

timeSpacePlace: Nathaniel Bartlett's New Paradigm in Percussion Performance

By Kurt Gartner

Percussionist/composer Nathaniel Bartlett continues to pursue his vision of sharing highly nuanced performances with his audiences via live and recorded performance. Regularly, he exercises his skills as a composer, performer, improviser, and engineer. Via his website, he describes his concept in this way: “When one listens attentively to details, it becomes readily apparent that most complex vibrating bodies—be they gongs, strings, etc.—do not produce a ‘note,’ but rather dozens or hundreds of perceivable events that unfold over time before the complex vibrating body comes to rest. In my music’s sounds—both those produced acoustically and electronically—the complex nuances are used as critical artistic components. In my computer-integrated work, the computer is often used to emphasize the constituent parts within a single acoustically produced sound, as well as how the parts evolve, and mold them into new, compelling sound objects.”

His primary vehicle of expression is the marimba, but he goes far beyond, incorporating real-time three-dimensional, high-definition, computer-generated sound. Additionally, he uses real-time computer notation processing, also of his own design. For years, Bartlett has been assembling the finest components available in all links of the performance chain, from the acoustic instrument to the microphones, computer system, and speaker array. As he describes in his web site: “My performances seamlessly meld my five-octave acoustic marimba with a powerful Linux-based computer, custom computer control interfaces, a variety of hardware audio electronics, and eight loudspeakers (plus subwoofer) arranged in a cube. With the audience positioned in the center of the loudspeaker cube, an elaborate, kinetic, three-dimensional sound environment can be projected into the audience space, totally immersing the listeners in the music. In my immersive sound environments, spatialization (the positioning and movement of sounds in physical space) becomes a central musical parameter, alongside of pitch, rhythm/time, timbre, and so on.”

This attention to detail allows him to minimize the variables in live performance

venues—each of which has its own acoustical properties and challenges. In recent years, Bartlett has expanded his goal of realizing performances with great attention to sonic detail, creating his own label, Sound-Space Audio Lab. Under this label, Bartlett has released four albums, each of which contains his performances in multiple audio formats. Formats include HD multi-channel, HD stereo, and CD-quality stereo. In this manner, Bartlett allows his listeners to experience his recorded performances in the highest audio quality available to them.

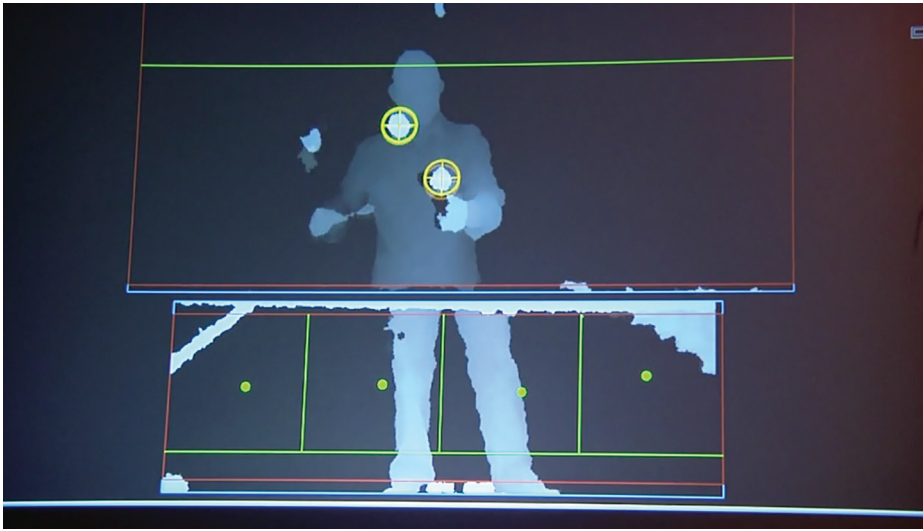
In 2010, Bartlett released *Far Reaches*, the first album under his Sound-Space Audio Lab label. Recorded in Madison, Wisconsin, this album includes two Bartlett compositions: “star_birth,” for solo percussion (performed by Justin Alexander), and Bartlett’s performance of “Heap,” for solo (metallic) percussion and real-time three-dimensional, high-definition, computer-generated sound. The pairing of these two compositions on this album comprises an abstract representation of the birth and death of a star. As Alexander was in Madison to perform the premiere of “star_birth,” Bartlett was also collaborating with

locally-based artist Andrée Valley, who needed a musical component to complement her metallic sculpture exhibition. Bartlett’s collaboration with Valley led to his composition and recording of “Heap,” in which the most prevalent element is the computer-manipulated sound. In Alexander’s recorded “star_birth” performance, Bartlett’s strategic placement of microphones gives surround sound listeners the experience of hearing the work from within Alexander’s percussion setup.

