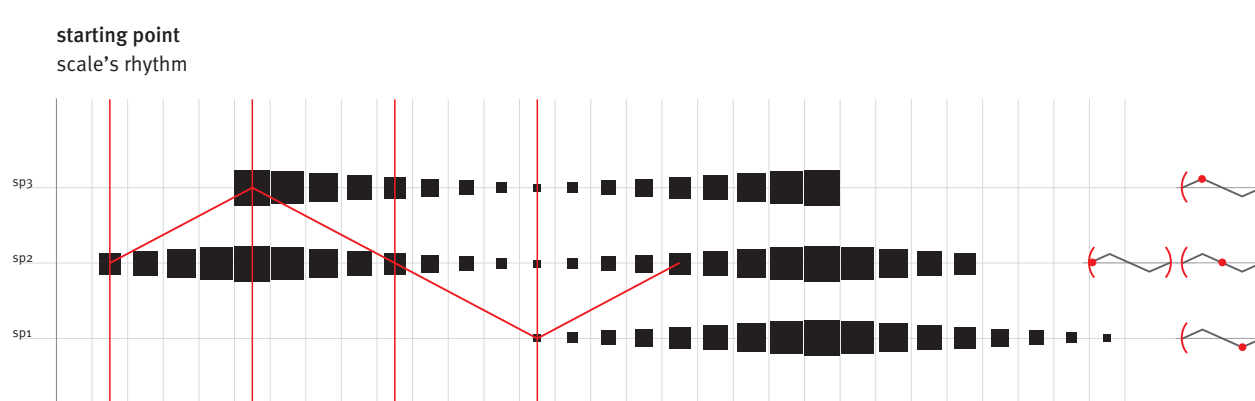
What is proposed is a set of properties for each of the seven basic attributes. The properties are grouped in three separate but interdependent categories: spatial (spatial qualities of attributes); temporal (temporal qualities of attributes); and kinetic (spatio-temporal dependent qualities of attributes).

