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classical concerts or the implosion of the music industry. Within the creative burst of electronica, two developments were obvious at Sónar. First, as the organizers have pointed out, there is a return to the physical: electronic music has learned performance. Increasing real-time capacity, women performance artists, and vicinity to the dance floor have firmly established the performing body in electronica. Second, as audiences have grown and software has become more robust, DJs have perfected their improvisatory talents in order to interact with audiences. A tradition that survived in jazz and rap is returning to electronic music: the improvising artist. These trends give DJ-ing electronica a vital, electric quality lost from the museums that concert halls have become. High technological standards, burgeoning creativity, and a lively, growing public—this year at Sónar, electronica cast an appreciative glance at its electronic roots and went raving off in myriad future forms.

NIME 2005: New Interfaces for Musical Expression

University of British Columbia, Vancouver, British Columbia, Canada, 26–28 May 2005.

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This year's New Interfaces for Musical Expression conference, NIME 2005, was held at the University of British Columbia in Vancouver, Canada, 26–28 May. Although practically everyone disagreed about the pronunciation of the name of the conference, everyone agreed that Sid-

ney Fels and Tina Blaine did a wonderful job of coordinating the event. The spaces for papers and performances were physically and acoustically beautiful, and the weather was perfectly gorgeous, which made it a pleasure to walk from the dorm-like accommodations through the campus to the various venues.

Thursday May 26, Reviewed by Jamie Allen

There was a refreshing preamble to the official commencement of NIME 2005. Wednesday night before the official welcome session the next morning, early arrivals were treated to a showing of *The Future is Not What It Used to be*, a film by Mika Taanila presented by Michael Lyons. The film was a real treat, outlining the extensive accomplishments and contributions of Finland's obscure electronic arts pioneer Erkki Kurenniemi. Mr. Taanila's film also hinted at an emphasis on historical and contextual underpinnings that I noticed throughout the proceedings this year.

Three separate keynote speeches were given during each morning of the conference, an aspect of the event that was particularly well planned. Each of these was a retrospective look at the speaker's own work, and their perspectives on the road ahead. The nearly sublime triumvirate of Don Buchla, Golan Levin, and Bill Buxton truly represents a triumph of curatorial talent and orchestration on the part of the conference planners, Sidney Fels and Tina Blaine.

On this first morning, Mr. Buchla presented and demonstrated a panoply of the instruments he has constructed since 1965. The number of demonstrable instruments he was able to bring was limited somewhat by Canada customs agents, but his corner of the demo room was still

well stocked. The keynote was fascinating, especially for those of us with leanings towards fetishism for synthesizer and analog memorabilia. He capped his remarks with comments on modern advancements and work in hardware design. This included mention of a very recently completed design by Bob Huott known as the "Been." Its mention was a surprise even to the designer, as the instrument is so new, confirming that Mr. Buchla's attentiveness to his chosen field has not waned in over 45 years of practice.

The morning session of paper presentations began with a look at more conceptual treatments as contrasted to specific applications, which were covered in the afternoon. John Bowers and Phil Archer presented "Not Hyper, Not Meta, Not Cyber but Infra-Instruments." The presentation covered much of Bowers and Archer's work and called for a restriction of interactive potential in new instruments (NIMEs). Essentially, it was a well-formulated argument for "keeping it simple." The lesson was a profound and important one for the audience at hand, that sometimes the most expressive musical outcomes are derived from seemingly less-expressive interfaces (Infra-Instruments). "Reductionist" Japanese work and "circuit bending" performance successes prove that Infra-Instruments are as much a part of the novel ways people are expressing their musical voice as the most belabored virtual reality application or re-engineered violin.

Three researchers from Helsinki's University of Technology came next, presenting a set of experiments in sound control done within a Virtual Reality environment. Identifying with the largely synesthetic leanings of North American computer music composers and researchers, they gave a concise description of the CAVE en-

vironment and input interfaces, standard in virtual reality (VR) circles but novel in their application to the musical domain. The work did not seem geared to performance contexts, but to the context of a singular user, creating and interacting with a virtual instrument or sound world. As with all presentations of immersive systems, I would have liked to experience the VR system in its entirety myself, as video and photographic documents rarely do them justice.

