Summary

The Octopus is a non-digital old/new interface for musical expression that celebrates and re-examines two historically significant technologies, film and analog modular synthesis, which are experiencing a revival of popularity. The installation consists of an 8mm film projector and a sculptural arrangement of light sensors positioned on the projection screen. The light sensors are connected to an analog modular synthesizer and supply control voltages to modify the settings of the modular synthesizer patch. Original handmade 8mm films are projected onto the screen and create a live synaesthetic audio-visual composition. Light levels of the projected moving image affect the resistance of the sensors, these are converted to control voltages using a voltage divider circuit and connected to the inputs of an analog modular synthesizer. Original handmade 8mm films have been created specifically as visual scores for playing the Octopus. These include stop motion films of traditional kimono textiles, visual music composed of dynamic moire patterns from the everyday world, and hand-painted abstract expressionist direct films.

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Video

A video of the Octopus system in operation is available at the password-protected url:

http://vimeo.com/79488015
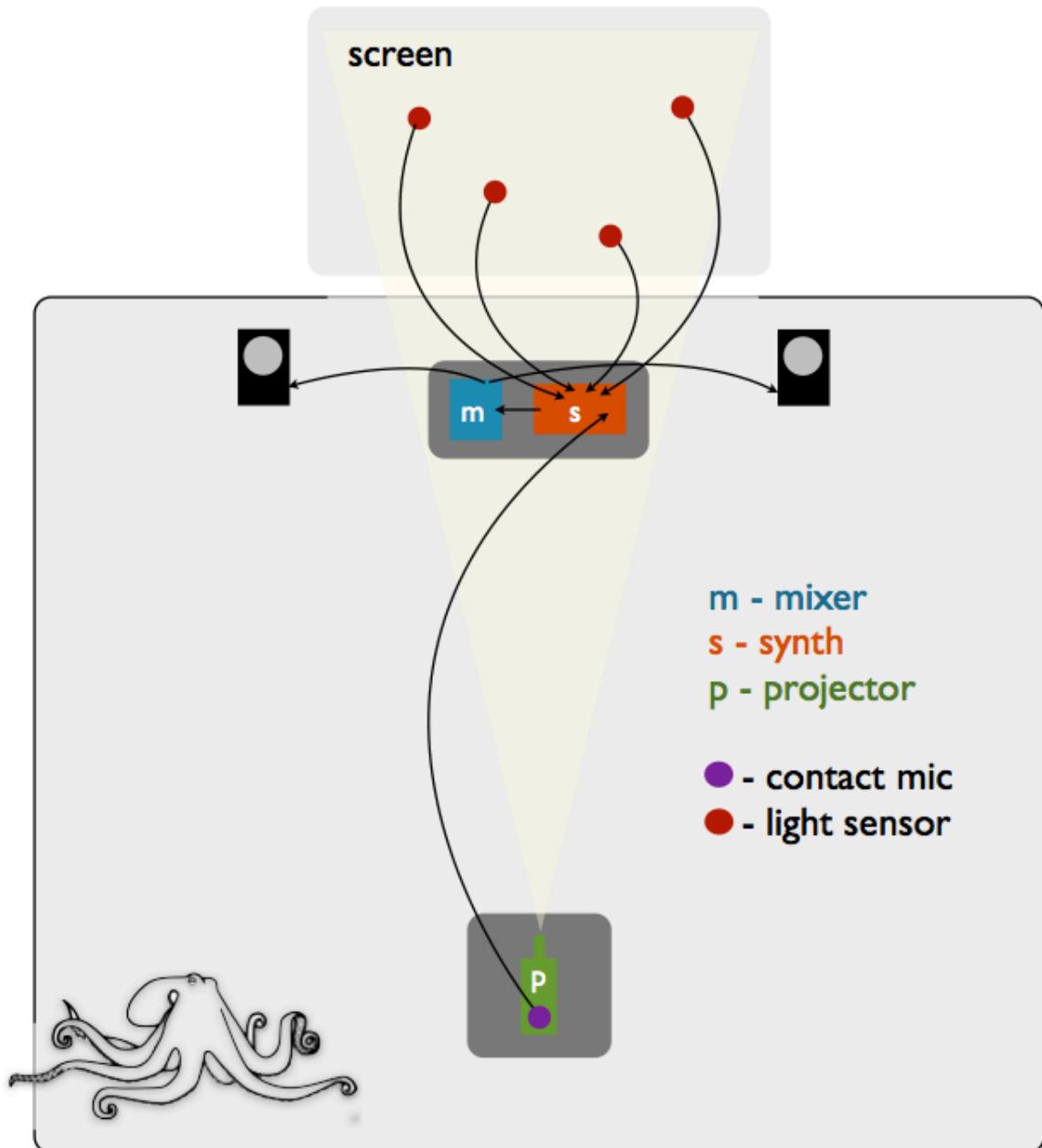
Statement about the Installation