The second album under Bartlett’s label is *Trichotomic Ecology*, released in 2011. The title (and only) track on this album represents an extensive musical dialogue between Bartlett (playing marimba), percussionist Geoff Brady, and violist Nils Bultmann. The composition was also a component of Bartlett’s doctoral dissertation project at the University of Wisconsin-Madison. Like many of his other works, Bartlett includes a computer-generated sound component in this composition. These computer-generated sounds manipulate and heighten nuance of the performers’ acoustic sounds. Also, each player occupies a unique spatial position relative to listener, further



Nathaniel Bartlett’s modular studio setup



Nathaniel Bartlett's mallet/body-tracking computer control interface.

intensifying the listening experience. Furthermore, Bartlett makes use of his computer-generated notation for all performers in this work.

In preparing and rehearsing the work, Bartlett recognized the deeply personal musical style of Brady and Bultmann. His notational system allows a great freedom of individual and complementary expression among these musicians. During the interview for this article, Bartlett elaborated further on his need for and development of his notational system. By the time he was developing the “star_birth” project, Bartlett was feeling confined with the traditional meter-based notational system for his music, which is largely ametric. He wanted to avoid “having to write music that from a metrical standpoint looked very complex yet didn’t sound that complex.” His system uses spatial notation, colors, and other elements to capture musical intent in a literal and clear “performer-friendly” way: “We’ve all played those pieces with a 13-tuplet nested under a 7-tuplet with embedded rests. There’s no way that in certain contexts this type of metrical concept will be perceived precisely—that’s not even the intent. It’s about getting the music in the right temporal position as opposed to the right metrical position. For my taste, I was able to solve some of these nagging problems.”

Incidentally, Bartlett continues to compose for multi-percussion as well as marimba and computer-generated sound. His latest composition (and likely component of his next recording project) is “luminous machine,” which also incorporates Bartlett’s unique notational system.

Another collaboration with the sculptor Valley, Bartlett released the album *(((clang)))* in 2012. Having acquired new equipment such as highly sensitive microphones, Bartlett achieved heightened levels of quality and precision of recording for this project. Like prior projects,

(((clang))) incorporates solo marimba, computer-generated sounds, and metallic percussion instruments that create sonorities or sound sculptures. Bartlett and Valley also developed installation versions of the piece, in which viewers of Valley’s sculpture create soundscapes in real time.

In 2013, Bartlett released *timeSpacePlace*, his most recent album. Its two tracks, “a-side” and “b-side” offer two versions of the same composition, which are set apart by the different algorithmic techniques applied to each rendition. Bartlett set this work to the video installation *Unseasonable Events Change Hands* by Toby Kaufmann-Buhler. Their combined work has been presented both live and also in gallery installations. The general concept of the video installation relates to the cycle of the four seasons. Bartlett’s music changes in nuanced, abstract ways with video

progression. Much of the video piece is broken into different frames shown simultaneously—waves of frames with delay reminiscent of animation. The viewer sees these juxtaposed points of time as time and delay effects of the music complement this visual element. Bartlett calls this element “a visual depiction of time reflected in my music.”

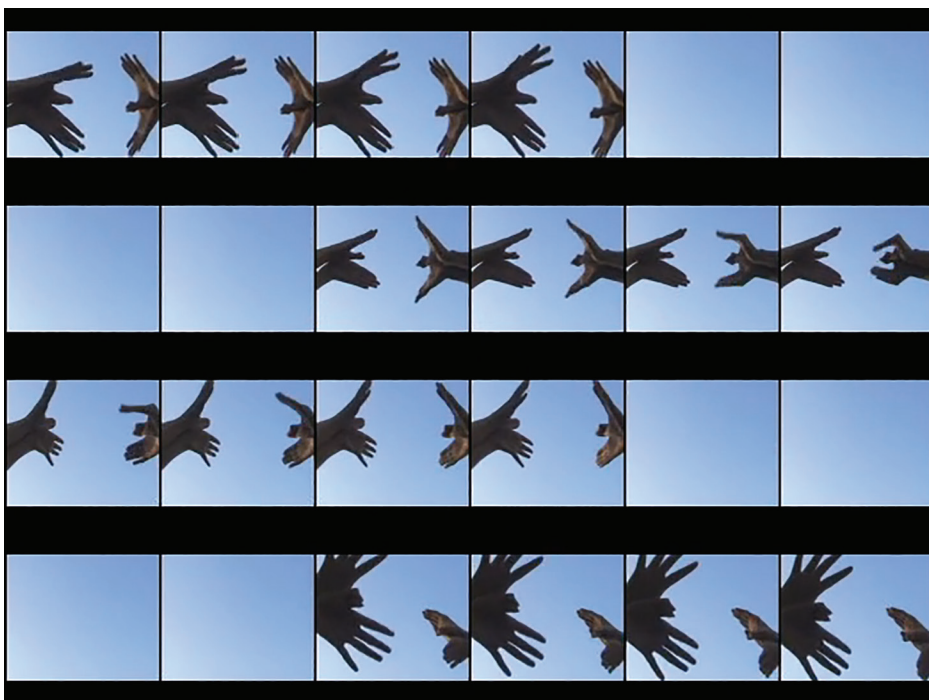
Also, *timeSpacePlace* marks Bartlett’s first use of a computer interface for tracking mallet and body motion, then initiating computer responses to his physical performance gestures: “You’re very physically engaged with marimba gestures, limiting your options to interact with the computer. Pedals work very well and are still a part of my computer control interface, but I realized that there were many other technologies available that allow one to interact with a computer.”