The three paper presentations that followed were discussions of instrument systems that have progressed beyond experiments. The first of these was from Gil Weinberg and Scott Discoll, now at the Georgia Institute of Technology, with "iltur." Centered on the Beatbug musical controllers developed at the Massachusetts Institute of Technology Media Lab, iltur is a system for interaction between novice and expert musicians. Two jazz compositions, *iltur 1* and *iltur 2*, have been developed, and the first of these was performed at the 2004 International Computer Music Conference. The implementation and motivation of this work is consistent with Mr. Weinberg's fine reputation. As an artist and scholar, he seems fittingly concerned with issues of accessibility and the transmission of ideas.

A review of more mature applications was presented by Sergi Jordà, outlining paradigms and applications of multi-user interfaces for music. He took a new tack on the issues by rigorously analyzing the multi-user taxonomy of a piano, guarded most commonly as a single-user instrument.

The spirited Tina Blaine finished off the morning sessions by outlining a remarkable collection of multi- and single-user commercial musical interfaces from the Interactive Enter-

tainment world. She spoke largely within the context of the educational potential of interfaces for music from the video game and toy industries. Her examples ranged from pop-culture phenomena such Dance Dance Revolution and Donkey Conga to the Eye-Toy video-tracking game Groove, which provides a gestural rhythm controller to the masses. Ms. Blaine was also kind enough to bring a Donkey Conga system to the demo rooms in Vancouver that day, so we might all get a chance to sample the gaming industry's take on a new musical interface. I am always impressed by the industry's attitude to musical interface implementations, being, for the most part, devoid of excessive pretence and valuing human experience beyond issues of compositional authority or technical prowess.

Those of us attending the afternoon paper sessions were treated to descriptions of specific interfaces systems and rigorous applications. These were clear and succinct presentations of successful present practices of reactive and interactive musical systems. Dan Overholt presented the Overtone Violin, which was performed at a concert the next evening. Juan Pablo Caceres and his team from the Center for Computer Research in Music and Acoustics (CCRMA) were a crowd favorite: an augmented tuba system was presented, wherein real-time manipulation of the natural instrument sound was amplified and retransmitted through loudspeakers mounted on the bell of the instrument, and a subwoofer beneath the player's chair.

Eric Singer's presentation of a LEMUR (League of Electronic Musical Urban Robots) "Large Scale Networked Robotic Musical Instrument Installation" project installed at the University of California at Irvine was saddled by two new sensor acquisi-

tion and control systems. The first of these was the Smart Controller Workbench, which allows for interactive programming without the need for a computer. The second was a novel system by the team behind the Tap Tool Max/MSP add-on set, entitled the Teabox. The Teabox uses an underused asset of most audio acquisiton hardware systems, the S/PDIF protocol, to get sensor data into the computer, all mounted in truly roadworthy case.

The concert roster on Thursday night included a videoconference performance organized by Scot Gresham-Lancaster. *AB_time*, the title of the piece, featured Tomi Hahn dancing along to decidedly meandering textures from three locales: our concert hall at UBC; Pauline Oliveros on her accordion in Troy, New York; and Jean-Marc Montera playing the cittern in Marseilles, France.

The clear sonic triumph of the evening was next, with Italian-born Vancouver local Giorgio Magnanensi controlling a set of circuit-bent speech synthesizers (most from the Texas Instruments "Speak & Spell" line-up). Seated at the center of the room, Mr. Magnanensi proved once again that the physical and visual elements of a performance are not always paramount. He spoke to the audience through his contorted machines in ways the circuitry never intended and we did not expect.

Randall Jones took to a Tactex multi-touch control pad after Mr. Magnanensi, effortlessly painting a complex language of visuals on a screen above his head. The visual material and linked audio material was flawless in its synesthetic synchronicity, although at times the sound material seemed a bit thin as a counterpart to the imagery. *Posthorn*, by Ben Neill and Bill Jones, was a fine reworking of Gustav Mahler's *Sym-*

phony No. 3 into atmospheric lapping through Mr. Neill's self-designed "mutantrumpet." Laetitia Sonami lent her unusual blend of theatrical showmanship and finessed interface design, performing her "Lady's Glove" gestural controller in a piece entitled *The Appearance of Silence (The Invention of Perspective)*.