This artwork is motivated by the revival of and personal interest in two technologies which some may, at first glance, consider to be obsolete: 8mm film and analogue modular synthesis. While most amateur and much commercial moving image production has shifted to an entirely digital workflow, some artists continue to be interested in film. The reasons for the appeal of film are not straightforward and not always clearly understood by the artists themselves, but it is certain that film entails a distinct working process that affords tactile intimacy differing from a digital workflow. Direct film techniques include painting and scratching patterns onto an exposed film by hand and this allows lyrical, painterly expression. Similarly, analogue modular synthesizers have experienced an enthusiastic and growing revival over the last decade. Likewise, patching the synth by wire and tweaking the sound with knobs offers a tactile process that strongly differs from the experience of programming a computer, even using visual languages. More controversially, some have claimed that film offers visual qualities that would be difficult to simulate digitally and that the physicality of analogue synthesis offers a rich indeterminacy not easily attainable with digital synthesis.

We wish to examine the aesthetic issues surrounding the continued use of non-digital audio and visual media within the context of the NIME 2013 conference precisely because the community has concerned itself mainly with digital signal processing. Indeed, it could be argued that digital processes are central to the questions which interest the NIME community. The Octopus is intended to challenge this notion by presenting a non-digital audio-visual synthesis path which shares the same sensor-to-synthesis mapping issues as digital new musical interfaces. At the same time, working with film and analogue hardware synthesis imposes physical constraints on the possible range of sensor-to-sound mappings. This creates an interesting domain to re-examine synaesthetic audio-visual expression.

While the artists are deeply involved with digital practices, all of us recognize the beauty of the pre-digital era: the sounds of projector and richly varying sounds of an analogue synth, the tangle of wires on a modular patching bay, the deeply complex textures of film, and would like to share this appreciation with conference attendees. We thus propose to engage the NIME community with a non-digital installation to stimulate reflection on the continuing and future role of non-digital technologies.

Installation Layout

Notes
- projector to screen distance should be about 3-4 meters
- room must be be relatively dark
- 8mm film projections will be shown several times according to a set schedule
- at other times, digital transfers of the 8mm films will be shown in a looping sequence using a digital projector. This arrangement is to avoid excessive repeated use of the handmade 8mm films, which are irreplaceable original artworks.

Equipment List

Supplied by the artists
- 8mm film projector - we will arrange to rent or borrow one locally in London.
- Bugbrand modular analogue synthesizer
- Japanese paper (washi) to serve as a projection screen
- Photo-resistors, with necessary cables, circuitry, and battery to generate control voltage outputs
- Audio mixer
- Piezo-microphone and cable

Requested from the hosting institution
- Digital projector
- Powered stereo monitors
- Power bars/extension cables suitable for powering the projector, monitors, mixer, and synth (2 power bars, 5 outlets total)
- Table for the projector and low table for the synth and mixer
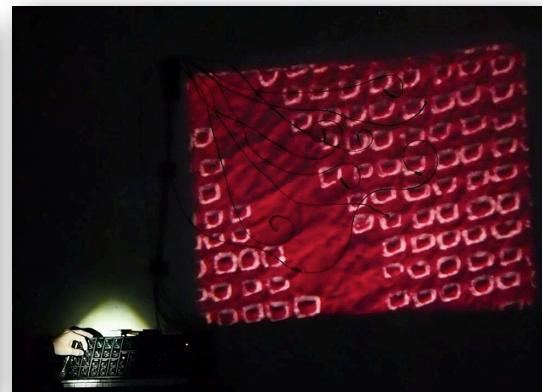
Power Requirements
The setup requires 5 outlets, which can be connected to two electrical power bars and extension cords. The total power requirement is modest.

Setup/Breakdown
Setup of the installation and tweaking the synthesizer patch is estimated to take approximately three hours. Breakdown/packing up will not require more than one hour.