Bartlett recounts a project at the University of Wisconsin in which a professor directed students to interact with sound in a 3-D space using video cameras. Eventually, project participants switched to depth cameras using infrared laser light, solving many of the tracking problems associated with regular optical video cameras. Bartlett further developed this system for his own use in live and recorded performance.

With Bartlett’s tracking system, the computer can be instructed to ignore all gestures beyond a pre-determined threshold. Therefore, the computer does not track ordinary performance gestures to manipulate sound; tracking commences when mallets exit the designated “marimba space.” Tracking is based on the order of appearance of mallets, each of which is assigned a uniquely colored crosshair. Bartlett sees a mirror image of himself in this virtual (infrared) representation, allowing him to execute gestures in a



Nathaniel Bartlett's live setup



Toby Kaufmann-Buhler's piece "Unseasonal Events Change Hands"

precise way. Similarly, another device monitors the motion of his feet. Currently, Bartlett is developing a piece in which his a third sensor will track his torso, arms, and other points in space. The infrared image of Bartlett has its own visual appeal, and his intent is to project this image for live audiences. This, too, presents another order of complication regarding his self-contained rig, already brimming with his marimba, computer, monitors, and loudspeaker array. For now, his decision to employ video in live performance is largely a function of a given venue's projection capabilities. In similar fashion, he is considering the projection of his musical notation, as long as this element enhances the aesthetic of the total work.

There are advantages as well as challenges to both live and studio performance environments, a fact readily acknowledged by Bartlett. The studio setting is Bartlett's "abstract perfect universe," in which he can place microphones and instruments in a controlled environment of his design. Additionally, all marimba and computer sounds are isolated in headphones, allowing for the highest possible recording quality. Once he has produced his recordings, the quality of realization is limited primarily by the listeners' playback equipment. Again, Bartlett provides content in multiple formats, enticing listeners to seek the best possible listening experience. In following with his "D.I.Y. ethos," he has even created his own modular system of sound treatment panels for the studio environment. Suitable for installation in a small room like the bedroom of a house, the system was portable enough to take on his move from Madison to New Mexico.

The primary advantage of presenting live performances is the assurance that listeners will experience his music in intended high-definition, eight-channel realization. Challenges of live performance are generally based on the acoustical variables inherent to each venue in which he performs. Of particular concern is the variety of feedback sources that may be introduced to the loudspeaker system. The slight loss of expressive nuance due to the use of a gate effect on a particular sound within his performance represents the trade-off for his assurance that his audience will experience his music with the live performance aesthetic and in the intended eight-channel mode of delivery.

A second and perhaps equally challenging aspect of live performance is logistical in nature. Bartlett has spent a great deal of thought in refining the manner in which he transports the equipment necessary to perform live: "There's a whole logistical side. Even if you have really nice audio equipment, if you can't deploy it in a really effective way, then you can't take your music outside of your lab or studio."

To this end, Bartlett has created a new suite of road cases, which allow him to transport his marimba, computer, monitors, and loudspeaker array in very compact space; the entire rig fits within his minivan. Additionally, all equipment is cased in order to facilitate the most efficient setup process possible; the equipment within each case is packed for proximity and ergonomics. Even his stands and mounts are customized for efficiency.

Nathaniel Bartlett is extraordinarily meticulous in his vision of his music, how it should be performed, and how best to deliver

the performance to his listening audience. Equally powerful are his creative and organizational sensibilities. His attention to detail and musical sensitivity is clear in every aspect of his performances, which take listeners to new places—the ageless essence of music experienced in the very latest manner.

Nathaniel Bartlett's website is nathanielbartlett.com.

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