MUSIC TO THEIR EYES

Innovation allows the severely disabled to compose music using only eye movement

By Mark Sullivan
Staff Writer

Three Boston College faculty members who invented a system to provide disabled persons a way of operating computers have refined the technology to offer users another experience: the joy of creating music.

"It's like composing jazz with your eyes," said Prof. James Gips (CSOM), who developed Eagle Eyes with colleagues Assoc. Prof. Peter Olivieri (CSOM) and Assoc. Prof. Joseph Tucee (Psychology).

Eagle Eyes allows severely disabled people to operate computers by moving their heads or eyes instead of hand-held controls. This innovation, combined with new commercially available software, allows an Eagle Eyes user to compose music by moving the cursor to selected notes on the computer screen.

The software was developed for marketing to a general consumer, but the BC faculty members discovered the program could be readily adapted to the Eagle Eyes system. When the music application is running, a screen appears on the computer that resembles an old TV test pattern, with a series of concentric rings corresponding to a range of notes. The user can make musical notes sound by setting the cursor on a crosshair over the ring.

In addition, the system supplies background music, such as a Herbie Hancock recording. As Gips points out, the software was developed so that any improvisational notes played are in tune with the background, making it impossible to "flub" it. "The nice thing about it is, it's no lose -- whatever the kids do with it, it sounds good," said Gips. "The genius of the program is that you have a range of different choices you can make, but however you do sounds remarkable."

"It's thoroughly enjoyable," said research assistant Jonathan Balton '01, as he demonstrated the system recently in a Fulton Hall laboratory.

Rigged with electrodes that connected him to the Eagle Eyes computer, Balton manipulated the rolls and trumpets blantly by moving his head. By adding a joystick, an able-bodied parent or friend can play along in a duet, Gips said, which makes the experience even more enjoyable.

"These kids are profoundly disabled and this is one of the few things they can do as equals with someone else," he said.

Bach to the future

MUSIC'S LEE PREVIEWS PIECE FOR AREA KIDS

By Sean Smith
Staff Writer

Assoc. Prof. Thomas Obeye Lee (Music) showcased his composition techniques and offered a preview of his upcoming work. Lee also talked about his composition for the 3,000 area schoolchildren at a series of youth concerts held in Symphony Hall earlier this month.

Lee's work was featured in "Bach to the Future," the first entry in the 1997-98 Boston Symphony Orchestra Youth Concerts program, which took place Nov. 12-13. The program offers Greater Boston middle and high school students the opportunity to listen to, and learn about, classical music in a concert setting.

Lockhart, who is chairman of the BSO Youth Concerts program, wanted a contemporary work "symbolizing the future, one that hasn't actually been performed yet," and contacted several local composers, including Lee, to find candidates. For the final work, Lee arranged for a computer workstation to be set up on the Symphony Hall stage, which would display the musical notation on a large screen as he played his composition on a keyboard. After Lee had finished his demonstration, the orchestra played the piece.

"I was really glad to have this opportunity," Lee said. "A composer is like an architect. When you sit down and put all these nice ideas on paper, but eventually you have to build the buildings. Well, I can create musical pieces, but I need performers to play it.

Lee also was gratified by some unsolicited critical appraisals of his work. Preparing to leave, he overheard some students discussing the concert program, and all agreed that "they liked the last part best."