Sonigraphite: Drawing Sounds as New Physical Expression

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1. Sonigraphite

Sonigraphite is a digital device which allows people to draw a line and to generate sound. It is composed of sensors, a web-camera, a microphone, and paint. People can record any favorite sound to Sonigraphite and draw and tap a picture with it anywhere they like in the real world; for example, a big size of paper, a panel, or a wall. Then, Sonigraphite can generate music when people use it to draw a picture and can generate rhythm reflecting people's action of tapping a picture with it. Moreover, it can make groovy music when people's individual movements of drawing and tapping interact well with the real world. As we found that human's drawing movement is interesting, we adopted people's dynamic movement in the real world rather than a projector.

Our goal is to make a creative society, leveraging the unique function of Sonigraphite. It is a society in which people can enjoy themselves using human bodies to express a delicate and spicy movement. This process can be used to deepen a relationship with friends. Moreover, the more people feel enjoyment to express themselves by using their bodies, the more they practice Sonigraphite. This society strengthens human's independent and creative activities.

When Sonigraphite is used at a club event, customers themselves make the mood of the event by drawing pictures and making music. Thus conventional club events would be changed dramatically. Not only club events but also desolate parks could be changed to pleasant places by Sonigraphite. It can make space more pleasant and creative.

Figure: Draw a picture and make sound with using Sonigraphite

2. Technology

We made Sonigraphite as a pen-like shape device. At its component that handles a user's painting action, this device senses a user's movement and generates melody and code in accordance to the movement. At its component that handles a user's tapping action, it recognizes the color of the picture tapped by, and allocates sound to each color. We made Sonigraphite to generate impromptu groovy music such as percussion by drawing and tapping a picture.

3. Related Works

Sonigraphite suggests a new way of harmonizing pictures and music. There have been some works that have relatively a similar suggestion. Messa di Voce [1, 2] and Sound Rose [3] are the works that combine music and vision. Messa di Voce visualizes human voice on a screen. Sound Rose presents sounds and images on a table with a touch panel attached to it.

Sonigraphite does not have any limitation of space or physical movement because it works on in the real world directly not relies on a screen or a touch panel. Thus it can realize a much more creative society.

4. Conclusions

Sonigraphite may offer new creative activities which have not appeared in the past by fusing pictures, music, and human body. We hope that Sonigraphite paves the road to a society in which people can enjoy creative activities subjectively.

5. Future Works

We will aim to make the device wireless by putting a wireless USB-hub in the device and develop a system which takes sounds from a microphone in real time. Besides, we would like to conduct user studies asking customers in a club, graffiti artists, and dancers to use Sonigraphite, and enhance its function based on their feedback.

Acknowledgments

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References

[1] Messa di Voce
http://www.tmema.org/messa/messa.html
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[2] Golan, L., and Zachary, L., ' In Situ Visualization in real-time Interactive Installation and Performance' *in Proceedings of Non-Photorealistic Animation and Rendering (NPAR 2004)*, Annecy, France, 2004

[3] Alian, C., Cedric, B., Arnaud, G., Seiichiro, M., and Chuichi, A., 'Sound Rose: Creating Music & Images with a Touch Table' *in Proceedings of New Interfaces for Musical Expression (NIME '06)*, Paris, France, 2006

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