Culture

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The Virtual Haydn

Haydn a complete sound voyage

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Project Title
Virtual Haydn

Field of industry
Music & Culture

Company name
McGill University

Established
2009

Number of people
3

P-O-V:
This cultural project is at the forefront of creativity, innovation and interdisciplinary collaboration, mixing sound effects, instruments, computer science and recording.

Keyboardist/musicologist Tom Beghin had a dream. A big dream. In honour of classical Austrian composer Joseph Haydn's bicentennial in 2009, Beghin would undertake a complete recording of his works for solo keyboard, but with a significant twist. Beghin would not perform the music on contemporary instrumentation, but rather on seven historically accurate replicas of the original pianos, harpsichords, clavichords etc. of Haydn's time.

A big dream would require big guns, so Beghin called on highly esteemed record producer, and fellow McGill University music faculty member, Martha de Francisco to record the Herculean homage to Haydn. Not long after, yet another McGill colleague, virtual acoustics architect Wieslaw Woszczyk, offered to up the ante: if you can replicate the historic keyboards, maybe it would be possible to replicate several of the rooms where Haydn played back in the day.

It was crazy ambitious – the technology for an undertaking of this nature didn't exist at the time, and it would be the very first time that virtual acoustics were applied to a commercial recording of such magnitude – but the proof was in the final product. The Virtual Haydn: Complete Works for Solo Keyboard (released by Naxos, 2009, on Blu-ray Audio and Blu-ray DVD) features 14 hours of music performed on seven historical keyboards in nine virtual rooms.

For example, for Haydn's "Six Sonatas for Prince Eszterházy" (1774), the McGill team sampled and mapped the acoustics of Eszterháza Castle's lavish Ceremonial Room and... perhaps it's better if they explain it.

"The easiest way to explain the process is that Tom sits down in the McGill lab surrounded by 24 loudspeakers," says de Francisco. "At this point, when he plays the keyboards, it sounds 'acoustically dry' – there's no echo. But Wieslaw has a computer program connected to those loudspeakers and it contains information about how a particular hall in Vienna would react if the music that Tom was playing were played there. So the moment that the acoustics are switched on, the dry sound is complemented by the reverberations created [by the program]."

But, of course, no high-concept virtual acoustics recording project worth its salt would be without its own unique set of technical impediments, and The Virtual Haydn was no exception.

"The critical challenge here was the creation of a virtual acoustic response that had to be instantaneous," says Woszczyk. "It had to be done in real time, it had to be extremely fast, and this is a very complex process. When I declared to the team that this could be done virtually, I actually didn't know if it was going to work because we didn't have a machine and we didn't actually have anything to prove it."

"He's a good poker player," laughs Beghin.

Underpinning the project was a willingness to put innovation at the fore, indulging a dynamic creative process that permeated everything from the initial concept to the development of original technology to support it.