Left The Octopus sinks its tentacles into a Korg MS-20 mini analogue synthesizer
Right Live performance using the Octopus by Michael Lyons and Haruka Mitani at the event "Experiments in Art and Technology" venue: UrbanGuild, Kyoto 29/11/2013
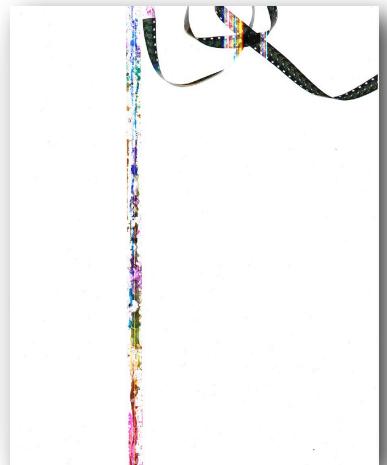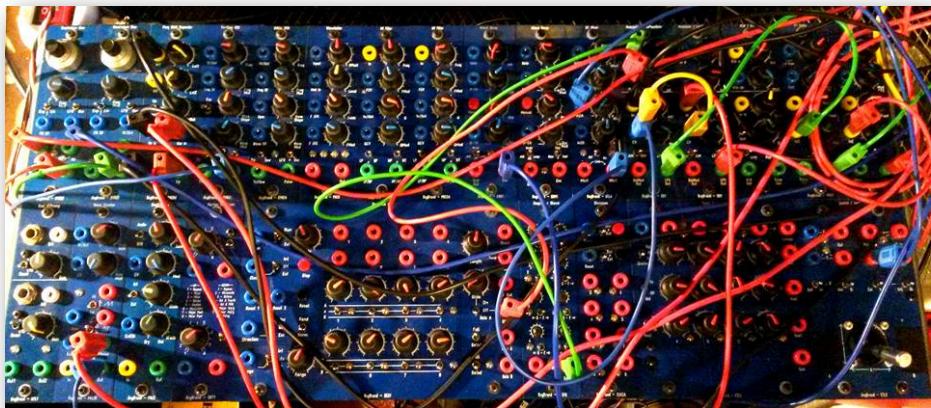
Contributing Artists

Michael Lyons is a professor of Image Arts and Science at Ritsumeikan University in Kyoto. His interest in experimental music dates to childhood backyard percussive improvisations, which were not consistently appreciated by the neighbours. Michael studied classical guitar at the Conservatoire de Musique du Québec à Montréal. In the late 70s he experimented with home-made analogue noise-making circuits and 1-bit Bach on a Motorola 6800 kit with only 2k of RAM. He has subsequently conducted research in experimental and theoretical biophysics, computational neuroscience, pattern recognition, cognitive science, and interactive media arts. Michael co-founded the New Interfaces for Musical Expression conference.

Haruka Mitani is an independent filmmaker based in Kyoto. She studied Image Arts and Science at Ritsumeikan University. Her handmade 8mm film "Metamorphose" was one of 22 works selected from over 400 submissions for screening at the 2013 Image Form Festival and was nominated for an award. "Metamorphose" was subsequently shown at cinemas across Japan. Her films were also selected for screening at the 8th Montreal Underground Film Festival. Her video art was recently included in the "Lost Spaces" exhibition at the 3F Project Room in Kyoto and she is a regular contributor to live experimental art performances in Kyoto.

Palle Dahlstedt is a composer, improviser and researcher from Stockholm, since 1994 living in Göteborg, Sweden. With composition degrees from the Academies of Malmö and Göteborg, he is currently the main lecturer in electronic music composition at the Academy of Music and Drama, University of Gothenburg, and artistic director of the the Lindblad Studios. Also, he is Docent/Associate professor in computer-aided creativity, performing extensive research in novel performance and improvisation techniques for electronic music, and in computer models of artistic creative processes. Since 1990, he has been interested in Japanese traditional arts and music, and Noh in particular, and he has collaborated extensively with Japanese actors, dancers and musicians. He is also active as improvising pianist.

Axel Mulder is president of Infusion Systems Ltd., which makes the I-CubeX product line since 1995, the first commercially available sensor development kit for interactive media. Adjunct professor, McGill University. PhD. Kinesiology, SFU. Drs. Physics, RUG. Axel's main research and artistic interests are in human expressive movement, musical sound and their connection. He is an amateur musician (wind instruments) and loves dancing (latin style). His work is focused on new ways of performing and interacting with music and other media by pioneering 3D virtual musical instruments, datagloves and datasuits as well as by developing I-CubeX. He regularly has appointments as a consultant for universities around the world and was invited researcher at ATR in Japan. Axel has been an active participant of NIME conferences since their inception.

Left Bugbrand analogue modular synthesizer with patch by Palle Dahlstedt.
Right Hand-painted 8mm film from the work "Banquet of Love" by Haruka Mitani.