The first evening's concerts were rounded out by a much-talked-about collaboration between renowned Cuban jazz pianist Hilario Duan, percussionist Andrew Schloss, and violinist Irene Mitri. Mr. Schloss uses a Radio Drum system to effect and re-digest captured portions of the pianist's playing, although on this occasion the sonic material being actuated by the percussionist seemed a little less enticing. Midi-synth bongo and conga samples didn't make for fitting accompaniment to Mr. Duan's playing and Ms. Mitri's ruminations on strings seemed slightly out of place in it all.

A standout aspect of this year's NIME conference was the inclusion of improvisation sessions, organized by Ajay Kapur of the University of Victoria. These were held at various times throughout the three days, and despite some confusion with regards to how "open" these sessions in fact were (many people reportedly hoped to show up, instrument in hand, when in fact one had to sign up for an allotted session prior to the conference), they were certainly a step in the right direction. I was lucky enough to participate in one such session, and whatever the overall musical outcome, there is certainly value in organizing more activities where music is the explicit conversant language at a conference centering on music. I would have loved to see a full-on jam, for example, involving all the lovely controllers and sound makers that Don Buchla carted up from California. Music is, after all, for many of us still

a less cumbersome means of communication than the unwieldy awkwardness of the English language.

Friday May 27, Reviewed by Margaret Schedel

I thought the most successful presentations were those that combined a paper or poster with a performance. I know that it isn't feasible to have a one-to-one correspondence between papers and performances, but I do believe the composers/creators of pieces selected for performance should have an automatic option to have a poster. There is only so much information one can convey in program notes, and it would be nice to have a centralized discussion about the technology behind a work. I was much more receptive to the aesthetics of a performance when I wasn't trying to figure out the technology.

Roger B. Dannenberg, Ben Brown, Garth Zeglin, and Ron Lupish authored the paper "McBlare: A Robotic Bagpipe Player," which describes the technology behind the piece performed later that night. The robot consists of a custom-built air compressor and electro-mechanical relays connected to rubber pads which open and close holes on the chanter in response to MIDI messages. Mr. Dannenberg's musical work *McBlare* was a joyous racket of trills and runs faster than any human could have played. He wheeled their creation out on stage, turned on the compressor, and stood back to watch it work with a slightly bemused expression on his face. Thankfully, he had earplugs in. The piece itself was a mélange of Scottish folk motifs which translated very well into MIDI, perhaps because (forgive me, Roger) the bagpipe is not the most expressive of musical instruments. The work was, however, very musically satisfying, and the audience gave it a thunderous cheer.

Dan Overhold also had a paper and piece: his *Duet for Violin + Violinist* and corresponding paper dovetailed nicely. As mentioned above, Mr. Overhold presented his paper on Thursday, and it was rewarding to see the violin, which was described in such technical terms, turn into an expressive instrument onstage the next evening. The performance was nearly half over before he actually bowed a note on the string; most of the performance consisted of gesture control, and I felt it was a bit unbalanced. The overtone violin has six strings and I wished for more amplified acoustic sound—the lower strings especially had a dark and subtle timbre. This piece was another that married folk elements, in this case fiddling, with technology.

Suguru Goto's *VirtualAERI II* used another violin controller, the Super-Polm, a virtual violin. Unlike the Overtone Violin, the SuperPolm does not have actual strings; it models the gesture of violin performance, using touch sensors instead of strings on the fingerboard and resistance sensors on the bow. In addition to these sensors there is an eight-button keyboard on the body of the instrument. Mr. Goto is a natural performer, and his gestures were musically sensitive. It seemed that the sensors did not always work—sometimes a large gesture did not have a corresponding reaction in the sound or interactive video. Nonetheless, there were some very beautiful moments with the performer silhouetted against a wash of abstract video while a thick sound evaporated into the hall.

Ulrich Maiss and Joseph "Butch" Rovan in *Return of the Habaneros* and *Hopper Confessions*, respectively, also used gesture to great effect in their works. With Mr. Maiss on cello and Mr. Rovan on bass clarinet the audience had a great time listening to two European free-jazz–

influenced works. They had a lot of fun onstage together in *Return of the Habaneros* at points playing air cello and air clarinet; Mr. Maiss also used that energy to good effect in his solo performance of Mr. Rovan's work. I have seen *Hopper Confessions* a number of times now, and I thought this was one of the best performances.

