FOR CASTAWAYS ON PROSPERO'S enchanted isle in Shakespeare's *The Tempest*, music that sounds without the agency of a human being, as when the temporarily invisible sprite Ariel plays a pipe and tabor, is a strange and terrifying monstrosity. Prospero's slave, Caliban, accustomed to the magical island, reassures the frightened visitors: “Be not afeard, the Isle is full of noyses, Sounds, and sweet aires, that give delight and hurt not. Sometimes a thousand twangling Instruments/ Will hum about mine eares; and sometime voices…” (III.ii.148-151).

In Shakespeare's world, such events could take place only in the imagination. Yet today, our homes, vehicles, and public spaces are indeed filled with disembodied musical sounds. The very word “music” now refers not, as it once did, to an ensemble, a set of instruments, a score or part, or even a recorded disc, but to a pure commodity: the sounds of performance or synthesis captured electronically and controlled at will. Sounds that can be bought, sold, and contemplated in their own right have been the most far-reaching innovation of recording technology.

Over the century of their existence, the recording industry and the early music movement have shared a history as well as some important priorities. Not only could specialist historian-performers of the postwar era reach a widespread audience through recordings, but also record salesmen could present their unfamiliar musical material as marketable “masterworks” of a shared international tradition. In this way, early repertoire served to bring variety to the musical canon: early music pioneer Noah Greenberg felt in 1966 that the “tyrannical monopoly of the standard repertoire has been seriously weakened” by recording. And, at least for a period in the 1960s and '70s, it appeared that performing techniques were also to be liberated from the 20th century's worldwide homogenization.

And yet early music's greatest commercial and cultural success came when it adopted a mainstream uniformity in tune with the values of the contemporary studio recording. Paradoxically, it is now only through recordings that we can gain a dimly reflected sense of how different such values may be from those of earlier musical eras, when hearing musical performances required people to come together in acoustical and social space.

Feedback

The changes traced in early recorded performances tell a story of musicians learning to hear as the machines heard, rather than as their performances were reflected in the response of a human audience. As anyone knows who has lis-
hands did not sound together, though critics prized the very same asynchronicity as an “art” and a feature of a distinctive “style.” Marcel Moyse was so horrified by the thinness of his flute tone on playback that he added (or so he claimed) a previously forbidden degree of vibrato to his studio playing to enhance his sound.

Many such examples indicate that recording has tended to reduce performers’ range of expression by limiting their exposure to imperfection. Thus, as Robert Philip has written, while early recordings sound much like the performances musicians gave before they grew accustomed to feedback from recordings, modern performances sound as carefully controlled and polished as recordings have grown to be, now that their feedback has become accepted as definitive. Absent from all but the earliest generation of recordings is a sense of the performer’s “aura,” as Walter Benjamin called the awe and veneration unique works of art inspired before the age of mechanical reproduction.

**Style in early recordings**

The diversity of early performances took until about 1960 to vanish: many recordings made before that watershed suggest that current expectations—of tone, ensemble, *portamento*, and production values (extraneous noise, intonation, balance)—have all been set by the recording studio. In a live recording of *Cavalleria Rusticana* that its composer Pietro Mascagni directed in 1938, the singers’ extremes of dynamic and tonal range match the violent and bloody action on the set. Mascagni’s studio recording of the same work, made two years later, however much more polished in its production values, lacks the essential passion of the *verismo* style. That sense of passion comes, in part, from the disorder of the live recording.

The Mascagni example illustrates a shift from the vital spontaneity of a captured moment to the monumental classicism of a permanent product. Other recordings highlight the technical changes in which the shift played out. Eli Hudson’s sophisticated *rubato* in a rendition of Boehm’s Op. 22 variations for flute, recorded in 1908, indicates that for him and his piano accompanist, playing together did not mean playing all the beats at the same time, or even perhaps any of them. Comparing Hudson’s interpretation with Konrad Hünteler’s (made in 1997 on an 1832 Boehm flute) dramatically illustrates the shift in priorities. Hudson’s recording captures a sophisticated and dynamic reading that might have come out quite differently the next time he performed the piece; Hünteler’s represents a carefully-crafted interpretation that enacts the music’s formal structure and stands up in repeated hearings as flawless, if perhaps naive.

The uniqueness of the performances captured on early recordings may be their most striking attribute to today’s listener. Along with a broader technical palette, early recordings present us with a fantastic diversity of style, even within pedagogical traditions now considered as imposing standardized methods and approaches. Listening to recordings made in the earliest three decades, 1895-1925, when the process was entirely acoustic, can be hard work. But the challenge can reward
Recordings and Culture

Though listening is often thought of as the passive “consumption” of a musical product, it is really an active process. When we listen to music on record, we bring along a number of active ingredients in what we think of as the musical “experience”:

- Our mental assumptions: a recorded performance is “clean,” “authoritative,” “permanent.” Many early recordings sound spontaneous, even careless; contemporary listeners perceived a vitality in this that has been all but erased from modern classical music performance.
- Our aural expectations: only certain types of tone, intonation, ensemble, tempo, balance, and production values are permitted. Sometimes early recordings confront us with those that are now forbidden.
- Our analysis of the performances we hear: “musical,” “in tune,” “tasteful.” We make this analysis by applying the assumptions and expectations above in an act of listening.
- Our analysis of the musical compositions we hear: “good/bad music.” Early recordings presented little “serious” repertoire by “great” composers, but rather light songs and arrangements or showy variations. The classical canon took several generations to migrate to the new medium.

