depict the real world, the work succeeded in creating an even more convincing virtual one.

Se-Lien Chiang's piece, Gula huset for fixed media, constructed from recordings of instrumental sounds, was fascinating as it avoided the more typical characteristics of instrumental music. Instead, the work presented a virtual world, an enriching and imaginative field built from the collected instrumental samples and their restrained processing. At times, the work was like a field recording for a world which only exists in composition, which highlighted strengths inherent to our art form. Through a skillful spatialisation, I felt the music reach out beyond the concert hall. The sounds seemed to extend out and through loudspeakers, pulling us further and further away, rather than grounding us in our chairs.

Before Hugo Solis's and Gabriela Villa's Duo *Juum Improvisation* for solo viola and electronics, I asked myself how can a solo instrument possibly compete with the totality of all sounds available to a computer? The question was poetically answered when, in the midst of a fiery moment, the violist detuned her lowest

string while playing, dramatically extending the viola's range to match a deep glissando in the electronics. All in all, the performance was an engaging and sensitive dialogue between two experienced musicians, who both understand the challenges of their chosen instruments.

In the last work, Daniel Gomes's fixed media piece *Invergent Flex, for alloy*, the hand of manipulation is everywhere. Although an investigation of alloy and other metals, the performative nature of the metals being stroked and rattled, as well as the electronic processing of the sounds put the transformation and manipulation of the found material at the forefront of the work. The sublimation of natural sounds into the concert hall, inherent in all the works, was here most obvious.

Concert 11 Wednesday, Aug 8, 8:00 p.m. Grand Hall, Daegu Concert House Reviewed by Alexander Sigman

Occurring on the third full day of ICMC, just following the customary banquet dinner, this concert featured nine works, six of which involved live performance. As

was the case on other programs on the conference, there were instances of composers performing their own pieces. On this occasion, however, these performative contributions were not confined to the domain of music. I will describe and comment on the works that were amongst the most memorable.

The program began with characteristically immersive and captivating multichannel fixed media work by Robert Normandeau. Commissioned for the fiftieth anniversary of the Montreal metro by the Société de transport de Montréal (STM), Tunnel azur dramatizes the "cinema for the ear" created by the metro tunnels at different times of day. The title makes reference to the new Azur trains placed in circulation by the STM. As the composer explains, "[t]heir name is particularly significant, since we usually associate azure blue with that of the sky, while the metro lives in perpetual night." This state of perpetual night is further darkened by samples derived from the octobass. nineteenth century instrument, which the Orchestre symphonique de Montréal (OSM) recently acquired. Traces of Mahler's Ninth are also to be found amongst the layers of sonic material,

which bear personal significance for Normandeau. (The Mahler was the first piece that he had heard Kent Nagano conduct, and is amongst his favorites.) Despite the heterogeneous nature of the sound sources employed, Tunnel azur maintained focus and fluidity throughout.

Likewise for Peter Hulen's Homage and Refuge, scored for voice and electronics. Despite the eclectic array of linguistic and textual references that the work absorbed, it maintained a singular character and consistent relationship between the vocals and live processing. Hulen opens his program note by stating: "Homage and Refuge (2017) is what the Middle Indo-Aryan Pali language, subtractive synthesis, Theravada Buddhism, pulse waves with resonant filters, The Anglican Chant Psalter, digital voice encoding and decoding, and the 14th-century anchorite and English mystic Julian of Norwich all have in common." The composer's intoning of this diverse array of texts is harmonized and transformed in the electronics, resulting in a vocoderinflected permuting chord sequence. Given the digital techniques employed, it was difficult to avoid associations with Peter Frampton-era Talkbox vocal processing.

University of California Santa Barbara student Rodney DuPlessis' BachFlip also made use of historical raw material. centering on the singing voice: namely, the Dona Nobis Pacem from Bach's B Minor Two spectral Mass. manipulation techniques were applied to the Bach: spectral compression, in which "the 16 most prominent partials of a given sound are pulled towards a dynamic center frequency," and spectral spatialization, i.e., the segmenting of the spectrum into bins, which are spatially distributed. In the case of spectral compression, compression rates exceeding 100% result in an inversion of spectra across the center frequency (hence the "flip" of "Bachflip"). While these spectral operations in themselves were perhaps not perceptible upon first hearing, and contrary to the composer's claims, have been employed in acousmatic and electroacoustic composition for some time, they produced intriguing distortions to/dissections of the mass movement. whose identity was never entirely masked.

Although the program note of Toho Gakuen student Mizuki Kobayashi's *Crowd/Masse/Gunshu* focuses on group and swarm behavior, the salient feature of the piano/live electronics piece was its extensive use of ring modulation. As a

result, the work connoted classic '70s electroacoustic pieces such as Stockhausen's Mantra and Murail's Treize Couleurs du soleil couchant. Nonetheless, there was an at times mesmerizing quality to the pacing of the piece.

The program concluded with sound artist, researcher, computer engineer, and tango dancer Courtney Brown's Puente: A Study in Interactive Tango Dance. In this study, she and dancer Brent Brimhall, outfitted with motion sensors, generate musical output structured via dance improvisation. Besides reversing the typical music-dance causality paradigm, there occurs a feedback loop between dance and music. That is to say: not only did the choreography influence the music, but the music, which maintained some of the tropes of tango but extended beyond its limitations, would influence the dancers' movements. While interactive dance/movement employing input have a long history, there was some degree of novelty to the application of such a system to a social dance form laden with conventions.

As was the case for most of the concerts at this year's ICMC, the performances proceeded relatively smoothly, with only one or two unexpected delays. Despite the overabundance of concerts and listening space sessions, it was a pleasure to discover the recent works of composers spanning generations, geographic locations, aesthetics, and praxes that this and other programs represented.

Concert 12 Wednesday, Aug 8, 10:00 p.m. Late Night Concert, Sogeum Changgo Reviewed by Peter Hulen

Sogeum Changgo is a gallery and performance venue that includes a restaurant and bar near the Daegu Concert House. The late-night concerts were held there. This concert was well attended, with audience members filling the tables at stage level and sitting at the bar. Some tables were pushed together to form one long communal table where attendees drank and ate snacks during the concert, meeting each other and chatting between pieces. The atmosphere was convivial and energetic, and the mix of pieces was eclectic and engaging.

The concert opened with *The Blue Line* for oboe and electronics by Hong Ehwa. The oboe part, played by Na Eun Kim, consisted of separated long and staccato

tones processed into staccato echoes, and long, honking multiphonics. Sustained high tones were transposed into simultaneities. There were trains of recorded staccatos. Layers of processed sound built up, subsided, and built up again, mixing with the relatively prominent and dramatic oboe part.

The next piece was *The Murmurator* for live electronics by Eli Stine. The audio was partially fixed and partially processed live. As the title suggests, sonic materials consisting of granularized audio were structured and spatialized over the eightchannel system according to flocking patterns, controlled live through a control interface. The sonic texture was continuous as layers of granular streams faded in and out, creating an ebb and flow and their collective of members amplitudes through a continuous simultaneity of sound. The layers in these textures became somewhat tonal, and finally gave way to granular trains at the culmination of the performance.

After that electronics-only piece, the program moved back to instrumental performance with *Spiritual Fragments* for haegeum and electronics by Jeonghyeon Joo and Patrick Rhie. This was a