It was refreshing to see so many interactive performances that did not involve people hunched over laptops. Toichi Nagashima's *Wiggle Screamer II* was a fun example of the Japanese approach to this aesthetic challenge. Wearing sensors on his arms and using a light harp interface, Mr. Nagashima entertained the audience with a pop-inspired pentatonic confection. At times it was a little like looking at a virtuosic Dance Dance Revolution performance as boxes on the screen moved in time to his arm slaps while MIDI bells played.

Mocap Performance Instrument, by R. Luke DuBois, Luibo Borrisov, and Beliz Demicioglu, used both motion-capture information from a studio and live video-tracking in a work for dancer with interactive music and video. The video consisted mainly of abstracted line drawings from the motion-capture sessions, some of which were more pleasing than others. The piece had no real hard edges—the dancer trailed scarves of sound behind her as she moved and it was very soothing to hear the piece come to rest after the dancer stopped moving. I wasn't sure if the sounds were recorded noises of dancer friction, but it seemed that way to me and it was a compelling way to bring the sonic world closer to the dance world.

I would have liked to see a performance using David Topper and Peter V. Swendsen's "Wireless Dance Control: Pair and WISEAR," a general purpose interface to a wide variety of sensors and gestural controllers. De-

veloping a flexible and powerful system for tracking dancers has been a challenge, and I am looking forward to using their product that combines a small LINUX-based wearable single-board computer with a wireless transmitter. Users solder in their own sensors, and the computer can be powered by 7-V batteries.

Other research that may be applicable for motion tracking has been done by Alain Crevoisier and Pietro Polotti. "Tangible Acoustic Interfaces and their Applications for the Design of New Musical Instruments" describes a technique whereby using only audio signals a computer can detect contact points of users interacting with the surface of solid materials. The resolution was astonishing from using just two piezo contacts. Sadly, there was not enough time to set up a demo of this "acoustic holography," but I am just as excited as the authors to be able to create controllers out of any surface.

Many papers this year seemed to specifically reference NIME. I'm not sure if the authors submitted only to NIME, or if they tailored their papers accordingly, but I was a little disturbed by the amount of conference referencing going on in the papers. Sageev Oore's "Learning Advanced Skills on New Instruments (Practising Scales and Arpeggios on your NIME)" was one such paper, yet I found its contents compelling. Much is made of new instrument design, but often not enough time is taken to practice the new instruments. I am eagerly awaiting the next Clara Rockmore, whichever new musical instrument she might play.

Saturday May 28, Reviewed by John P. Young

The final day of the conference kicked off with a keynote presentation from Bill Buxton, a man with

strong opinions based on decades of experience as a researcher in computer music and human–machine interaction. He made his position clear from the start, stating that tape playback sucks as a performance idiom, and that sitting behind a laptop computer screen mousing around is more or less the same thing from an audience perspective. This particular religious war has been well flogged already, but it still seems to be a good way to get everyone's attention early in the morning. And Mr. Buxton backs up his gauntlet-throwing unusually well. He noted that the transition from analog to digital sound gained stability and predictability, but lost a wealth of interesting controller interfaces and thus an important immediacy of engagement with manipulating sound while performing. He described various environments he has worked on, emphasizing that the interfaces were purpose-directed, optimized for the task at hand, be it composition, orchestration, or performance, expanding the notion of context-sensitivity to include the entire interface rather than just a few tools or menus as is most often the case today.

One graphic user interface (GUI), in an application called "Scriva," had some useful features that aren't readily available anymore, such as an amplitude-context piano roll display and multiple flavors of notation that could be toggled for differently weighted views of musical events: score, Music V code, timbre clusters, etc. Another performance GUI displayed multi-dimensional parametric control data on a single screen, oriented toward real-time adjustments of tempo, amplitude, filtering, etc., using a tablet "mouse" as well as reflecting parameter mapping to other tactile continuous controllers. These clearly valuable, extinct features reminded us that there are many excellent ideas

out there that have already been validated but continue to languish waiting for someone more interested in exceptional design than reinventing the wheel in their own image.

