

Unsounding Objects: Composition for the SpectraSurface

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1. PROGRAM NOTES

Unsounding Objects is a series of compositions for the *SpectraSurface* that examine various characteristics of the instrument. Two previous compositions, *Unsounding Objects no. 1* & *no. 2*, were composed by Preston Beebe and respectively featured various bowls and various cymbals as performance interfaces. For NIME'14 we propose a new composition entitled *Unsounding Objects no. 3* which will be composed by Preston Beebe, Zachary Hale, and Ian Hattwick and will feature three different approaches to performance with the Spectrasurface.

The *SpectraSurface* is a set of playing surfaces contained within a suitcase which are equipped with contact microphones. Found objects such as bowls, pipes, or toys are placed on top of the surfaces. The sounds from the contact mics are sent to a computer where they are analyzed for their important audio features; these features are then used to drive sound synthesis. The tradition of found objects in the percussion idiom (Henry Cowell, John Cage, Lou Harrison) offers a familiar interface with unique timbral and temporal characteristics which produce interesting results in the analysis-synthesis platform of *Unsounding Objects*.

2. PREVIOUS PERFORMANCES AND VIDEO DOCUMENTATION

The Spectrasurface was developed in 2012-13 and *Unsounding Objects no.1* for the Spectrasurface was premiered February 7, 2013 at the Live @CIRMMT New Instruments concert in Montreal, Canada. Subsequent performances include: the Montreal Composers Institute (March 12, 2013), McGill University (May 7, 2013), Center for Interdisciplinary Research in Music Media and Technology (May 27, 2013) and the Mathematics and Computation in Music Conference 2013 (June 7, 2013). *Unsounding Objects no.2* was

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NIME'14, June 30 – July 3, 2014, Goldsmiths, University of London, London, UK.

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Figure 1: The SpectraSurface showing the four surfaces as well as the performance score.

premiered at the Percussive Arts Society International Convention (PASIC) on November 13, 2013.

Video of *Unsound Objects no. 1* can be found at: <http://idmil.org/news/unsounding-objects-premier> <http://www.spectrasurface.com/media/videos/>

3. PERFORMER AND TECHNOLOGY

The *Unsounding Objects* series of compositions are written for solo percussionist performing on the Spectrasurface. The performance of *Unsounding Objects no.3* at Nime'14 will be given by Zachary Hale. Please note that these compositions are written for the concert stage, are not demos, and are best suited to performance in a concert hall.

The Spectrasurface is a digital percussion instrument which uses audio feature extraction for the control of sound synthesis. With this instrument, found objects are placed on surfaces equipped with contact mics. The sound from the contact mics are sent to a computer, and audio features are extracted from the sound and mapped to synthesis parameters. In contrast to direct gesture acquisition using sensors, audio feature extraction allows for an instrument which is tolerant of extended performance techniques and highly adaptable to modifications of the interface.

The SpectraSurface consists of four contact mic equipped

surfaces mounted within a suitcase. The output of each surface has audio features extracted independently. Two different algorithms for audio feature extraction are used, both producing values for spectral tilt. The sound from the contact microphones is not amplified; the composition only consists of sounds produced by the synthesis controlled by the audio features.

4. BIOGRAPHIES

The Unsound Objects compositions are the result of an interdisciplinary research project consisting of Ian Hattwick (Instrument Designer), Preston Beebe (Composer), and Zachary Hale (Performer).

Ian Hattwick (Instrument Design) is a composer, performer, and digital musical instrument designer. His current research focuses on collaborative approaches to music performance using gestural interfaces. In 2013 he co-created the *Prosthetic Instruments*, family of gestural controllers intended to be worn by dancers, for which he composed and presented two compositions at the Cacoyannis Institute in Athens, Greece. He holds an MFA from the University of California, Irvine and is currently a PhD researcher in the Input Devices and Music Interaction Lab at McGill University.

Preston Beebe is a Montreal-based composer and percussionist who works extensively with electronics and technology as a compositional approach. He graduated from the University of South Florida with a Bachelor of Music degree in Music Composition, Percussion Performance, and Electronic Music. Preston is currently attending McGill University, Schulich School of Music for Graduate studies in Music Composition. Preston has studied composition with Philippe Leroux, Michael Timpson, Paul Reller, and Chihchun Chi-sun Lee; percussion with Robert McCormick and Steve Davis. More information can be found at www.prestonbeebe.com.

Zachary Hale is a Montreal-based composer and percussionist who creates and performs music that deals with live-electronics and new interfaces. His interest lies in the possibilities when the performer and technician are one in the same, and also bridging the gap between uninformed classical musicians and technology. Recent highlight performances with live-electronics include *Reflecting Space III* by Kenji Sakai (North American premiere), *Caprices 5-6* by Luis NaŮn (North American premiere), and *Konakte* by Karlheinz Stockhausen. More information can be found at www.zachhalemusic.com.

5. DETAILS

The performance setup entails:

- SpectraSurface - supplied by the performer
- 4 in/8 out audio interface - supplied by the performer
- Laptop computer - supplied by the performer
- USB footswitch - supplied by the performer

6. REQUIREMENTS

- Keyboard stand or table approximately 24" high.
- Multi-channel audio diffusion system - preferably 8 channels with subwoofer. Audio out from the performer's audio interface will be up to 8 channels analog or ADAT optical.
- Stage monitor for the performer (may be mono or stereo).

- Additional small table, approximately 12"x24" and between 18-24" tall.
- Stool or table approximately 28" tall on which to place a laptop or flatscreen computer monitor for the performance score.
- If available, an 18-22" flat screen computer monitor.

7. STAGE LAYOUT

Our preferred stage layout is for the performer and tables to be stage center and angled at 35 degrees to the audience - see Figure 2. Computer and audio interface will ideally be located by the performer; however, it is possible for them to be located offstage. This will require 4 channels of audio, a video cable, and a usb cable to run from the performer to the computer location.

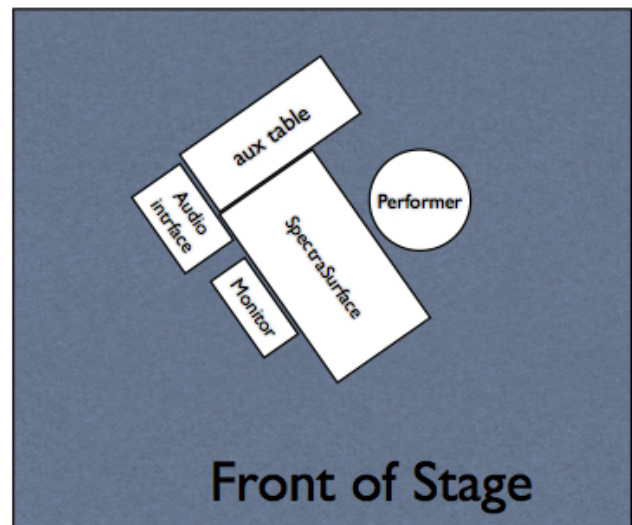


Figure 2: Stage Layout



Figure 3: The SpectraSurface in performance at the Live@CIRMMT New Instruments Concert, February 7, 2013. photo:Harold Kilianski

8. ACKNOWLEDGMENTS

This research was supported by the Center for Interdisciplinary Research in Music Media for 2012-14 and The CIRMMT Technology Director's Interdisciplinary Excellence Prize.