properties of visual attributes

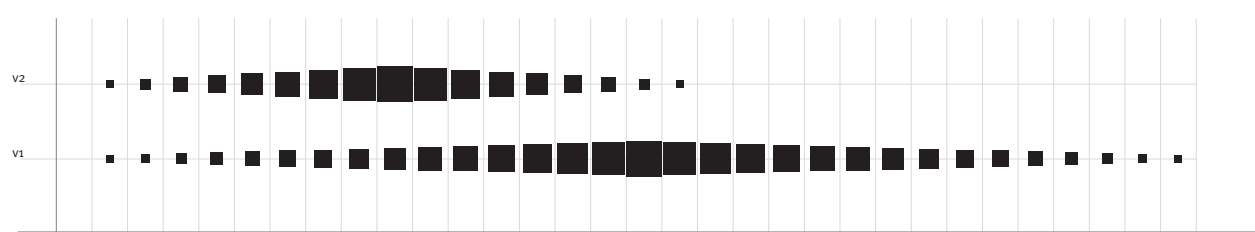
spatial category



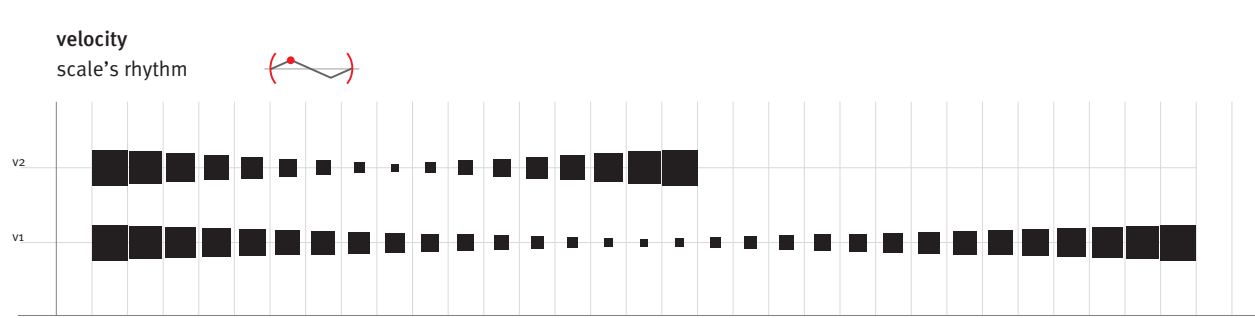
temporal category



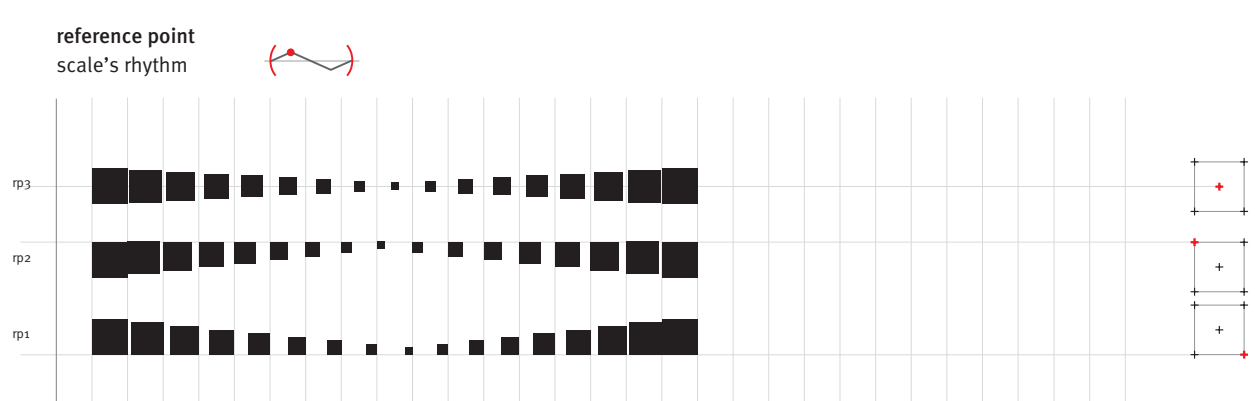
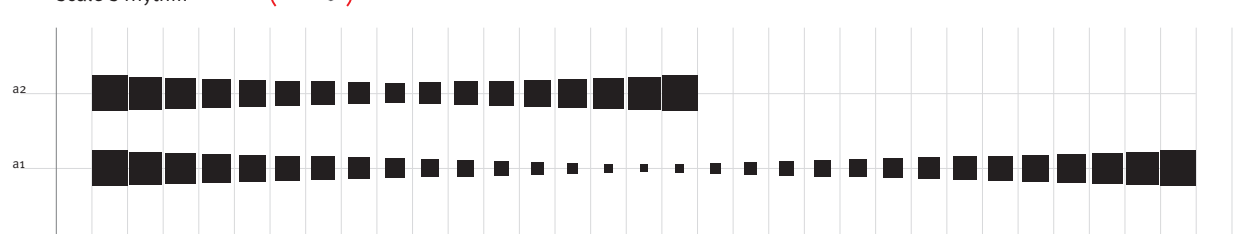
duration



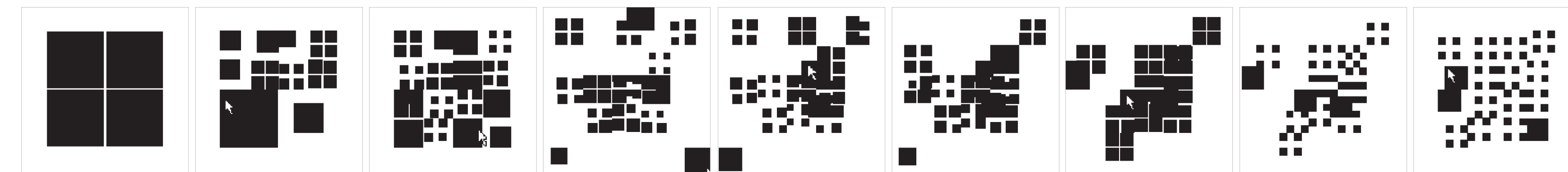
kinetic category



amplitude



screen shots of experiments



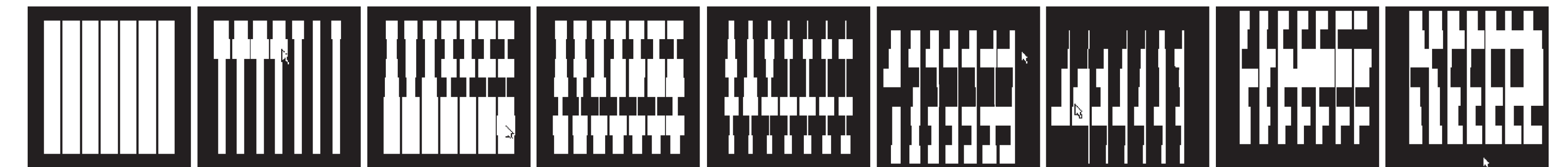
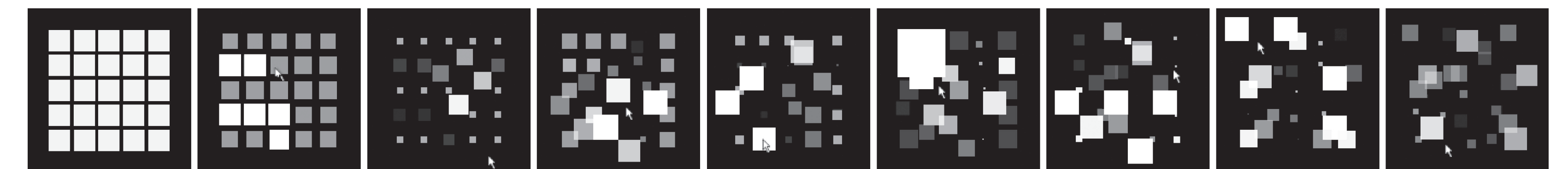
experiments

A series of experiments was created as exploratory environments of the system of dynamic visual formation in the context of rhythmic visual patterns.

The experiments are constrained by a rigorous use of the most elemental formal and algorithmic parameters. Spatial qualities are those of elemental 2D geometric forms, in the same way that the algorithms used in the exchange of information are the most basic ones. No colors other than black and white are used.

All experiments are modular and serial structures in two respects. One is the way in which the patterns are structured: a rhythmic unit is used as a variable spatio-temporal module that is repeated and organized in a rigid regular grid. And the other is the creation of serial rhythmic patterns in the process of interactions, when the oneness of units and regularity of the patterns are disrupted by qualitative and serial variants and trans-formations.

The same rigor was applied for the choice of input and output devices used in the experiments. Again, they are the most elemental ones: the mouse and the monitor screen.



initial results

Experimentation with the system already suggests a few essential points:

- In the computer environment a visual element is a variable spatio-temporal module always in the course of becoming, of forming and trans-forming
- The most elemental formal and algorithmic parameters produce spatio-temporal complexity
- Two interdependent factors play a major role in the creation of rhythmic patterns: the nature of a dynamic visual formation's rhythm, and the system of references
- The creative process of image-making in computational media is not an individual's isolated activity