Mr. Buxton went on to assert that it is critical for performance instruments and systems to have the capacity to adapt between different acoustic environments, i.e., concert halls, in order to create comparable exceptional musical experiences for audiences in any space. Later he discussed the advantages of a virtual control console based on a large touch-sensitive tablet, with cardboard cut-out overlays emulating sliders, buttons, and other structured controls, allowing simple switching between controller layouts for various purposes using a single piece of fairly simple hardware. Having impressed us with the depth of his thought and decades of work on the subject, he ended by reinforcing his initial assertion that just like sound itself, gesture is a language underpinning the relationship between performer(s) and audience. Mastering that gestural dialogue is essential to creating a theater of performance, that environment in which the inspiration of musicians feeds the exhilaration of audience and back again in wonderful reciprocity. Documentation of much of Mr. Buxton's work can be found at his Web site (www .billbuxton.com).

The morning paper session, "Voice, Gestural Control and Multimodality," was relatively entertaining, always a bonus for those of us who eschew imbibing massive doses of caffeinated beverages, and a couple of presentations in particular stood out. Elliot Sinyor showed off his "Gyrotyre," a small (30 cm) bicycle tire attached to a hand grip, able to spin freely around its axis, with a wealth of attached sensors including rotational speed, dual-axis acceleration,

gyroscopic orientation, and force-sensing in the grip. Some basic mappings showed that the controller could be fun to use as well as fun to watch. Michael Lyons demonstrated sonification of facial expressions, which was not only hilarious but also showed potential for meaningful interpretive mappings as the system evolves towards finer granularity and integrative analysis of multiple expressive features. It will be exciting to see the potential of these innovative interfaces applied to more musically sophisticated purposes.

The afternoon paper session, "Learning, Tools + Connectivity," showcased some interesting projects as well. Art Clay discussed "Going-Publik," a distributed coordinated collaboration using handheld electronics. Essentially, the participant performers use wearable computers as instrument and global positioning system (GPS) tracking interfaces, with a dynamic score projected on their eyepiece monitors as they traverse a city. Niels Böttcher then presented "Connecting Strangers," an attempt to create spontaneous sonic interactions between passengers waiting on opposite train platforms. The project team tried several approaches to balancing the imperatives of being sufficiently accessible to learn and enjoy within a few minutes's time, with enough challenge to hold participant interest after they "figured it out." The interactive aspects of the work turned out to be the most difficult, with additional work and experimentation planned to encourage players to not only explore their own "side" of the sound, but cooperate across the tracks as well. Mark Havryliv described "Pocket Gamelan," essentially a cross-compiler that can translate a Pd patch seamlessly into Java 2 Micro Edition (J2ME) code for deployment onto a mobile phone or other portable de-

vice that supports J2ME. He demonstrated live conversion of several fairly complex patches and successful testing in a desktop emulation environment, an already impressive feat that will surely become even more so with further refinement.

Saturday evening's concert began with Thomas Ciufo's *Beginner's Mind*, shakuhachi slowly fading in, maintaining a sense of time being stretched and extended, with a haunting sustained atmospheric environment throughout. Then *Cybersong* by Paulo Maria Rodrigues, Luis Miguel Girão, and Rolf Gehlhaar took us in a decidedly more dramatic direction. A static noise began with house lights still up—technical difficulty or beginning of the piece?—then Mr. Rodrigues walked down the house right aisle, donning a tux jacket as he mounted the stage. A grand "O freunde!" yielded to falsetto sostenuto which then recycled through electronics in an eclectic cascade of conscious chaos. A later section turned into a hilarious remix of the recited text: "A fish is a machine that preserves genes in water. A monkey is a machine that preserves genes up trees." This segued into manipulation of "radio" waves via clownish mouthpiece. Overall, the piece was disjointedly non sequitur, but brilliantly performed, concluding with maniacal laughter building through feedback to a final "Shut Up!"