Technology Timeline

<table>
<thead>
<tr>
<th>Acoustic (1877-1925)</th>
<th>1877</th>
<th>Thomas Edison records his own voice on a tinfoil cylinder phonograph; patent filed December 24, granted February 19, 1878.</th>
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<td></td>
<td>1889</td>
<td>Columbia Phonograph Co. organizes to market graphophone (1885) for business use. Columbia did well selling cylinders of the U.S. Marine Band under John Philip Sousa.</td>
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<td>1894</td>
<td>Emile Berliner’s U.S. Gramophone Co. sells 1,000 machines and 25,000 hard rubber discs. Company incorporates in 1895 and switches to shellac discs in 1896.</td>
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<td>1903</td>
<td>Edison’s mass-produces “Gold Molded” cylinders (50¢); in Europe “Red Seal” 10-inch discs with four-minute capacity feature famous artists, e.g. Caruso. Previous 7-inch discs played for only two to three minutes.</td>
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<td>1920</td>
<td>Commercial radio begins in Pittsburgh. The following year, record sales begin to decline from their $106 million high, but new kinds of “minority” music become popular.</td>
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| Electric (1925-82) | 1925 | First electrically recorded discs and phonographs go on sale; it is now possible to record whole orchestras and symphonies and even film sound. Sound movies made experimentally by Warner Vitagraph in Brooklyn. |
|                   | 1926 | Bing Crosby is recorded with a carbon microphone; new mics by Bell Labs that encourage “crooner” sound are held close to the mouth. Piezo-electric featherweight stylus goes on sale. |
|                   | 1931 | Magnetic tape recorders first built by Dr. Fritz Pfeumer and AEG; BASF makes reels of magnetic plastic tape the following year. |
|                   | 1948-49 | 33⅓ RPM LP vinylite records with 23 minutes per side are introduced by Columbia; RCA Victor responds with 7-inch 45 RPM vinylite, and later polystyrene, records. |
|                   | 1958 | World standard for stereo records is established, first stereo LPs are sold; Hi-Fi components adopt stereo. |

| Digital (1982- ) | 1982 | First digital audio 5-inch CD disc is marketed, boosting the consumer music industry with technology for the computer revolution (1937- ). |
|                 | 1988 | CD sales surpass LPs. |
|                 | 1995 | DVD standards agreed. |
|                 | 2001 | Apple Computer’s iPod. |

us with sharpened stylistic and technical awareness.

Gramophone effects

We think of regular musical rhythm as inherently natural and correct, so that on initial acquaintance, Eli Hudson’s Boehm Variations performance often strikes modern listeners as disorderly until they learn, perhaps on a second hearing, to perceive its urbane refinement. Yet the rhythmic literalness modern performance teaches us to expect represents what Mark Katz calls a “gramophone effect”: a musical change that has resulted directly from the existence of recording.

In the early music movement, this effect has led us to interpret notation more strictly and more literally in most cases than the music’s contemporaries did. Consider, for example, how rarely we hear the overdotting (extending the time a dotted note is held for more than half its value) that is extensively documented throughout Europe at least from the late 17th through late 18th centuries. To us, “ensemble” means that all instruments and voices arrive on each beat at once; earlier it referred to a less regimented flow of time that allowed musicians a degree of personal freedom from one beat to another, binding their attention together still more tightly than the metronome, because another player’s next beat might not come in an objectively predictable time frame.

Another gramophone effect that leads early music performers to interpret scores literally has been a reluctance to extemporize ornamentation. The oft-heard argument when I was a student 25 years ago was that an ornamented version would become irksome if heard more than once; repetition would give it the status of something permanent rather than improvised — as in jazz recording, where recorded improvisations have achieved the status of classic compositions and are studied as texts rather than acts. But I noticed that my teachers (excepting those trained at Basel) avoided improvising in live performance, too. It might be an overstatement to suggest they were imitating their own recordings, but clearly it was the recordings that set the standards for an
ideal performance rather than the reverse. In the early days, recordings were nothing more than performances overheard by technical means: immediacy, perhaps even imperfection, was valued as giving the impression of being at a live performance. Contemporary commentary on recorded performances often referred to their “vital,” or living, quality.

Lost Worlds
The progress of recording technology is, in another sense, a story of how recorded musical performance has become increasingly embedded in everyday life. We now more often listen to music in solitude, real or iPod-created, than in company. This is surely the most profound difference between our world and those of Hildegard, Bach, Rossini, and Elgar.

With the worlds that produced them so totally irrecoverable, what value can there be in listening to early recordings? Even if we overlook the change in listening practice recording has brought about, there is no question of these performances from another era providing us with a model for straightforward imitation. Many earlier practices seem man-nered today – portamento, to take the most striking example, is universally shunned in modern orchestral string playing but was common until the 1940s. Today we hear its echo only in the soundtrack of classic movies.

The recordings, though, are significant for more than the mere information they contain about how people heard and played music in the old world. As objects created by culture and technology, the real value of listening to them now lies in what happens to us when we interact with them. They can, as already suggested, make us viscerally conscious that our age is culturally and technologically completely different from any earlier one. Understanding that our expectations are historically, technologically, and

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socially situated can free us from their otherwise inescapable dictates. And by placing our authentic selves – ready for change – at the center of the project, this consciousness can turn performing early music from the mere reproduction of static and idealized “works” into a dynamic and genuinely creative mode of musicianship that Hildegard, Bach, Rossini, and Elgar would surely recognize.

Ardal Powell studies, makes, and plays historical transverse flutes and writes about the history of the flute and flute-playing. His book The Flute was the winner of the American Musical Instrument Society’s 2005 Nicolas Bessaraboff Prize.

Selected Resources
——. The Flute on Record, 1902-1940, companion CD to The Flute by Ardal Powell. Folkers & Powell, FP001.
Schoenherr, Steven E. “Recording Technology History.” July 6, 2005 <history.sandiego.edu/gen/recording/notes.html>.