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Music on CD-ROM: It Works The Way We Listen, Not the Way We Hear

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WHEN music is casually heard, it seems to be linear, unfolding in time, proceeding from its initial framing silence to its final closing tones. But once we start paying attention to the passing sounds, music is not linear at all. It seems to leap about; our ears find echoes of the past in the present, form expectations about the future, spur recollections of other musical experiences and lead us to interpretations that have nothing to do with music at all. In our minds we pause, rewind, fast-forward, jump and juxtapose. We feel the linear rush of musical events, but we only make sense of them when fighting the sweep of the current.

Now we have a technology that works the way we listen rather than the way we hear: the musical CD-ROM. These disks, which slip into a personal computer's latest, most fashionable accessory, combine image and sound and text. They play music while showing pictures on the computer monitor; their "pages" of text contain "buttons" that call up other screen images and sounds; colored "hot words" can be clicked on, using a mouse, giving definitions and commentary; cursors can change shape from arrows to pointing fingers.

In fact, there is so much that is self-consciously novel about these disks and so much that allows just fanciful romping about, it is almost tempting to dismiss them as no more than pretentious videos for the MTV generation. Do we really need to see a photograph of New York in the

1890's while listening to Dvorak's "New World" Symphony? (ANTONIN DVORAK: SYMPHONY NO. 9, "FROM THE NEW WORLD," created by Robert Winter; for Macintosh only, the Voyager Company, \$59.95.) Does it add anything to read a suggestion that Schubert should be imagined "giggling" during one passage of The "Trout" Quintet? (FRANZ SCHUBERT: THE "TROUT" QUINTET, created by Alan Rich; for Macintosh, Voyager, \$49.95. MULTIMEDIA SCHUBERT: THE "TROUT" QUINTET, created by Alan Rich and the Voyager Company; for Windows, Microsoft Corporation, \$59.95.) Or to watch a severed lizard's head keep the place in a score of a new composition? (ALL MY HUMMINGBIRDS HAVE ALIBIS, by Morton Subotnick; for Macintosh only, Voyager, \$39.95.)

But imagine you were reading the paragraph above and could press the words "New York" and see a century-old street scene and, alongside it, the text by Mr. Winter, a musicologist, laying out the historical background to the symphony. Imagine poking around in the symphony itself to listen to the passages that have been associated with turn-of-the-century Americana, playing a phrase referred to in a review of the period, or hearing how one section of the composition relates to another. Or imagine pressing on the words "lizard's head" and seeing that Mr. Subotnick's composition is built to accompany a surrealist "collage novel" by Max Ernst. Imagine watching those images as the music plays, images ranging from cockroaches to outhouses. That bizarre score pointer might begin to seem right at home.

In fact, if the text of this review were on a CD-ROM, one could still read through it or even skim or scan it, but by clicking on appropriate words or references, every allusion could be given added context and meaning; it would become possible to move into the text rather than just passing along on its surface. Now imagine treating a musical composition that way and you can sense the possibilities in one of these disks.

Mr. Subotnick, who has long been at the vanguard of high-tech composition, has written a piece just for "performance" on the same CD-ROM as "Hummingbirds," entitled "Five Scenes From an Imaginary Ballet": the technology, he explains in an audio introduction to his disk, allows "a kind of chamber art." There was a time when intimate and profound knowledge about music was gained by playing it at home, either by joining with fellow amateurs or by working through piano transcriptions of symphonies and operas. Mr. Subotnick suggests that recordings later provided that same sense of intimacy, with sounds proportioned for the home rather than a public space. But with the growth of high fidelity, he says, recordings provided the sonic equivalent of "going over Niagara Falls." Intimacy was eliminated. Now, with the CD-ROM restricting a single viewer to a small screen, it is possible once again to count on an "extremely intimate" musical experience.

I think he is right: the CD-ROM may not restore the days in which listening to music meant playing music, but it permits us to play with music and play within it; it discourages passivity and encourages active listening. It is the best educational tool developed in music since Czerny's piano exercises. It also addresses one of the major problems of music books: quotations of scores cannot be easily heard.

Credit the Voyager Company with seeing the possibilities of the technology early and by signing up Mr. Winter to produce disks for the Macintosh computer, most of which are now also

available from Microsoft for PC's that run Windows. In addition to Dvorak's "New World" symphony, Mr. Winter has produced guided CD-ROM tours for Beethoven's Ninth Symphony, Stravinsky's "Rite of Spring" and Mozart's "Dissonant" Quartet. The following are all produced for the Macintosh by Voyager: LUDWIG VAN BEETHOVEN: SYMPHONY NO. 9, \$59.95; IGOR STRAVINSKY: THE RITE OF SPRING, \$59.95; WOLFGANG AMADEUS MOZART: THE "DISSONANT" QUARTET, \$49.95. For Windows, they are available as MICROSOFT MULTIMEDIA BEETHOVEN: THE NINTH SYMPHONY, \$59.95; MICROSOFT MULTIMEDIA STRAVINSKY: THE RITE OF SPRING, \$59.95; MICROSOFT MULTIMEDIA MOZART: THE "DISSONANT" QUARTET, \$59.95. (Microsoft is also currently offering these Beethoven and Mozart CD-ROM's, along with Mr. Rich's Schubert disk, as a special boxed set, THE MICROSOFT COMPOSER COLLECTION, \$79.95.) And the musicologist Russell Steinberg has explored three of Richard Strauss's tone poems: "Don Juan," "Till Eulenspiegel" and "Death and Transfiguration." Voyager has produced them on disk for the Macintosh as RICHARD STRAUSS: THREE TONE POEMS, \$49.95; for Windows, the CD-ROM is MICROSOFT MULTIMEDIA STRAUSS: THREE TONE POEMS, \$59.95. Meanwhile, a team of authors has produced a guide to Beethoven's Fifth Symphony for Future Vision Multimedia. (BEETHOVEN'S 5TH, Windows and Macintosh, \$49.95). All of these disks are good; some are excellent; many, unfortunately, hide the names of the tour guides and performers behind corporate packaging. The performances range from the obscure (Hans Schmidt-Isserstedt conducting Beethoven's Ninth) to the mainstream (Lorin Maazel conducting the Strauss tone poems).