Next came Elaine Chew performing Ivan Tcherepnin's *Fêtes (Variations on Happy Birthday)* as an interlude, eloquently played. It seems a little dangerous to include compelling purely acoustic work on the same program as highly experimental material, as the inevitable comparison underscores just how great a journey we have left ahead of us. *Ye Ying Di* [Nightingale Floor] by Margaret Schedel, in collaboration with video artist Charles Woodman and choreog-

rapher/performer Alison Rootberg, started with a strikingly costumed Rootberg all in white, arms and legs illuminated in patterns of neon wire, gently and gracefully unfolding in front of projected video. The movement and imagery combined evocatively at times, with real-time capture of the dancer's glowing lines sensitively blended into the mix. However, due to limitations of the stage setup, it was difficult to cognitively integrate the dancer and the background into a coherent union. Discerning the relationship between Ms. Rootberg's movement and her influence on the sound and video was also challenging, in part because there was clearly something so almost there that I yearned to feel a satisfying connection instead of just giving up on the idea. Having seen this work a few times before, I was aware that many of the wonderful elements I had previously witnessed were not entirely operational for some reason, which left me wishing that this audience could have experienced more of its full intention. Even though we have learned to be forgiving when it comes to new music, it's always a shame when technical issues restrain the artistic blossoming of a lovely piece.

Jamie Allen attacked what appeared to be a suitcase full of noise in *boomBox*, to great theatrical effect. It might be a stretch to call it music, exactly, but it was tremendously expressive, surprisingly funny, and highly entertaining from beginning to end. Afterward, David Birchfield on sensor-extended percussion and Curtis Bahn on electronically enhanced vertical bass performed *Improvisations*, a structured exploration of the capabilities of their instruments and the relationships between them. While both players are very skilled and sensitive, somehow here they seemed to be inhabiting completely different,

incompatible sound worlds, with the timbres simply refusing to gel. This might have been less problematic if the sounds had been warmer and more inviting in general.

Finally, Dan Trueman performed *BoSSA Studies*, three short pieces for his Bowed-Sensor-Speaker-Array instrument. The first, *Vocalise*, sampled Mr. Trueman's voice through headset microphone as material for transformation and manipulation. The second piece, *Lobster Quadrille*, is becoming a classic, a setting of the poem from Lewis Carroll's *Alice in Wonderland*. The composer-performer persuasively showed how a very satisfying intuitive connection can be forged between gesture and sound, even in a fairly abstract relationship such as "playing" text samples with violin technique. The last piece, *Tetha*, included Tomie Hahn performing shakuhachi. The acoustic and electronic spaces integrated well, with the shakuhachi plainly the dominant element, the BoSSA seeming to function primarily as effect and atmosphere. Unfortunately, near the end Ms. Hahn began barking and then things went swiftly downhill, leaving me to wonder why so much electroacoustic music forms contrast against lyricism by playing the crazy card. Is it discomfort with using our medium as a means of expressing serious sentiment, or are we really all just that wacky?

Publications

Arun Chandra, Editor: When Music Resists Meaning: The Major Writings of Herbert Brün

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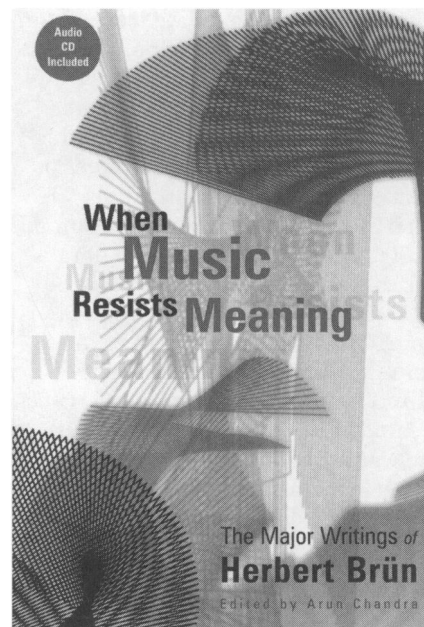
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Reviewed by Ross Feller
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Born in Berlin in 1918, Herbert Brün left Germany and went to Palestine shortly after the Nazis assumed power. In Palestine he studied composition with Stefan Wolpe, Eli Friedman, and Frank Pelleg at the Jerusalem Conservatory. In 1948 Leonard Bernstein brought Brün to Tanglewood, in Massachusetts, to continue his studies. Shortly thereafter he attended Columbia Univer-