

## **Some Thoughts on Visualizing Improvisations / Improvising Visualizations**

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My background includes years of working in new music, especially free improvisation with acoustic instruments and electronics. As a performer, system designer and listener, I have often noted the associations made by myself (and others) between abstract sonic gestures, and visual and physical phenomena. I am interested in building performance systems that capture some of these associations.

My new system PSHIVA is a work in progress. I try to set up and work with oppositions and tensions that I am attracted to in music. My goals are to build visual performance components that evoke the tactile, nuanced, timbrally rich gestures that I enjoy in improvised music. There should be clear timbral and gestural cross-referencing between sound and visuals. The system should enable me to set up tensions between abstract and referential elements, and between gestural and textural sections. I should be able to achieve strong contrasts in timbral and visual elements, and in how sonic and visual space is used.

The visual elements in PSHIVA can respond to user interface gestures, or be influenced by gestural and timbral information from an audio stream. I am currently working with particle-in-cell simulations, which evoke the movement of particles in fluids. I have added several components to extend these simulations into a real-time performance system: a control interface to enable the particle movement to be influenced with gestural controllers such as a graphics tablet or touch screen, components to import and manipulate images in real-time, and generative components for synthesizing sonic and visual gestures.

Visual elements evolve between referential objects and abstract particle clusters. I am interested in a consistent “look” for all the visible objects in the system; hence, each image element is segmented, and manipulated as clusters of pixels/particles. The end-result resembles somewhat asymmetric, constantly morphing versions of the Rorschach inkblots used in psychological evaluations; I am interested in opening up a wide range of visual associations, rather than rendering realistic animations.

The interplay between sound and visuals is fairly open and flexible. In general, I try to avoid overly obvious mappings of sound to visuals, and vice versa. Currently, I am using Max/MSP for sound, and Processing for animations. The particle-in-cell simulation is based on code by Glen Murphy and Mehmet Akten. A graphics tablet controls both subsystems. OSC is used for communications. I will be using the system in the concert program at SMC 2009.