A Dream of Music and Technology

By LeAnn Binford
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The Dallas Symphony Orchestra performs the world premiere of Cindy McTee's Einstein's Dream later this month. LeAnn Binford talks to the composer.

From March 31 through April 2, the Dallas Symphony Orchestra will present the world premiere performances of Cindy McTee’s Einstein’s Dream. McTee recently offered the following thoughts from her office at the University of North Texas in Denton, where she is regents professor of music composition.

What was your inspiration for Einstein’s Dream?

The Dallas Symphony Orchestra’s theme for 2004-2005, Music of Nations, demonstrates relationships between composers and their native countries. Einstein’s Dream reflects my fascination with the artistic potential of the personal computer, an American invention capable of changing traditional concepts of musical sound and time. Ever since the Industrial Revolution, we Americans have embraced science and technology as a major part of our national identity. I am personally intrigued by the discoveries of science and especially by the ways in which the arts and sciences intersect. Both fields investigate the unknown, propose theories, experiment with possibilities, attempt to unify disparate elements and resolve paradoxes, and generally help us better understand ourselves and the world in which we live.

Can you tell us something about the title?

This piece brings music and technology together in a celebration of the 100th anniversary of the miraculous year (1905) in which Albert Einstein published three important papers on quantum theory, Brownian motion, and the special theory of relativity.

How do you bring music and technology together in your composition?

Einstein’s Dream is written for string orchestra, percussion, and computer-processed sounds recorded on CD. My process for incorporating computer music began by recording the sounds of familiar metal objects and metallic percussion instruments such as stainless steel bowls, chimes, and suspended cymbals. I also

Cindy McTee
photo by Angilee Wilkerson, University of North
obtained a recording of DSO Artistic Administrator Victor Marshall reading passages from the writings of Albert Einstein. Then, using audio processing software, I modified those sounds, sometimes beyond recognition; I listened to them, tried to learn from them, and thought about how they and the sounds of the orchestra could be stitched into the same musical fabric. At times, I completely merged the orchestral and computer music sounds, inserting them into the other’s acoustical environment to create a single, unified sonority.

**Have you worked with the computer medium before?**

I first began working with personal computers in the late 1980s. At that time, I used the earliest Macintosh computers and some Yamaha tone modules to compose two electronic pieces that had a huge impact on the ways in which I subsequently approached writing for traditional instruments: my hearing was sharpened; I became much more attentive to nuances of attack, sustain, and decay; I was able to imagine new textures and timbres; and I could also hear more details of pitch and rhythm, as if looking at sound and time through a microscope.

**Why did you decide to incorporate computer music into your new work for the DSO?**

Following my electronic pieces in the 1980s, I wrote what has become my most performed orchestral work, *Circuits*. I continued to write acoustic pieces but with the intention of returning to the computer music medium when the opportunity presented itself. In 2003 I received a grant from the American Academy of Arts and Letters that allowed me to buy the necessary hardware and software, and shortly thereafter, the DSO asked me to write a new piece. I proposed *Einstein’s Dream*, the idea was welcomed, and I began work in May of 2004, finishing the piece about seven months later.

**What do you find compelling about the computer music medium?**

I think the great tradition and refinement of orchestral music beautifully complements the futuristic ‘rough edges’ of electronic music. I was very much aware of boundaries crossed when, in composing *Einstein’s Dream*, the computer music grew out of the orchestral music and vice versa, the two mediums modulating and merging with one another to represent multiple meanings and multiple temporalities.

While I am attracted to the immediacy, risk, and excitement of live performance, I also enjoy the distance, safety, and control associated with pre-recorded computer music. Computers allow us to effectively ‘stop’ sound, to capture, store, modify, and to play back sounds, thereby changing our relationship with time. I am particularly fascinated by the interplay between the kind of time embodied by pre-recorded computer music (fixed and machine-like) and the kind of time represented by live performance (approximate and human).

**Back to Einstein -- wasn’t he a musician?**

He was a devoted amateur violinist and believed that the greatest scientists are always artists, as well. Einstein’s love of music was not always rewarded with perfect mastery, however. A more competent musician is reported to have shouted at him, ‘Einstein, can’t you count?’

Einstein believed that both music and scientific research are nourished by the same source of longing. It seems to me, too, that the longing behind a composer’s search for meaning is the same longing that inspires the scientist confronted with the inescapable mystery of observable reality.