Aside from his "Trout" disk, Mr. Rich, a music critic, is producing a continuing series of CD-ROM's called "So I've Heard," devoted to the history of music and "illustrated" with his recommended recordings. Voyager produces the entire series for the Macintosh (Volume 1: BACH AND BEFORE, \$24.95; Volume 2: THE CLASSICAL IDEAL, \$24.95; Volume 3: BEETHOVEN AND BEYOND, \$24.95) and one volume for Windows (Volume 3: BEETHOVEN AND BEYOND, \$24.95). There is also a fascinating encyclopedia of musical instruments (MICROSOFT MUSICAL INSTRUMENTS, Windows and Macintosh, \$59.95).

The encyclopedia shows the potential of the CD-ROM form, though it errs on the side of popularization, providing just enough information to tantalize without deeply informing. But it is still a valuable compendium. Using this disk it is possible to see and hear everything from a Japanese Odaiko drum to a heavy-metal rock band to an African nose flute, while getting rudimentary information about the music in which their sounds have roles.

The various CD-ROM guided tours of masterworks show how deeply you can probe with this technology. Here's how a Voyager disk works. There is usually an opening page that functions like a table of contents, in which each "chapter" is reached by pressing a particular on-screen "button." Those chapters include "A Pocket Guide," which is really a structural map of the composition, labeling the various sections in an opening movement's sonata form, for example, or identifying the trio in a minuet. It is possible to listen to the entire piece while following the pocket guide, or it is possible instantly to compare different passages from the composition -- the exposition of the first movement of a symphony, perhaps, with the rondo theme of its last.

There is usually then a chapter about the composer and the historical background of the work. **In Mr. Winter's masterly disk about "The Rite of Spring," for example, there are 134 "pages" about "Stravinsky's World," including summaries of the recent research by Richard Taruskin showing how often the composer tried to hide his reliance on Russian folk sources. There are photos of Stravinsky, audio mini-lectures about "Firebird" and "Petrouchka" that make it seem as if one is sitting in Mr. Winter's classroom, and descriptions of Diaghilev's original ballet. There are "buttons" that call up musical illustrations and offer opportunities to take detours by exploring the definitions of difficult terms.**

There is sometimes an additional chapter discussing each composer's use of the orchestra, with descriptions ranging from the most elementary (identifying the string instruments) to the more subtle (Stravinsky's taste for the alto flute or the soprano clarinet). **But the heart of each disk is usually the "close reading" in which the score is described in terms directed at the amateur ("Wasn't that beautiful?" asks Mr. Rich, after the fourth movement of the Schubert quintet) as well as the professional (Mr. Winter's explanation of the tetrachord shows how analysis and listening can feed each other).** And there are sometimes "buttons" that can be used to compare disparate passages and chords, or that offer opportunities to hear individual themes and rhythms that recur in different contexts. On the Strauss disk, Mr. Steinberg also points out Strauss's influence on the evolution of the film score, with examples from both "Gone With the Wind" and "Superman."

The most sophisticated example of this mixture of musical analysis, interpretation, history and appreciation is on Mr. Winter's Dvorak disk. It is the best single-volume reference on this composer. It includes the most recent research, along with Mr. Winter's proposal for a revised interpretation of the Scherzo in the "New World" Symphony. "Buttons" allow one to hear bird songs admired by Dvorak or to read the program of an 1893 Buffalo Bill roadshow that is like one the composer attended. It also has one feature sorely lacking on most other disks: the score can be watched as the music plays. Mr. Winter advises the amateur listener not to worry if the notes seem to rush by too fast: "As in life, the trick is to take in as much as you can during the limited time that you have."

That is just where these disks succeed: they expand time and condense experience, so when each work is heard in its entirety, an entire network of musical and extramusical allusions has been established, connecting distant moments. Each CD-ROM concludes with a game or quiz, either about the composer or the composition, asking trivia but also testing recognition of passages in the work. By the time the games are played, they seem superfluous; learning has already turned into play.

The disks create an appetite for more: I would like to see a series of CD-ROM's that teaches theory and ear training; operas and solo pieces deserve some attention as well, and in our self-consciously multicultural age, this technology provides wonderful opportunities for musical anthropology. And I would like to see even more elaborate disks. On the Strauss disk, for example, members of the Los Angeles Philharmonic recorded short excerpts of their individual lines; they can then be heard in combination. Years from now, when storage space, memory and programming are available, it may be possible to encode every instrumental line of composition

separately, from the first violins to the tuba. It may also be possible to alter each line, change its phrasing and then combine it with others. Balances can be shaped with appropriate electronic dials. Perhaps a keyboard could be attached to the PC as well, and be used to send signals to an electronic, custom-made orchestra.

There is already professional editing equipment that can approach this goal, but once brought into the home computer and applied to the basic repertory, this technology would allow a user to learn from analytical examples and recorded performances, and then become both a producer and an interpreter. Music would become a construction; the computer user, a conductor; the student, a performer. We would then truly be returned to the early days of chamber music, when we came to know music by playing it and shared it by playing with it. And who knows? By then, maybe the disks will make themselves superfluous, the virtual reality set aside for studious practice on the real thing.

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