

Zenph Re-Performances

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I'M SURE THAT EVERYBODY expects to see a digital Duke Wayne riding tall in the cinematic saddle once again, or a bespoke Bogart once again filling the big screen with his tough-guy demeanor and characteristic cigarette stub hanging sardonically from his lower lip. Such is the power of digital animation these days. But I have to tell you that the idea of a digital recreation of a long-dead musical artist's performances is something that I doubt any of us could have predicted.

Sure, there is always the "Vorsetzer," that turn of the 20th-century Rube Goldberg contraption which allowed the great pianists of the day to record their key-strokes for posterity on paper rolls, and there are many audio recordings made from these rolls, the most famous of which were "produced" by Joseph Tushinsky, the head of Superscope/Marantz (once the Sony importer for the USA) in his Hollywood living room (they were the "Keyboard Immortals Play Again, in Stereo" series from the 1970s), and yes, many of these rolls have been converted into MIDI (Musical Instrument Digital Interface) commands for playback on Yamaha's Disklavier equipped pianos. But all of these are merely taking advantage of a system that has existed for many years, and which are, after all, merely recordings of then live performers – they aren't audio recordings, but they are recording of the actions of the performers as they played.

Enter Zenph Studios of Research Triangle Park, North Carolina. This company's focus is on building computer software to help understand and recreate *precisely* how musicians perform. The company has developed a technique for translating audio recordings of famous piano

virtuosi into precise digital snapshots of the of the original performance's every note including details about pedal actions, volume, articulation' in short, every nuance, with millisecond timing. The digital data is then converted into MIDI files and played back on a state-of-the-art Yamaha Disklavier Pro concert grand piano. This process allows for the production of new recordings using the latest equipment and procedures of performances that heretofore were only available as limited fidelity recordings made in an era when reproduced sound was, shall we say, somewhat more primitive than it is today? Zenph calls these "Re-Performances" and they replicate the original musicians touch, timing, and sound, even including the gaffs and the glitches, to an uncanny degree. "We've preserved every single note, including the mistakes," says John Q. Walker, President of Zenph Studios. "The improvements (that we bring to the table) are all related to the sound quality."

OK, just how can this be done? Zenph has designed software that can "listen" to an audio recording of a piano and can then translate that sound into the associated keystrokes of that recording and replicate, exactly, how the original musician played; an impressive accomplishment. The first result of this endeavor is to re-create the 1955 Glenn Gould recording of the *Goldberg Variations* by Bach. They took the master tape, played it for the computer, the computer extracted the playing information and output a MIDI file. The MIDI file was sent to a Yamaha Disklavier-equipped piano (which was tuned by Gould's own ex-piano tuner) and set up in a recording studio known for its

good piano acoustics. In fact, it was the Glenn Gould Studio in Toronto. Before the recording was made, members of the Glenn Gould Foundation were invited to a live “re-performance” of the work. At the end, they stood and applauded. “As many times as I’ve heard the ’55 Goldbergs, it was like hearing them for the first time,” said Malcolm Lester, past managing director of the foundation. “We were tremendously impressed.”

The Sound

The press kit that Sony Masterworks/BMG sent me was quite lavish. Not only did it include a pre-release pressing of the new recording, but it also contained another disc that had bits and pieces the original 1955 (mono) Gould recording alternating with the same samples of the re-performance, for comparison.

Not being an expert on all things piano (I can barely remember *Chopsticks*, much less any of the study pieces from three years of piano lessons as a kid), all I can say is that I listened intently to the comparison CD and I could detect no difference (other than sonic improvements) between the original performance and the re-performance. So, I’m sold on the process. It works and seems to work perfectly. Of course, what the press kit doesn’t tell us is how much work it is to get this computer program to extract the minutest detail from the original recording. It could be that the computer makes a couple of passes at it and then requires a good deal of manual fiddling to get it right. I don’t know.

The Recording

Sony has recorded this work onto a hybrid multi-channel SACD/CD, which of course means that it will play on either a regular CD player or an SACD player. Ultimately speaking, there are five separate recordings arranged in three separate layers on this disc. The CD layer has two complete recordings back to back with a total of 64 tracks. The first recording is normal stereo and the second is recorded binaurally, and best played back through a set of good headphones. The next of the three layers has the same arrangement as the CD layer, with the work recorded twice; once in regular stereo and once binaurally, only these recordings are high-resolution SACD. The third track is an SACD surround-sound layer with five channels. The piano, in this case, was recorded utilizing five microphones; three in front of the piano and two for ambience.

For my listening tests, I used the surround layer played through my Sony 777ES SACD player. The results are excellent. Rarely have I heard a solo piano miked this well. I can only guess at the microphones used, but I suspect that Sony would pull out all the stops on a project such as this and use a quintet of their \$10,000 each C-800GPAC large capsule tube-type condenser mikes. Even though I’m obviously guessing here, one can tell that a large capsule mike was used from the depth and articulation of the bass notes of the piano.

A Conclusion

If you are a fan of Glenn Gould, and if you want a really good state-of-the-art recording of his Goldberg Variations, then I cannot recommend this new recording too highly. If you would like to hear what multi-channel SACD can do when it is properly employed, then, again, I cannot over-recommend this recording. But the piece d’resistance is the SACD binaural record-

ing. It is simply uncanny. If you believe, as I do, that the purpose of high-fidelity audio is to bring the sound of real musicians playing in real acoustic space into your listening room, then you are in for a life-altering experience. It’s been a long time since I’ve had the hair on the back of my neck stand-up from the sound of a recording, but this is certainly one of them. Through my trusty AKG 340 hybrid dynamic/electrostatic headphones, I am transported directly to the recording venue and the trip is more than worth it. First of all, the piano is anchored before you in space. The perspective is very close, and the sense of reality is quite striking. But, once one is over the you-are-there palpability and presence of the piano, you start to notice that you are, indeed, inside of a studio, I didn’t notice this right away, but it began to dawn upon me as the weeks have gone by and I have listened to the binaural rendition (from the CD layer) time and time again on my iPod (using Apple’s Lossless Compression (ALC) scheme – the only way I can stand to use an iPod) with the excellent Shure earbuds that I use, that there seems to be little ambience. The recording has that “studio deadness” to it and for me, that detracts from the perceived performance by making the piano sound disconnected from the world around it. Don’t get me wrong, it’s still the same electrifying presence that it always had, but it’s just more “dry” than I would like.

Once noticed, I went back to my AKG phones and the SACD binaural versions and, no, it’s not a CD vs SACD phenomenon. The SACD sounds the same in that respect. Now, pianos have a place in people’s living rooms and the piano in this studio recording takes on the sound of your living room when the “speaker” version is played and sounds quite natural. On headphones, one obviously needs the room added-in somehow, and it’s not. I don’t mean to make too much of this shortcoming, but I did want to make sure that I adequately explained what’s going on in the binaural version.

Zanph has a series of planned re-performance titles by classical and jazz piano masters culled from the combined archives of Sony BMG Masterworks (essentially Columbia and RCA Victor) including titles by Sergei Rachmaninoff and Art Tatum. I’m looking forward to all of them, not only for the artistry involved but also for the experience of being there as Rachmaninoff and Tatum et al. recreate their magic via the highest fidelity binaural recordings available to date. I just hope they find a better recording venue, one with a bit more ambience, for their future endeavors.

NOTES

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